GUIDANCE FOR THE MANAGEMENT OF INFECTION IN PRIMARY CARE WITHIN HERTFORDSHIRE

Ratifying CCG Board Sub-Committee: Hertfordshire Medicines Management Committee on behalf of East and North Herts CCG and Herts Valleys CCG.

Authorising Officer for East and North Herts and Herts Valleys CCGs: Raymond Jankowski, Chair of Hertfordshire Medicines Management Committee

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This document was prepared on behalf of East and North Hertfordshire Clinical Commissioning Group and Herts Valleys Clinical Commissioning Group by the Pharmacy and Medicines Optimisation Team which is part of Central Eastern Commissioning Support Unit.

This document is available electronically or in a larger font or alternative format on request.

Document History

To replace: NHS Hertfordshire Guidance for the Management of Infection in Primary Care November 2011.

<table>
<thead>
<tr>
<th>Progress</th>
<th>Lead Person &amp; Contact Number</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Draft</td>
<td>Alison Dossetter (Pharmaceutical Advisor NHS Hertfordshire – 01279 827230)</td>
<td>January 2013</td>
</tr>
<tr>
<td>Second Draft</td>
<td>Alison Dossetter (Pharmaceutical Advisor NHS Hertfordshire – 01279 827230)</td>
<td>March 2013</td>
</tr>
</tbody>
</table>

NOTE: Doses are oral and for adults unless otherwise stated. Please refer to latest BNF for further prescribing information.
<p>| Final Draft | Alison Dossetter (Pharmaceutical Advisor NHS Hertfordshire – 01279 827230) | March 2013 |
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<table>
<thead>
<tr>
<th>Policy Precedents</th>
<th>NHS Hertfordshire guidance for the management of infection in primary care</th>
<th>November 2011</th>
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Ratified by HMMC | April 2013 
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Produced by Hertfordshire Pharmacy and Medicines Optimisation Team
Hertfordshire, Bedfordshire and Luton Commissioning Support
Central Eastern Commissioning Support Unit

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## GUIDANCE FOR THE MANAGEMENT OF INFECTION

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### NOTE:
Doses are oral and for adults unless otherwise stated. Please refer to latest BNF for further prescribing information.
**Purpose**

To support the appropriate prescribing of antibiotics in primary care.

**Disclaimer**

Whilst every effort has been made to ensure the accuracy of this guideline, the authors cannot accept any responsibility for any errors or omissions. The prescriber should be aware of any side effects, drug interactions or patient specific contra-indications as detailed in the current British National Formulary or the Summary of Product Characteristics.

**Changes from November 2011**

- Addition of choice of antibiotic for the following indications:
  - Epididymo-orchitis
  - Boils
  - Mastitis
  - Panton-Valentine Leukocidin (PVL)

- Revised or new drug choices for:
  - Pharyngitis / sore throat / tonsillitis
  - Otitis media
  - Acute sinusitis
  - Acute bronchitis
  - Acute exacerbation of COPD
  - Community acquired pneumonia
  - UTI in pregnancy
  - UTI recurrent
  - *Clostridium difficile* associated diarrhoea
  - *Helicobacter pylori*
  - Pelvic inflammatory disease
  - Bites

**NOTE:** Doses are oral and for adults unless otherwise stated. Please refer to latest BNF for further prescribing information.
• Cellulitis
• Impetigo
• Insect bites
• Leg ulcers
• Herpes simplex
• Dental abscess

• Revised dosage or frequency of treatment for:
  • Pharyngitis / sore throat / tonsillitis
  • UTI in children
  • *Clostridium difficile* associated diarrhoea relapse
  • Vaginal candidiasis in pregnancy
  • Trichomoniasis
  • Conjunctivitis
  • Dermatophyte infection of the skin

• Revision / addition of comments or advice:
  • Contents page
  • Hyperlinks within document
  • Link to prescribing PPIs in dyspepsia
  • Principles of treatment
  • Educational Resources
  • Restricted antibiotics
  • Position of clarithromycin and erythromycin in guidelines
  • Trimethoprim specific drug warning
  • Otitis media
  • Acute sinusitis
  • Lower respiratory tract infections
  • Acute bronchitis
  • Acute exacerbation of COPD
  • Community acquired pneumonia
  • Meningitis

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Aims

The aim of these guidelines, in line with evidence based national guidelines and primary care priorities are to:

- Promote the safe, effective and economic use of antibiotics.
- Manage the prescribing of antibiotics thus reducing the incidence of antibiotic associated infections such as *Clostridium difficile* associated diarrhoea (CDAD) and MRSA infection.

