

Arden and Greater East Midlands Commissioning Support Unit in association with  
Lincolnshire Clinical Commissioning Groups, Lincolnshire Community Health Services,  
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# Lincolnshire Prescribing and Clinical Effectiveness Bulletin

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## LINCOLNSHIRE GUIDELINES FOR THE TREATMENT OF COMMONLY OCCURRING INFECTIONS IN PRIMARY CARE: WINTER 2015/16

In this issue of the *PACE Bulletin* we present an update of our *Guidelines for the treatment of commonly occurring infections in primary care*. For ease of reference, all changes to the previous edition are highlighted in red. More detailed and comprehensive guidance is available from the Health Protection Agency website with the web address provided below. Prescribers wishing to clarify children's doses are directed to the *BNF for children* (September 2015-16). Clear guidance is given on when antibiotics are and are not indicated. Clinicians should note that the role of cephalosporins, quinolones and co-amoxiclav within these guidelines is extremely limited. A helpful poster to display in the surgery waiting room or community pharmacy entitled *Homecare is best: most common illnesses don't need antibiotics* is provided as an Appendix.

Infection	Recommended Agents	Notes
<b>Pharyngitis / sore throat / tonsillitis</b>  <div style="border: 1px solid black; padding: 5px; width: fit-content;">                     Average length of illness is 1 week                 </div>	Most sore throats are viral. Antibiotics are unnecessary in many cases; 90% resolve within 7 days without antibiotics.  <u>When antibiotics are indicated:</u> <b>First Line</b> <b>Phenoxymethylpenicillin</b> 500mg four times a day for 10 days.  <u>If allergic to penicillin:</u> <b>Clarithromycin</b> 250 to 500mg twice daily for 5 days	Consider a ' <b>no antibiotic</b> ' or ' <b>delayed antibiotic strategy</b> '. Ensure that the patient knows that the average length of the illness is 1 week and that it is highly likely to resolve within that time without antibiotics.  <b>Centor Criteria</b> are a set of criteria which may be used to identify the likelihood of a bacterial infection in adult patients complaining of a sore throat. Patients with 3 or 4 of the Centor criteria should be considered for immediate or delayed antibiotic therapy (delay for 2 to 3 days). Centor criteria are: (1) presence of tonsillar exudate; (2) tender anterior cervical lymphadenopathy or lymphadenitis; (3) presence of fever and; (4) an absence of cough.  <b>Numbers Needed to Treat</b> No of courses of antibiotics to prevent 1 case of quinsy >4000. No of courses of antibiotics to prevent 1 case of AOM 200.

