

## **Prescribing and Clinical Effectiveness Bulletin**

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This bulletin has been created specifically to convey details of decisions taken at the Prescribing and Clinical Effectiveness Forum (PACEF) to all stakeholders across the Lincolnshire Healthcare Community in both primary and secondary care. Steps will be taken to ensure the widest possible distribution across Lincolnshire PCT and within United Lincolnshire Hospitals Trust and Lincolnshire Partnership Trust. Both paper and electronic copies will be circulated initially with a view to evolving into complete electronic distribution as soon as we are confident that all key stakeholders can access E-mail. There are also plans to make all bulletins, guidelines, formularies, new product assessments, care pathways and other PACEF publications available through the LPCT website.

### **GUIDANCE ON THE USE OF ANTIBACTERIAL DRUGS IN LINCOLNSHIRE PRIMARY CARE: WINTER 2007/8**

Each year we issue an updated version of our *Guidance on the Use of Antibacterial Drugs*. The aim of this guidance is to reduce inappropriate prescribing of antibiotics and to promote their safe, effective and economic use across the county. Emerging patterns of bacterial resistance to antibiotics and the increasing incidence nationally of *Clostridium difficile* make careful restraint in the prescribing of antibiotic agents imperative both in hospitals and in general practice. To this end, United Lincolnshire Hospitals Trust are making significant progress in the reduction of inappropriate antibiotic use; in particular use of broad spectrum antibiotics is declining across the Trust. Within primary care, it is more difficult to track trends due to cyclical changes in antibiotic prescribing volume. This necessitates the monitoring of antibiotic volume on a quarterly basis with the same quarter a year earlier being used as a benchmark. Measured in this way, antibiotic prescribing volume during the March Quarter of 2007 increased significantly across the county (up 7% on the previous year), an increase that was reflected within all eight of our Practice Based Commissioning Clusters. At practice level, the majority (80%) of practices showed growth or no decline on the previous year's figure. Nationally, Lincolnshire remains higher than average, with Lincolnshire PCT recording the highest antibiotic prescribing volume (measured as Items per STAR-PU) within our Strategic Health Authority peer group.

Inappropriate prescribing of antibiotics remains a problem across the NHS and prescribing data suggests that problems remain within Lincolnshire primary care. Practices are asked to review the key points of the guidelines document to ensure that all reasonable steps are being taken to minimize inappropriate use. A brief single-sheet summary is appended to this bulletin. The full text is also being distributed concurrently. Particular concerns have been raised by local Microbiologists around the inappropriate use of broad spectrum antibiotics and the

increased risk of *Clostridium difficile*. Specifically, the over-frequent use of broad-spectrum penicillins (amoxicillin, ampicillin, co-amoxiclav and co-fluampicil), cephalosporins (cefalexin, cefaclor, cefradine, cefuroxime, cefpodoxime, cefixime, but particularly second and third generation agents), quinolones (ciprofloxacin, levofloxacin, moxifloxacin, norfloxacin and ofloxacin) and clindamycin has contributed to the rising incidence of antibiotic associated diarrhoea nationally.

A recent retrospective cohort study published early on line by the *British Medical Journal* included some interesting findings <sup>1</sup>. The majority of antibiotic prescribing in primary care is for respiratory tract infections. Despite evidence based guidelines advising against the routine use of antibiotics in patients with upper respiratory tract infections, sore throat and otitis media, antibiotic prescribing for these conditions remains common in primary care. Specifically the authors calculated Numbers Needed to Treat to prevent one complication for a number of common infections and adverse outcomes. The findings were as follows:

Infection/adverse outcome	Number Needed to Treat to Prevent One Adverse Outcome
Upper Respiratory Tract Infection/ Pneumonia (all ages)	4,407
Otitis media/mastoiditis (all ages)	4,064
Sore throat/ quinsy (all ages)	4,300
Chest infection/pneumonia	
0-4 years	101
5-15 years	96
16-64 years	119
65+	39

The authors conclude from this that GPs should not base their prescribing of antibiotics for sore throat, otitis media and upper respiratory tract infection on fear of serious complications as the NNT figures to prevent one adverse outcome are high for all three of these scenarios. Additionally, there is also a broad consensus that any benefit in terms of reduced duration and severity of illness is so marginal that it does not justify antibiotic use either. Conversely, the NNTs to prevent pneumonia following chest infection are much lower, particularly in the over 65 age group. Most guidelines, including local *Guidance on the Use of Antibacterial Agents*, differentiate between acute bronchitis for which antibiotics are not recommended routinely and pneumonia where antibiotic use is recommended.