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• Minimise the emergence of bacterial resistance to antibiotics within the community.
• Assist prescribers in selecting an appropriate antibiotic for commonly encountered infections.

Principles of treatment

• This guidance is based on the best available evidence but professional judgement should always be used and patients should be involved in the decision making process.
• Choices of antibiotic are based on clinical evidence and not on cost as the aim is to reduce the incidence of healthcare associated infections.
• Antibiotics should be initiated as soon as possible in severe infection.
• Prescribing of antibiotics should only occur where consideration has been given to the origin of infection, there is a clinical need and the presence of viral infection such as sore throat, coughs and colds, viral conjunctivitis has been excluded.
• Antibiotics should not be prescribed during a telephone consultation apart from in exceptional circumstances.
• Consider the use of a delayed prescription for infections such as simple urinary tract infections, acute sore throat, acute cough, acute sinusitis, common cold.
• Where an antibiotic is indicated, the agent chosen should be the narrowest spectrum for the identified condition i.e. avoid broad spectrum antibiotics such as co-amoxiclav♣, cephalosporins♣ and quinolones♣.
• Always prescribe for the shortest duration (using broad spectrum antibiotics for long periods can promote resistance).
• Always prescribe generically.
• Avoid topical antibiotics unless indicated as they can promote resistance.
• Always check for allergy before prescribing an antibiotic.
• In pregnancy AVOID prescribing tetracyclines, quinolones♣, high dose metronidazole and trimethoprim (in the first trimester). Short term use of nitrofurantoin (at term there is a theoretical risk of neonatal haemolysis) is not expected to cause foetal problems.
• For recurrent or resistant infection, please contact your local microbiologist for advice.

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**Educational Resources**

The Royal College of General Practitioners have published a ‘TARGET Antibiotics toolkit’ in conjunction with the Health Protection Agency and the Antimicrobial Stewardship in Primary Care. It includes training resources, resources for clinicians, patient information leaflets, antibiotic guidance, self assessment checklist and audit tools. It is available at the following link: [http://www.rcgp.org.uk/clinical-and-research/target-antibiotics-toolkit.aspx](http://www.rcgp.org.uk/clinical-and-research/target-antibiotics-toolkit.aspx)

**Clostridium difficile Infection**

- All antibiotic prescribing should be within the recommendations of this guideline for the shortest period.
- Antibiotics that are associated with *Clostridium difficile* infection are highlighted in this guideline by the following symbol: ♣ and should be avoided in ‘at risk’ groups such as the elderly and those in institutions.
- Current evidence has shown that clindamycin♣ and second/third generation cephalosporins♣ such as cefuroxime♣, cefixime♣, cefotaxime♣ and ceftriaxone♣ are significantly more likely to cause CDAD. Anecdotal evidence has also implicated agents such as quinolones♣, first generation cephalosporins♣ and co-amoxiclav♣. These agents should therefore be used sparingly, especially in the elderly and for patients who live in institutions where CDAD is present. They should also be avoided in patients who have previously been treated for CDAD.
- There is evidence that proton pump inhibitors (PPIs) increase the susceptibility to *Clostridium difficile* infection and the prescribing of PPIs should therefore be considered carefully in at risk groups of patients and only be prescribed where there is a clear clinical indication. Guidance on the prescribing of PPIs in dyspepsia in adults is available at: [Dyspepsia](#)
- Where possible, the prescriber should be guided by laboratory results. Where this is not possible a narrow spectrum antibiotic should be selected.

**Restricted antibiotics**

These antibiotics are significantly more likely to cause CDAD and are therefore restricted. They are marked by the following symbol: ♣ and include cephalosporins♣, quinolones♣ and co-amoxiclav♣. Prescribers are reminded that recommendations to prescribe restricted antibiotics appear in the following areas only:

NOTE: Doses are oral and for adults unless otherwise stated. Please refer to latest BNF for further prescribing information.
**Cephalosporins**:  
- 2\textsuperscript{nd} line in meningitis  
- 3\textsuperscript{rd} line in UTI in pregnancy  
- 2\textsuperscript{nd} line in Pelvic inflammatory disease (PID) – high risk of gonorrhoea  
- 1\textsuperscript{st} line in epididymo-orchitis

**Quinolones**:  
- 1\textsuperscript{st} line in acute pyelonephritis  
- 1\textsuperscript{st} line in acute prostatitis  
- 1\textsuperscript{st} line in Pelvic inflammatory disease (PID)  
- 2\textsuperscript{nd} line in diverticulitis  
- 2\textsuperscript{nd} line in epididymo-orchitis