Infection	Recommended Agents	Notes
<p><b>Acute Otitis Media (AOM)</b></p> <div data-bbox="209 315 400 528" style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>Antibiotics should not be routinely prescribed for AOM</p> </div> <div data-bbox="209 539 400 752" style="border: 1px solid black; padding: 5px;"> <p>Average length of illness is 4 days (see poster below)</p> </div>	<p>Antibiotics are unnecessary in many cases as AOM resolves in 60% of patients within 24 hours.</p> <p>Antibiotics do not prevent deafness.</p> <p><u>Where antibiotics are indicated:</u>  <u>First Line</u>  <b>Amoxicillin</b>  Neonate (7-28 days old): 30mg/kg three times a day for 5 days  1 month to 1 year : 125mg three times a day for 5 days  1 to 5 years: 250mg three times a day for 5 days  5 to 18 years: 500mg three times a day for 5 days  If allergic to penicillin:  <b>Erythromycin or Clarithromycin</b> (for 5 days)</p>	<p><b>Treat all patients with:</b></p> <ul style="list-style-type: none"> <li>• otorrhoea.</li> <li>• severe signs of infection (e.g. bulging eardrum, inflamed tympanic membrane with purulent discharge).</li> <li>• moderate to severe pain with systemic effects (e.g. vomiting, raised temperature).</li> <li>• no improvement in symptoms after 4 days.</li> </ul> <p>Depending on severity, <u>consider</u> prescribing antibiotics for children with:</p> <ul style="list-style-type: none"> <li>• bilateral AOM (if less than 2 years of age).</li> <li>• cystic fibrosis</li> <li>• immune suppression.</li> </ul> <p>Children who do not meet any of these criteria should not be given antibiotics. Use a '<b>no antibiotic</b>' or '<b>delayed antibiotic</b>' strategy. Reassure patients/carers that antibiotics are not needed immediately because they will make little difference to symptoms and may have side effects (e.g. diarrhoea, vomiting and rash).</p> <p>Use analgesia for symptom relief.</p>
<p><b>Acute Rhinosinusitis</b></p> <div data-bbox="209 1088 400 1350" style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>Antibiotics should not be routinely prescribed for sinusitis.</p> </div> <div data-bbox="209 1361 400 1624" style="border: 1px solid black; padding: 5px;"> <p>The average duration of symptoms is 2½ weeks (see poster below).</p> </div>	<p>Antibiotics are unnecessary as 80% of cases resolve within 14 days.</p> <p><u>When antibiotics are indicated:</u>  <u>First Line</u>  <b>Amoxicillin</b> 500mg three times daily (1g if severe) for 7 days.  <u>or</u> <b>Doxycycline</b> 200mg stat followed by 100mg daily for 7 days.  <u>or</u> <b>Phenoxymethylpenicillin</b> 500mg four times daily for 7 days.</p> <p><u>For persistent symptoms</u>  <b>Co-amoxiclav</b> 625mg three times a day for 7 days</p>	<p>Many cases of sinusitis are of viral origin.</p> <p>NICE CG 69 Respiratory Tract Infections recommends using a '<b>no antibiotic prescribing strategy</b>' or '<b>delayed antibiotic prescribing strategy</b>'.</p> <p>Patients with acute sinusitis who are likely to be at risk of developing complications should be offered an immediate antibiotic prescription in the following situations:</p> <ul style="list-style-type: none"> <li>• if the patient is systemically very unwell.</li> <li>• if the patient has symptoms and signs suggestive of serious illness and/or complications.</li> <li>• if the patient is at high-risk of serious complications due to pre-existing co-morbidity (e.g. significant heart, lung, renal, liver or neuromuscular disease, immunosuppression, cystic fibrosis, young children born prematurely).</li> </ul> <p>Use adequate analgesia.</p> <p>When there is a purulent nasal discharge consider either a delayed or immediate course of antibiotics.</p>

