

# The British Thoracic Society Evidence-based Guidelines for the Management of Community Acquired Pneumonia In Childhood



These recommendations have been derived from an original guideline document produced by the British Thoracic Society (BTS) **NB:** The original guideline is **NOT** the work of the Royal College of Paediatrics and Child Health. This document represents the College's appraisal of the authors' completed guidelines. The College's appraisal should not be considered valid beyond September 2004, and new evidence at any time could invalidate these recommendations. The full guideline may be obtained at the following website: <http://www.brit-thoracic.org.uk/pdf/paediatriccap.pdf>

## KEY POINTS

- The scope includes primary and secondary care management of pneumonia in previously healthy children
- Oral amoxicillin is the first line antibiotic for children not ill enough to require hospital admission for children over 6 months of age
- There appears to be no involvement of parents or children in the guideline development

## SUMMARY OF 'AGREE' FINDINGS

### The methods used to identify the evidence

Searches were run on Medline and the Cochrane Library (Issue 3, 1999) only.

### Which professionals were involved

Three paediatricians, with a special interest in respiratory disease, a paediatrician with a special interest in paediatric infectious diseases, a specialist registrar in paediatrics, a paediatric nurse, a general practitioner and a guidelines methodologist participated on the guideline development team.

### Involvement of parents &/or children

There is no mention of any consumer involvement in the guideline development group.

### Consensus method used

The guideline does contain consensus statements. However, no description of any formal consensus method is given.

## OTHER PUBLICATIONS ON RELATED TOPICS

- Keeley D. Asthma in children. Clinical Evidence. 2002;7:244-261 [www.clinicalevidence.org](http://www.clinicalevidence.org)
- There are many Cochrane Systematic Reviews available on the Cochrane Library relating to respiratory problems and children. A list may be found at [http://www.cochranechildhealth.org/frame\\_review.htm](http://www.cochranechildhealth.org/frame_review.htm)

## LEVELS OF EVIDENCE/DERIVATION OF GRADES OF RECOMMENDATIONS

The levels of evidence used throughout are those derived from the US Agency for Health Care Policy and Research, 1993 (see below). **Please note that those recommendations ORIGINALLY ascribed a Grade C have not been appraised by the College.**

- Grade A:** Requires at least one randomised controlled trial as part of the body of evidence of overall good quality and consistency addressing the specific recommendation.
- Grade B:** Requires availability of well-conducted clinical trials but no randomised clinical trials on the topic of the recommendation.
- Grade C:** Requires evidence from expert committee reports or opinions and/or clinical experience of respected authorities. Indicates absence of directly applicable studies of good quality.

Recommendations	Grade	Appraised by the College
<b>Clinical Features</b>		
<ul style="list-style-type: none"> <li>• Bacterial pneumonia should be considered in children up to 3 years old when there is a fever &gt;38.5°C along with chest recession and respiratory rate &gt;50/minute. For older children, a history of difficulty in breathing is more helpful than clinical signs.</li> </ul>	B	✓
<ul style="list-style-type: none"> <li>• If wheeze is present in a preschool child, then a primary bacterial pneumonia is unlikely.</li> </ul>	B	✓
<b>Radiology</b>		
<ul style="list-style-type: none"> <li>• Chest X-ray should not be performed routinely in children with mild uncomplicated acute lower respiratory tract infection.</li> </ul>	A	✓