**Co-amoxiclav**:  
- 1\textsuperscript{st} line in acute pyelonephritis  
- 1\textsuperscript{st} line in diverticulitis  
- 1\textsuperscript{st} line in bites  
- 2\textsuperscript{nd} line in acute sinusitis (persistent symptoms)  
- 2\textsuperscript{nd} line in acute exacerbation of COPD (treatment failure)  
- 2\textsuperscript{nd} line in UTI in children (upper UTI)  
- 2\textsuperscript{nd} line in cellulitis (facial)  
- 2\textsuperscript{nd} line in epididymo-orchitis

**Guidance on Infection Control in Schools and Other Childcare Settings**

The Health Protection Agency (HPA) have issued specific guidance to prescribers on how such infections should be managed and advice that can be given to carers. This is available at: [http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1194947358374](http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1194947358374)

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Specific Drug Warnings

Erythromycin
Erythromycin interacts with many other medications, the majority of which are classified by the BNF as ‘potentially hazardous’. Please see appendix 1: interactions (macrolides) of the current BNF for further information.

Flucloxacillin
The Committee on the Safety of Medicines (CSM) has advised that very rarely cholestatic jaundice and hepatitis may occur up to 2 months after treatment with flucloxacillin has been stopped. Administration for greater than 2 weeks and increasing age are risk factors. Flucloxacillin should not be used in patients with a history of hepatic dysfunction associated with flucloxacillin and should be used with caution in patients with hepatic impairment.

Quinolones
The CSM has warned that quinolones may induce convulsions in patients with or without a history of convulsions. Tendon damage (including rupture) has been reported rarely in patients receiving quinolones. Tendon rupture may occur within 48 hours of starting treatment and up to several months after stopping a quinolone. Quinolones are contra-indicated in patients with a history of tendon disorders. Patients over 60 years or those concomitantly taking corticosteroids are at increased risk of tendon damage.

Co-amoxiclav
The CSM has advised that cholestatic jaundice can occur either during or shortly after treatment. An epidemiological study has shown that the risk of acute liver toxicity was about 6 times greater than with amoxicillin. Cholestatic jaundice is more common in patients over 65 and in men and rarely occurs in children. Jaundice is usually self-limiting and very rarely fatal. Duration of treatment should not usually exceed 14 days.

Itraconazole
Following rare reports of heart failure, the CSM has advised caution when prescribing itraconazole to patients at high risk of heart failure. This includes patients who are receiving high doses and longer treatment courses, older patients, those with cardiac disease and patients receiving treatment with negative inotropic drugs such as calcium channel blockers. Itraconazole should be avoided in patients with ventricular dysfunction or a history of heart failure unless the infection is serious.

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Trimethoprim
Trimethoprim should not be used in those patients taking methotrexate or those who have a low folate status eg those who take folate antagonists such as antiepileptics or those who have a low dietary folate intake unless they are taking folate supplements.

Reference Sources Used


NOTE: Doses are oral and for adults unless otherwise stated. Please refer to latest BNF for further prescribing information.

Acknowledgements

The authors would like to thank the many health care professionals whose insightful and valuable comments helped to shape this document.

Other NHS organisations.

Comments

Comments are welcome and should be directed to Alison Dossetter – Pharmacy and medicines optimisation team lead for antibiotics at:
alison.dossetter@centraleasterncsu.nhs.uk

NOTE: Doses are oral and for adults unless otherwise stated. Please refer to latest BNF for further prescribing information.
<table>
<thead>
<tr>
<th>Infection</th>
<th>1st Line Choice</th>
<th>2nd Line Choice</th>
<th>Duration</th>
<th>Rationale/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UPPER RESPIRATORY TRACT INFECTIONS NICE - Respiratory Tract Infections CG69</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pharyngitis / sore throat / tonsillitis</td>
<td>Do not routinely prescribe antibiotics or consider a delayed prescribing strategy. Majority of infections are viral and resolve within 1 week.</td>
<td>Phenoxymerpilpenicillin 500mg QDS</td>
<td>10 days</td>
<td>The majority of sore throats are viral but there is clinical overlap between viral and streptococcal infections. Consider delayed script as antibiotics generally shorten duration of symptoms by 8 hours. Patients with 3 or 4 Centor criteria (history of fever, purulent or enlarged tonsils, cervical adenopathy, absence of cough) or history of otitis media may benefit from antibiotics.</td>
</tr>
<tr>
<td>Otitis media</td>
<td>Do not routinely prescribe antibiotics. For acute attacks with no systemic features advise paracetamol or ibuprofen for pain.</td>
<td>Clarithromycin 500mg BD</td>
<td>5 days</td>
<td>CKS - Sore Throat</td>
</tr>
<tr>
<td>Acute sinusitis</td>
<td>Do not routinely prescribe antibiotics and advise use of adequate analgesia.</td>
<td>Amoxicillin 500mg TDS</td>
<td>7 days</td>
<td>CKS - Otitis media 60% of attacks resolve within 24 hours without antibiotics. They only reduce pain at 2 days and do not prevent deafness. Consider 2 or 3 day delayed or immediate antibiotics for pain relief if: • &lt; 2 years with bilateral acute otitis media (AOM) or bulging membrane and ≥ 4 marked symptoms • All ages with otorrhoea</td>
</tr>
</tbody>
</table>