Infection	Recommended Agents	Notes
<p><b>Acute cough / bronchitis</b></p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>The average duration of a cough is 3 weeks; if &gt; 3 weeks, consider pertussis (see poster below).</p> </div>	<p>Antibiotics have marginal benefits in otherwise healthy adults.</p> <p><u>When antibiotics are indicated:</u>  <u>First Line</u>  <b>Amoxicillin</b> 500mg three times a day for 5 days  <u>or</u>  <b>Doxycycline</b> 200mg stat followed by 100mg daily for 5 days.</p>	<p>Routine antibiotic treatment of <u>uncomplicated</u> acute bronchitis is not recommended regardless of duration of cough. Use a '<b>no antibiotic</b>' or '<b>delayed antibiotic</b>' strategy.</p> <p>Antibiotics should be prescribed for those aged 65+ with acute cough and 2 or more of the following criteria;</p> <ul style="list-style-type: none"> <li>• hospitalisation in the previous year.</li> <li>• type 1 or type 2 diabetes mellitus.</li> <li>• history of congestive heart failure.</li> <li>• current use of oral steroids.</li> </ul> <p>In those aged 80+ with acute cough prescribe antibiotics if one or more of the above criteria apply.</p> <p>Antibiotics should also be prescribed for patients who are</p> <ul style="list-style-type: none"> <li>• systemically very unwell.</li> <li>• have symptoms suggestive of serious illness and/or complications (particularly pneumonia).</li> <li>• at high risk of serious complications because of pre-existing co-morbidity (e.g. those with significant heart, lung, renal, liver or neuromuscular disease, immunosuppression and cystic fibrosis and young children born prematurely).</li> </ul> <p style="color: red;">If pneumonia is suspected, consider using c-reactive protein test (CRP). If CRP is less than 20mg/L give no antibiotics; 20 to 100mg/L delayed antibiotics; more than 100mg/L immediate antibiotics.</p>
<p><b>Community acquired pneumonia</b></p>	<p><b>Start antibiotics immediately</b></p> <p><u>If CRB65 = 0</u>  <b>Amoxicillin</b> 500mg three times daily  <u>or</u>  <b>Doxycycline</b> 200mg stat followed by 100mg daily or  <b>Clarithromycin</b> 500mg twice daily</p> <p style="color: red;">Use for 5 days; review at 3 days and extend to 7 to 10 days if response is poor.</p> <p><u>If CRB65 = 1 -2 and patient at home</u>  <b>Amoxicillin</b> 500mg three times daily for 7 - 10 days <b>and</b>  <b>Clarithromycin</b> 500mg twice daily for 7 - 10 days <u>or</u>  <b>Doxycycline</b> alone 200mg stat, 100mg daily for 7 – 10 days.</p>	<p>Patients with community-acquired pneumonia (CAP) often require hospitalization. CRB-65 is a simple and useful scoring system to predict mortality and assess risk.</p> <p>Each risk factor scores 1:</p> <ul style="list-style-type: none"> <li>• <b>C</b>onfusion (Abbreviated Mental Test &lt;8)</li> <li>• <b>R</b>espiratory rate &gt;30/min.</li> <li>• <b>B</b>P systolic &lt; 90 or diastolic ≤ 60.</li> <li>• <b>A</b>ge &gt;65.</li> </ul> <p>Score 0: patient is suitable for home treatment.  Score 1-2: patient requires hospital assessment or admission.  Score 3-4: patient requires urgent hospital admission.</p>

Infection	Recommended Agents	Notes
<b>Acute exacerbation of Chronic Obstructive Pulmonary Disease (COPD)</b>	<u>First Line</u> <b>Amoxicillin</b> 500mg three times a day for 5 days <b>or</b> <b>Doxycycline</b> 200mg stat followed by 100mg daily for 5 days If the patient is allergic to penicillin and a tetracycline is contraindicated, use <b>Clarithromycin</b> 500mg twice daily for 5 days <u>Second Line</u> If there is a clinical failure or suspected resistance to first line antibiotics use: <b>Co-amoxiclav</b> 625mg tablets three times daily for 5 days.	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-morbid disease, severe COPD, frequent exacerbations or, antibiotics in the last 3 months.
<b>Uncomplicated Urinary Tract Infection (UTI) in men or women (no fever or flank pain)</b>	<u>Where antibiotics are indicated:</u> <u>First Line</u> <b>Nitrofurantoin MR capsules</b> 100mg twice daily (if GFR <u>over</u> 45ml /min) If GFR is 30 - 45 only use nitrofurantoin if there is suspected or proven antibacterial resistance and the benefits are considered to outweigh the risks. <b>or Trimethoprim</b> 200mg twice a day. Treatment length: <b>3 days in women</b> <b>7 days in men.</b>  <u>Second Line</u> Dependent upon sensitivities. Amoxicillin resistance is common; only use if susceptible. Community multi-resistant Extended-spectrum Beta-lactamase <i>E.coli</i> (ESBLs) are increasing; microbiologist advice must be sought.	The symptoms of UTI Include: dysuria, urgency, frequency, polyuria, suprapubic tenderness and haematuria. <u>Mild:</u> In women with 2 or less symptoms - use dipstick <b>and/or</b> presence of cloudy urine to guide treatment. <u>Severe:</u> In women with 3 or more symptoms of UTI - treat In men – consider prostatitis and send pre-treatment mid-stream urine or, if symptoms are mild or non-specific, use a negative dipstick test to exclude UTI. NB a negative dipstick result can help to rule out UTI, but false positive dipsticks are very common and should not automatically lead to antibiotic treatment.
<b>UTI in pregnancy</b>	<u>First Line</u> <b>Nitrofurantoin MR capsules</b> 100mg twice daily (if GFR <u>over</u> 45ml /min) If GFR is 30- 45 only use nitrofurantoin if there is suspected or proven antibacterial resistance and the benefits are considered to outweigh the risks. <b>or Amoxicillin</b> 500mg capsules three times daily for 7 days (if known to be susceptible) <u>Second Line</u> <b>Co-amoxiclav</b> for 7 days. <u>Third line</u> <b>Cefalexin</b> 500mg twice daily for 7 days.	Send MSU for culture and sensitivities and start empirical antibiotics.  Trimethoprim is not recommended in early pregnancy even with folic acid cover.  Short-term use of nitrofurantoin in pregnancy is unlikely to cause problems to the foetus.