### **PACEF Recommendations:**

Local prescribing figures and national comparisons suggest that some work remains to be done to minimise inappropriate antibiotic prescribing across Lincolnshire primary care. Inappropriate use of antibiotics, particularly those designated as broad-spectrum, can create an environment in which *Clostridium difficile* can flourish and patients can be put at risk. In addition to the risk of harm, recently published data in the *BMJ* suggests that the benefits of antibiotic use, particularly in upper respiratory tract infection, are marginal at best. Inappropriate patient expectations can be managed with leaflets and posters; samples are available from PCT Prescribing Advisers. Some practices have found delayed prescriptions to be an effective way of defusing inappropriate patient demands. An updated package of prescribing performance indicators focusing on broad spectrum antibiotic prescribing in general practice and presented as PBC Cluster comparative graphs is now available and will be circulated shortly. Antibiotic prescribing should be confined to conditions where there is a clear clinical benefit. The *Guidance on Antimicrobial Agents* document gives clear guidance on the appropriate use of antibacterial agents and offers evidence based first and second line treatment choices. A brief summary of the full guideline is appended to this bulletin.

### **References**

1. Petersen I et al., 'Protective effect of antibiotics against serious complications of common respiratory tract infections: retrospective cohort study with the UK General Practice Research Database, *BMJ Online First* (18<sup>th</sup> October 2007).

### **NICE UPDATE**

#### **NICE CLINICAL GUIDELINE 54: URINARY TRACT INFECTION IN CHILDREN**

The key recommendations are as follows:

- Infants and children presenting with unexplained fever of 38<sup>0</sup> C or higher should have a urine sample tested after 24 hours at the latest.
- Symptoms and signs suggestive of a urinary tract infection (UTI) include: fever, vomiting, lethargy, irritability, frequency, dysuria, abdominal pain, poor feeding, loin tenderness etc. Infants and children with such symptoms should have a urine sample tested for infection.
- A clean catch urine sample is preferred.
- Risk factors for UTI and serious underlying pathology should be recorded such as: poor urine flow, previous UTI, recurrent fever of uncertain origin, antenatally diagnosed renal abnormality, family history of renal disease or vesoureteric reflux, constipation, dysfunctional voiding, enlarged bladder, abdominal mass, poor growth, high BP, evidence of spinal lesion.
- Infants younger than 3 months should be referred immediately to a paediatric specialist.
- Infants and children 3 months or older with acute pyelonephritis/ upper UTI should be considered for paediatric referral. Antibiotic treatment should be oral and for a period of 7 to 10 days; a cephalosporin or co-amoxiclav are advocated. If oral antibiotics cannot be used, IV cefotaxime or ceftriaxone for 2 to 4 days followed by oral antibiotics for a total duration of 10 days are advocated.
- Infants and children 3 months or older with cystitis/ lower UTI should be treated with antibiotics for 3 days. Trimethoprim, nitrofurantoin, cephalosporin

or amoxicillin may be suitable. Reassessment should be made if the child is still unwell after 24 to 48 hours. In the absence of an alternative diagnosis, a urine sample should be sent for culture to determine specific antibiotic sensitivity.

- Antibiotic prophylaxis is not recommended for infants and children following first-time UTI.
- Infants and children who have had a UTI should be imaged (e.g. ultrasound, micturating cystourethrogram, dimercaptosuccinic acid (DMSA) scan).

**PACEF Recommendation:**

***Guidance on the Use of Antimicrobial Drugs in Lincolnshire* has been reviewed and amended in response to this Clinical Guideline.**

Stephen Gibson  
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**LINCOLNSHIRE PRESCRIBING AND CLINICAL EFFECTIVENESS FORUM**