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### LOWER RESPIRATORY TRACT INFECTIONS

Low doses of penicillins are more likely to select out resistance. Do NOT use quinolones first line due to poor pneumococcal activity. Reserve all quinolones for proven resistant organisms.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Treatment 1</th>
<th>Treatment 2</th>
<th>Duration</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acute Bronchitis</strong></td>
<td>Amoxicillin 500mg TDS or Doxycycline 200mg stat then 100mg OD</td>
<td></td>
<td>5 days</td>
<td>The benefits of antibiotics are marginal in otherwise healthy adults. The use of leaflets explaining the nature of the illness and why antibiotics are not necessary may be helpful. Consider immediate antibiotics if &gt; 80 years and ONE of: hospitalisation in last year, oral steroids, diabietic, congestive heart failure OR &gt; 65 years with 2 of above.</td>
</tr>
<tr>
<td><strong>Acute exacerbation of COPD</strong></td>
<td>Amoxicillin 500mg TDS or Doxycycline 200mg stat then 100mg OD</td>
<td>Co-amoxiclav ▲ 625mg TDS (if resistance)</td>
<td>5 days</td>
<td>Treat exacerbations promptly with antibiotics if purulent sputum and increased shortness of breath and/or increased sputum volume. Risk factors for antibiotic resistant organisms include co-morbidities, severe COPD, frequent exacerbations or antibiotic treatment within last 3 months. Oral steroids may be considered in conjunction with antibiotics where increased breathlessness interferes with the activities of daily living.</td>
</tr>
</tbody>
</table>
| **Community acquired pneumonia - treatment in the community** | If CRB65 score = 0 Amoxicillin 500mg TDS or Clarithromycin 500mg BD or Doxycycline 200mg stat then 100mg OD |                                                   | 7 days   | **Start antibiotics immediately.** Use CRB65 score to help guide and review.  
0 = suitable for home treatment.  
1-2 = hospital assessment or admission.  
3-4 = Urgent admission.  
Each scores 1: Confusion (AMT<8); Respiratory rate > 30/minute; Age > 65; Bp systolic <90 or diastolic ≤60.                                                                                                                                                                                                                                                                                                |

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<table>
<thead>
<tr>
<th>Suspected meningococcal disease</th>
<th>Adults and children aged 10 years and over Benzylpenicillin IV (preferable) or IM 1200mg, children aged 1 to 9 years 600mg, children aged under 1 year 300mg</th>
<th>Cefotaxime 1G IV (preferable) or IM (minor penicillin allergy)</th>
<th>Give immediate IM Benzylpenicillin or oral amoxicillin (1G) if delayed admission or life threatening.</th>
</tr>
</thead>
<tbody>
<tr>
<td>If CRB65 score = 1 and patient at home Amoxicillin 500mg TDS plus Clarithromycin 500mg BD or doxycycline 200mg stat then 100mg OD</td>
<td>10 days</td>
<td>CKS - Pneumonia</td>
<td>BTS - 2009 Guideline</td>
</tr>
</tbody>
</table>

**MENINGITIS**

Transfer all patients to hospital immediately.
NICE recommends that children and young people with suspected bacterial meningitis without non-blanching rash should be transferred directly to secondary care and not given parenteral antibiotics. If urgent transfer is not possible then antibiotics should be administered.

For suspected meningococcal disease (meningitis with non-blanching rash or meningococcal septicaemia), parenteral antibiotics should be given at the earliest opportunity but transfer to secondary care should not be delayed in order to give the parenteral antibiotics.

Secondary prevention should only be prescribed after consulting a public health doctor.