<b>Infection</b>	<b>Recommended Agents</b>	<b>Notes</b>
<b>UTI in children</b>	<p><b>Lower UTI</b>  <u>First line for child over 3 months of age with uncomplicated lower UTI:</u>  <b>Trimethoprim</b> or <b>Nitrofurantoin</b> for 3 days  or <b>Amoxicillin</b> (if known to be susceptible) for 3 days  <u>Second line</u>  <b>Cefalexin</b> for 3 days</p> <p><b>Upper UTI</b>  <u>First line</u>  <b>Co-amoxiclav</b> for 7 -10 days.</p>	<p>For children, use a positive dipstick test to determine appropriateness of antibiotic therapy. Where this is impractical, prescribe the antibiotics and arrange for a sample to be taken prior to the first dose being given.</p> <p>Re-assess child if unwell 24-48 hours after initial assessment.</p>
<b>Acute prostatitis</b>	<p><u>First line</u>  <b>Ciprofloxacin</b> 500mg twice a day for 28 days <u>or</u>  <b>Ofloxacin</b> 200mg twice a day for 28 days.</p> <p><u>Second line</u>  <b>Trimethoprim</b> 200mg twice a day for 28 days.</p>	<p>Send mid-stream urine (MSU) sample for culture and start antibiotics.  4 week course may prevent chronic prostatitis.  Quinolones achieve higher prostate levels.</p>
<b>Acute pyelonephritis</b>	<p><b>Ciprofloxacin</b> 500mg twice a day for 7 days <u>or</u>  <b>Co-amoxiclav</b> 500/125mg three times a day for 7 days.</p> <p>If lab report shows sensitive:  <b>Trimethoprim</b> 200mg twice a day for 14 days.</p>	<p>If admission not needed, send MSU for culture and susceptibility and start antibiotics.  If no response within 24 hours, admit.  If ESBL risk and with microbiology advice consider IV antibiotics via out-patients (if pivmecillinam or fosfomycin are considered unsuitable).</p>

#### **References:**

*BNF for Children* (September 2015-2016)

*BNF 70* (September 2015 – March 2016)

Health Protection Agency, *Management of Infection Guidance for Primary Care* (July 2015).

Accessible via the Public Health England website

[www.gov.uk/government/organisations/public-health-england](http://www.gov.uk/government/organisations/public-health-england).

MHRA, *Drug Safety Update* (September 2014): *Nitrofurantoin now contraindicated in most patients with an estimated glomerular filtration rate (eGFR) of less than 45ml/min*

#### **Acknowledgements**

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Stephen Gibson

Head of Prescribing and Medicines Optimisation (Lincolnshire).

Arden GEM Commissioning Support Unit

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# Home care is best

Most common illnesses don't need antibiotics

**This is how long they may last**

Ear infection	4 days
Sore throat	1 week
Common cold	1½ weeks
Sinusitis	2½ weeks
Cough or bronchitis	3 weeks

**Your local pharmacist can recommend medication to help ease symptoms**