**GUIDANCE ON THE USE OF ANTIBACTERIAL AGENTS IN LINCOLNSHIRE PRIMARY CARE: WINTER 2007/8**

**Summary Table**

<b><u>Condition</u></b>	<b><u>First Line</u></b>	<b><u>Second Line</u></b>
Pharyngitis/ sore throat/ tonsillitis	The majority of sore throats are viral; most patients will not benefit from antibiotics. Consider delayed or post-dated prescriptions. The Number Needed to Treat to prevent one adverse outcome (quinsy) is 4,300. If an antibiotic is considered necessary: <b>Phenoxymethylpenicillin</b> 500mg every 12 hours to every six hours for 10 days.	If allergic to penicillin: <b>Erythromycin</b> 500mg every 12 hours or 250mg every six hours for 10 days.
Acute Otitis Media (AOM)	Many cases are viral and 80% will resolve in about three days without antibiotics. The Number Needed to Treat to prevent one adverse outcome (mastoiditis) is 4,064. If an antibiotic is considered necessary: <b>Amoxicillin</b> 40mg per kg per day in three divided doses for 5 days; maximum dose 1g three times a day. If allergic to penicillin: <b>Erythromycin</b> Up to 2 years: 125mg every six hours for 5 days 2-8 years: 250mg every six hours for 5 days Other: 250-500mg every six hours for 5 days	<b>Co-amoxiclav</b> (second line if not allergic to penicillins) 1-6 years: 156mg every 8 hours for 5 days 6-12 years: 312mg every 8 hours for 5 days <b>Azithromycin</b> (second line if allergic to penicillins) 15-25kg: 200mg daily for 3 days 26-35kg: 300mg daily for 3 days 36-45kg: 400mg daily for 3 days
Rhinosinusitis (acute or chronic)	Antibiotics should be reserved for severe or persistent symptoms of longer than 10 days duration If an antibiotic is considered necessary: <b>Phenoxymethylpenicillin</b> 250mg every 6 hours or 500mg twice daily for 7 days <u>or</u> <b>Amoxicillin</b> 500mg every 8 hours for 7 days <u>or</u> <b>Oxytetracycline</b> 250mg every six hours for 7 days <u>or</u> <b>Erythromycin</b> 250mg every six hours/500mg every 12 hours for 7 days <u>or</u> <b>Doxycycline</b> 200mg stat followed by 100mg daily for 7 days	Second line agents should only be used where the patient has failed to respond to the two first line agents used sequentially.  <b>Co-amoxiclav</b> 625mg every 8 hours for 7 days or <b>Ciprofloxacin</b> 250mg to 500mg twice daily for 7 days <u>plus</u> <b>metronidazole</b> 400mg twice daily for 7 days

<u>Condition</u>	<u>First Line</u>	<u>Second Line</u>
Acute Bronchitis	The benefits of antibiotics are marginal in otherwise healthy adults. Information leaflets for patients and/or delayed prescriptions can be helpful. The Number Needed to Treat to prevent one adverse outcome (pneumonia) from an upper respiratory tract infection is 4,407. If an antibiotic is considered necessary: <b>Amoxicillin</b> 500mg every 8 hours for 5 days <u>or</u> <b>Oxytetracycline</b> 250 to 500mg every six hours for 5 days <u>or</u> <b>Doxycycline</b> 200mg stat followed by 100mg daily for 5 days.	
Acute exacerbation of COPD	30% of cases are viral. Antibiotics are most valuable in patients with increased dyspnoea associated with increased and purulent sputum. If an antibiotic is considered necessary: <b>Amoxicillin</b> 500mg every 8 hours for 5 days or, <b>Oxytetracycline</b> 250mg every 6 hours for 5 days or <b>Doxycycline</b> 200mg stat followed by 100mg daily for 5 days If the patient is allergic to penicillin or a tetracycline is contra-indicated use <b>Erythromycin</b> 250 to 500mg every 6 hours for 5 days.	If there is a clinical failure to first line antibiotics use <b>Co-amoxiclav</b> 625mg every 8 hours for 5 days
Uncomplicated UTI (i.e. no fever or flank pain)	A urine dipstick should be used to <i>exclude UTI</i> . <b>Trimethoprim</b> 200mg every 12 hours for 3 days or <b>Nitrofurantoin</b> 50 to 100mg every six hours for 3 days. Seven days treatment is preferable in the elderly.	Choice should be dependent on the sensitivities of the organism isolated (e.g. nitrofurantoin, amoxicillin, cefalexin, co-amoxiclav, quinolone, pivmecillinam)
UTI in pregnancy and in men	Send MSU for culture. <b>Nitrofurantoin</b> 50 to 100mg every six hours for 7 days or <b>Trimethoprim</b> 200mg every 12 hours for 7 days The short-term use of <b>trimethoprim</b> or <b>nitrofurantoin</b> in pregnancy is unlikely to cause problems to the foetus.	<b>Cefalexin</b> 500mg every 12 hours for 7 days <u>or</u> <b>Amoxicillin</b> 250mg every 8 hours for 7 days.

**NB This is an abbreviated version of a much more comprehensive and detailed guideline. Further guidance should be sought in the full text.**

Lincolnshire Prescribing and Clinical Effectiveness Forum, November 2007