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<table>
<thead>
<tr>
<th><strong>URINARY TRACT INFECTIONS</strong></th>
<th>Nitrofurantoin is usually first line but should be avoided if eGFR is &lt; 60ml/minute/1.73m²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncomplicated UTI i.e. no fever or flank pain (women)</td>
<td>Nitrofurantoin 50mg QDS or 100mg BD (MR) or trimethoprim 200mg BD</td>
</tr>
<tr>
<td>UTI in pregnancy</td>
<td>Nitrofurantoin 50mg QDS (risk of foetal/neonatal haemolysis if used near to term)</td>
</tr>
<tr>
<td>UTI in men</td>
<td>Nitrofurantoin 50mg QDS or 100mg BD (MR) or trimethoprim 200mg BD</td>
</tr>
<tr>
<td>UTI in children</td>
<td>Trimethoprim (see BNF for children for doses)</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Condition</th>
<th>Treatment</th>
<th>Duration</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>UTI - recurrent (≥ 3 per year)</td>
<td><strong>Trimethoprim 100mg nocte</strong></td>
<td>6 months</td>
<td>Offer a script for stand by treatment before considering prophylactic antibiotics. Use a STAT dose of trimethoprim 100mg post coital if recurrent infection is associated with sexual intercourse (unlicensed and within 2 hours of sexual intercourse). Use a nightly prophylactic dose for recurrent infection NOT associated with sexual intercourse. Long term use of nitrofurantoin is not advisable as it can cause pulmonary fibrosis, hepatic problems and peripheral neuropathy.</td>
</tr>
<tr>
<td><strong>Pyelonephritis - acute</strong></td>
<td><strong>Ciprofloxacin 500mg BD OR Co-amoxiclav 625mg TDS</strong></td>
<td>7 days</td>
<td>MSU should always be taken to confirm sensitivity. If no response within 24 hours or there is clinical deterioration arrange for admission.</td>
</tr>
<tr>
<td><strong>Prostatitis - acute</strong></td>
<td><strong>Ciprofloxacin 500mg BD</strong>  <strong>Trimethoprim 200mg BD</strong></td>
<td>4 weeks</td>
<td>4 weeks treatment may prevent chronic infection. Quinolones are more effective as they achieve higher prostate levels. If patient is sexually active, chlamydia needs to be excluded. Infection should be confirmed with a urine culture which will guide treatment if it is positive.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>GASTRO-INTESTINAL TRACT INFECTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gastro-enteritis</strong></td>
</tr>
<tr>
<td>Antibiotic therapy is not usually indicated as it only reduces diarrhoea by 1-2 days and can cause resistance. Fluid replacement is essential and only initiate antibiotic treatment if the patient is systemically unwell. Check travel, food, hospital and antibiotic history as <em>C. difficile</em> is increasing. Please send stool specimens from suspected cases of food poisoning and post antibiotic use and notify the Health Protection Unit after seeking advice from a public health doctor if an outbreak is suspected.</td>
</tr>
<tr>
<td><strong>Clostridium difficile</strong></td>
</tr>
<tr>
<td><strong>Associated Diarrhoea (CDAD)</strong></td>
</tr>
<tr>
<td>Stop all antibiotics unless it is absolutely essential that they are continued (consider hospital admission in these circumstances) and review need for PPI therapy. Send a stool sample. 70% respond to metronidazole in 5 days; 92% in 14 days. Recurrent disease occurs in about 20% of patients treated initially with either metronidazole or vancomycin. The same antibiotic that was used initially can be used to treat the first recurrence because the majority of recurrences are reinfections as opposed to relapses.</td>
</tr>
<tr>
<td><strong>CDAD relapse (second and subsequent recurrences)</strong></td>
</tr>
<tr>
<td>Send stool sample for confirmation. Withhold antibiotic treatment if symptoms mild. Discuss management with a consultant microbiologist.</td>
</tr>
<tr>
<td><strong>Helicobacter pylori</strong></td>
</tr>
<tr>
<td><strong>eradication (positive test)</strong></td>
</tr>
<tr>
<td>Do not use either metronidazole or clarithromycin if used in the past year for any infection. SEE CURRENT BNF FOR INFORMATION. It is not usually necessary to continue PPI therapy but if the ulcer is large, haemorrhaging or perforated then PPI treatment can be continued for 3 weeks. Discuss treatment with local gastroenterologists to ensure compliance with local guidelines.</td>
</tr>
</tbody>
</table>

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### PPI plus tripotassium dicitratobismuthate

- **PPI plus tripotassium dicitratobismuthate**
- 120mg QDS plus 2 unused antibiotics: amoxicillin 1G BD, metronidazole 400mg TDS, tetracycline 500mg QDS

- **HPA - Helicobacter pylori**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Treatment</th>
<th>Duration</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threadworm</td>
<td><strong>Mebendazole</strong> 100mg stat (for adults and children over 6 months)</td>
<td><strong>14 days</strong></td>
<td>Treat all household contacts. Advise morning showers/baths and general hand hygiene for 2 weeks PLUS wash sleepwear, bed linen, dust and vacuum on day one. For children under the age of 3 months and pregnant women, physical removal of eggs and hygiene measures should be used for 6 weeks.</td>
</tr>
<tr>
<td>Diverticulitis (acute)</td>
<td><strong>Co-amoxiclav 625mg TDS</strong> &lt;br&gt; <strong>Metronidazole 400mg TDS plus Ciprofloxacin 500mg BD in penicillin allergy</strong></td>
<td><strong>7 days</strong></td>
<td>Broad spectrum antibiotics should be prescribed to cover both anaerobes and Gram-negative rods. Paracetamol should be prescribed for pain and the patient should be advised to consume clear liquids only. Solid food can be gradually introduced as symptoms improve over 2 to 3 days. Review within 48 hours or sooner if symptoms deteriorate.</td>
</tr>
</tbody>
</table>

**GENITAL TRACT INFECTIONS - BASHH GUIDELINES.** Refer all patients and contacts with suspected STIs to GUM clinic.

**Guidelines - BASHH**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Treatment</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vaginal Candidiasis</td>
<td><strong>Clotrimazole cream 10% PV or clotrimazole 500mg pessary</strong> &lt;br&gt; <strong>Fluconazole 150mg oral STAT dose</strong></td>
<td>All topical and oral azoles give 75% cure. Avoid oral azoles in pregnancy. There are many other options for treatment including a 3 day course of clotrimazole 200mg pessary and a 6 day course of clotrimazole 100mg pessary.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Condition</th>
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<th>Duration</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vaginal Candidiasis</strong></td>
<td>Clotrimazole 100mg pessary</td>
<td>6 Nights</td>
<td>Counsel patient that applicators may be used but care must be taken to avoid damage to the cervix. Pessaries may be inserted by hand.</td>
</tr>
<tr>
<td><strong>Vaginal Candidiasis</strong></td>
<td>Metronidazole 400mg BD or 2g stat</td>
<td>7 days</td>
<td>A 7 day course of oral metronidazole is slightly more effective than 2g stat. Avoid 2g stat dose in pregnancy. Topical treatment gives similar cure rates but is more expensive.</td>
</tr>
<tr>
<td><strong>Bacterial Vaginosis</strong></td>
<td>Metronidazole 0.75% vaginal gel 5g at night</td>
<td>5 days</td>
<td>Treat partners and refer all patients and contacts to GUM clinic. Refer to BASHH guidelines in pregnancy or breastfeeding as doxycycline is contraindicated and test for cure 6 weeks after treatment (5 weeks with erythromycin) due to lower cure rate in pregnancy.</td>
</tr>
<tr>
<td><strong>Chlamydia Trachomatis</strong></td>
<td>Azithromycin 1g STAT dose</td>
<td></td>
<td>Treat partners and refer all patients and contacts to GUM clinic. Refer to BASHH guidelines in pregnancy or breastfeeding as doxycycline is contraindicated and test for cure 6 weeks after treatment (5 weeks with erythromycin) due to lower cure rate in pregnancy.</td>
</tr>
<tr>
<td><strong>Epididymo-orchitis</strong></td>
<td>Due to any sexually transmitted pathogen Ceftriaxone 500mg IM (stat) PLUS doxycycline 100mg BD</td>
<td>14 days</td>
<td>Use ofloxacin for all cases where patient is allergic to cephalosporins and/or doxycycline.</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th><strong>Over 35 years and/or low risk of sexually transmitted infection</strong></th>
<th>10 days</th>
<th><strong>CKS - Epididymo-orchitis</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-amoxiclav 625mg TDS or ciprofloxacin 500mg BD</td>
<td>Refer to GUM clinic and treat partners simultaneously. Avoid 2g stat dose in pregnancy. There is some evidence to suggest that a 2g stat dose of metronidazole is less effective than 400mg BD.</td>
<td></td>
</tr>
</tbody>
</table>

### Trichomoniasis

| Metronidazole 400mg BD or 2g stat | Tinidazole 2g stat | 5 – 7 days | **CKS - Trichomoniasis**

### Pelvic Inflammatory Disease (PID)

| Metronidazole 400mg BD plus ofloxacin 400mg BD | Ceftriaxone 500mg IM (single dose) plus metronidazole 400mg BD plus doxycycline 100mg BD if gonorrhoea likely | 14 days | **BASHH - PID (PIL)**

### SKIN INFECTIONS

#### Acne (moderate or severe)

| Oxytetracycline 500mg BD or Lymecycline 408mg OD | Erythromycin 500mg (2x250mg) BD (in pregnancy or if tetracyclines not tolerated) | 4 to 6 months | **CKS - Acne**

#### Bites (animal and human)

| Co-amoxiclav 375mg - 625mg TDS (animal and human) | Animal Bites (penicillin allergy) Metronidazole 400mg TDS plus doxycycline 100mg BD | 7 days | Antibiotic prophylaxis (antibiotics and duration as for treatment - CKS) advised for all cat bites, animal bites to the hand, foot or face; puncture wounds; wounds requiring surgical debridement; wounds involving joints, tendons, |

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ligaments or suspected fractures. Also patients at risk of serious wound infection e.g. diabetics, cirrhotics, asplenic or immunocompromised patients and the elderly. Antibiotic prophylaxis advised for all human bites and review after 24 and 48 hours. Assess for HIV, tetanus, hepatitis B&C in human bites and tetanus and rabies risk in animal bites.

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<tr>
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<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Bites (penicillin allergy)</td>
<td>Metronidazole 400mg TDS plus clarithromycin 250mg to 500mg BD</td>
<td>7 days</td>
<td>CKS - Bites</td>
</tr>
<tr>
<td>Bites (insect)</td>
<td>Flucloxacillin 250mg - 500mg QDS</td>
<td>Clarithromycin 250mg – 500mg BD (penicillin allergy)</td>
<td>7 days</td>
</tr>
<tr>
<td>Boils</td>
<td>Flucloxacillin 250mg – 500mg</td>
<td>Clarithromycin 250mg – 500mg BD (penicillin allergy) or erythromycin 250mg – 500mg (2x250mg) QDS (in pregnancy)</td>
<td>7 days</td>
</tr>
<tr>
<td>Cellulitis - mild or moderate</td>
<td>Flucloxacillin 500mg QDS</td>
<td>Clarithromycin 500mg BD (penicillin allergy)</td>
<td>7 days</td>
</tr>
<tr>
<td>Conjunctivitis</td>
<td>Local cleansing of affected eye(s) using boiled, cooled water can be recommended before use of topical antibiotics.</td>
<td>Chloramphenicol 0.5% drops 2 hourly for 2 days then 4 hourly whilst awake or chloramphenicol 1% eye ointment at night or</td>
<td>For 48 hours after resolution</td>
</tr>
</tbody>
</table>

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<tbody>
<tr>
<td>Dermatophyte infection of the finger or toe nail</td>
<td>Fusidic acid eye drops 1% BD</td>
<td></td>
<td>Take nail clippings. Treatment should only be started if infection is confirmed. If symptoms are not troublesome or patients are not at increased risk of developing side effects, then self care measures should be considered. NHS Hertfordshire has stated that the treatment of dermatophyte infections is a LOW priority. <a href="#">Hertfordshire decision</a> <a href="#">Hertfordshire leaflet</a></td>
</tr>
<tr>
<td></td>
<td>Terbinafine 250mg OD</td>
<td>Fingers - 6 to 12 weeks and toes - 3 to 6 months</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Amorolfine 5% topical paint (mild or superficial infections only) once or twice a week</td>
<td>Fingers - 6 months and toes - 12 months</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Itraconazole pulsed therapy 200mg BD</td>
<td>1 week with subsequent courses repeated after 21 days</td>
<td>Fingers require 2 pulsed courses and toes require at least 3 courses</td>
</tr>
<tr>
<td>Dermatophyte infection of the skin</td>
<td>Clotrimazole 1% cream BD-TDS</td>
<td>For 1-2 weeks after the infected area has healed</td>
<td>Take skin scrapings for culture. Consider oral itraconazole if intractable. Topical terbinafine is as effective as clotrimazole. <a href="#">CKS - Fungal nail infection</a></td>
</tr>
<tr>
<td></td>
<td>Terbinafine 1% cream BD</td>
<td>7-14 days</td>
<td><a href="#">CKS - Fungal skin infection</a></td>
</tr>
<tr>
<td>Eczema - infected</td>
<td>If there are no visible signs of infection, the use of antibiotics either alone or in combination with corticosteroids, encourages resistance and does not improve healing. In infected eczema, treat as per impetigo below.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impetigo</td>
<td>Fusidic acid 2% cream/ointment TDS (non bullous)</td>
<td>5 days</td>
<td>Topical treatments should be reserved for localised/minor infection to prevent resistance developing.</td>
</tr>
</tbody>
</table>

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</tr>
</thead>
<tbody>
<tr>
<td>Flucloxacillin</td>
<td>500mg QDS (bullous and non bullous)</td>
<td>7 days</td>
<td>CKS - Impetigo</td>
</tr>
<tr>
<td>Clarithromycin</td>
<td>250-500mg BD (penicillin allergy – bullous and non bullous)</td>
<td>7 days</td>
<td>Ulcers always colonized. Antibiotics do not improve healing unless there is active infection. Swabs and antibiotics are only indicated if there is either cellulitis or evidence of clinical infection e.g. inflammation, redness, pyrexia, increased pain or enlarging ulcer. Send pre-treatment swab in active infection and review antibiotics after culture results. Refer for specialist opinion in severe infection e.g. diabetics.</td>
</tr>
<tr>
<td>Leg Ulcers</td>
<td>Flucloxacillin 500mg QDS</td>
<td></td>
<td>CKS - Leg Ulcers</td>
</tr>
<tr>
<td>Clarithromycin</td>
<td>500mg BD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mastitis</td>
<td>Flucloxacillin 500mg QDS</td>
<td></td>
<td>Antibiotic treatment is recommended if the woman has an infected nipple fissure, symptoms do not improve or are worsening after 12-24 hours despite effective milk removal or bacterial culture is positive. Antibiotics indicated are only excreted in very small amounts and the infant should not be affected but occasionally stools may be looser or more frequent or the infant may be more irritable. The woman should continue to breastfeed and paracetamol can be used to relieve discomfort in addition to warm compresses on the breast or a warm bath/shower.</td>
</tr>
<tr>
<td>Erythromycin</td>
<td>250mg – 500mg QDS</td>
<td>14 days</td>
<td></td>
</tr>
<tr>
<td>PVL</td>
<td>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. Risks: close contact in communities or sports, poor hygiene, eczema. HPA - PVL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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### Scabies
- **Permethrin 5% dermal cream**
- **Malathion 0.5% aqueous liquid** – in permethrin allergy

**Repeat after 7 days**

Treat whole body from ear/chin downwards including under the nails. The very young, elderly and immunocompromised should also apply treatment to the face and scalp. Treat ALL household and sexual contacts within 24 hours.

**CKS - Scabies**

### VIRAL INFECTIONS

#### Chicken Pox
- **Aciclovir 800mg five times a day**

**7 days**

If pregnant, immunocompromised or neonatal seek urgent specialist advice. Consider aciclovir if onset of rash is < 24 hours and patient is over 14 years; or severe pain; or dense/oral rash; or secondary household case; or smoker. If patients develop life-threatening complications such as encephalitis, pneumonia or CNS deterioration they should be sent immediately to hospital. It is recommended that non-immune immunocompromised patients or pregnant women who come into contact with chicken pox are given Varicella-Zoster immunoglobulin (VZIG) if they meet the criteria according to the current ‘green’ book. Supplies can be obtained from the HPA Colindale on 020 8327 7471.

**CKS - Chickenpox**

#### Herpes Simplex (Oral)
- **Cold sores resolve after 7-10 days without treatment. Topical antivirals applied prodromally reduce duration by 12-24 hours.**

**Aciclovir 5% topical cream five times a day**

**5 days**

Counsel patient that treatment needs to be initiated at the onset of symptoms before vesicles appear and that topical antivirals only affect the course of the current episode - they do not cure the individual or prevent further recurrence.

**CKS - Herpes**

#### Shingles
- **Aciclovir 800mg five times a day**

**7 days**

Use if compliance is a problem because cost is ten times greater than aciclovir

If pregnant or immunocompromised, seek urgent specialist advice. Treat if over 50 years and within 72 hours of the rash or if there is active ophthalmic infection or Ramsey Hunt or eczema.

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<table>
<thead>
<tr>
<th>DENTAL INFECTIONS</th>
<th>Valaciclovir 1g TDS or famciclovir 250mg TDS or famciclovir 750mg OD</th>
<th>CKS - Shingles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dental Abscess</td>
<td>Amoxicillin 500mg TDS or phenoxyethylpenicillin 500mg - 1G QDS In severe infection add metronidazole 400mg TDS</td>
<td>Clarithromycin 500mg BD (penicillin allergy) In severe infection add metronidazole 400mg TDS</td>
</tr>
<tr>
<td></td>
<td>Advise the patient to seek treatment from a dental practitioner. Only prescribe an antibiotic for patients who are systemically unwell or if there are signs of severe infection such as fever, lymphadenopathy, cellulitis or diffuse swelling or if there is a high risk of complications.</td>
<td>CKS - Dental abscess</td>
</tr>
</tbody>
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