Recommendations	Grade	Appraised by the College
<b>Tests</b>		
<ul style="list-style-type: none"> <li>Pulse oximetry should be performed in every child admitted to hospital with pneumonia (<b>Original Statement:</b> Grade A).</li> </ul>	B	✓
<ul style="list-style-type: none"> <li>Acute phase reactants do not distinguish between bacterial and viral infection in children and should not be measured routinely</li> </ul>	A	✓
<b>Microbiological investigations</b>		
<ul style="list-style-type: none"> <li>Blood cultures should be performed in all children suspected of having bacterial pneumonia.</li> </ul>	B	✓
<ul style="list-style-type: none"> <li>Acute serum should be saved and a convalescent sample taken in cases where a microbiological diagnosis was not reached during the acute illness.</li> </ul>	B	✓
<ul style="list-style-type: none"> <li>Nasopharyngeal aspirates from all children under the age of 18 months should be sent for viral antigen detection (e.g. immunofluorescence) +/- viral culture.</li> </ul>	B	✓
<ul style="list-style-type: none"> <li>When significant pleural fluid is present, it should be aspirated for diagnostic purposes. It should be sent for microscopy and culture and a specimen saved for bacterial antigen detection.</li> </ul>	B	✓
<b>General management</b>		
<ul style="list-style-type: none"> <li>Patients whose oxygen saturation is 92% or less while breathing air should be treated with oxygen given by nasal cannulae, head box or facemask, to maintain oxygen saturation greater than 92%. (<b>Original Statement:</b> Grade A) <i>Comment: the optimal oxygen saturation is unknown. The one supporting study investigated the efficacy of different delivery devices.</i></li> </ul>	C	✓
<ul style="list-style-type: none"> <li>There is currently no evidence that chest physiotherapy is beneficial in children with pneumonia (<b>Original Statement:</b> Chest physiotherapy is not beneficial and should not be performed in children with pneumonia).</li> </ul>	B	✓
<b>Antibiotic management</b>		
<ul style="list-style-type: none"> <li>Young children presenting with mild symptoms of lower respiratory tract infection need not be treated with antibiotics.</li> </ul>	B	✓
<ul style="list-style-type: none"> <li>Amoxycillin is first choice for oral antibiotic therapy in children under the age of five, because it is effective against the majority of pathogens which cause CAP in this group, it is well tolerated and cheap. Alternatives are co-amoxiclav, cefaclor, erythromycin, clarithromycin and azithromycin.</li> </ul>	B	✓
<ul style="list-style-type: none"> <li>Amoxycillin should be used as first line treatment at any age if <i>S pneumoniae</i> is thought to be the likely pathogen.</li> </ul>	B	✓
<ul style="list-style-type: none"> <li>Amoxycillin administered orally is effective for children of six months age or older presenting with CAP and who are well enough to be treated without hospital admission (<b>Original Statement:</b> Antibiotics administered orally are safe and effective for children presenting with CAP).</li> </ul>	A	✓

### Clinical audit

The original published guideline document contains key points for clinical audit.

### Overview

This publication presents evidence-based information for the management of community acquired pneumonia in childhood. Guidelines are 'systematically developed statements to assist decisions about appropriate care for specific clinical circumstances' based on systematic reviews of the research literature. Guidelines are not intended to restrict clinical freedom, but practitioners are expected to use the recommendations as a basis for their practice. Local resources and the circumstances and preferences of individual patients will need to be taken into account. Where possible, recommendations are based on, and explicitly linked to, the evidence that supports them. Areas lacking evidence are highlighted and may form a basis for future research.

#### The Role of the Royal College of Paediatrics and Child Health

In order to raise awareness about the existence of the original guideline and to ensure its relevance for children's health, the College (through its Quality of Practice Committee) appraised the original guideline against the 'AGREE' checklist laid out in its 'standards' document. Having established the quality of the guideline's methodology in this way, the College recruited independent reviewers to examine the recommendations presented in the guideline document in the context of the original research papers from which they were derived. These reviewers were chosen as being expert in both the clinical area under examination and in critically appraising research literature. The findings of the reviewers are presented here. Where discrepancies between their findings and the originals exist, both recommendations have been included. The shaded boxes indicate these areas of discrepancy. In addition, where papers have been identified that post-date the publication of the guideline or further support the validity of the recommendations, these have been included.

### Acknowledgements

The peer reviewers who appraised the recommendations: Professor Peter Helms, Dr Peter Weller, Dr Iolo Doull, Dr David Spencer, Dr John Henderson, Richmal Oates-Whitehead

The members of the Quality of Practice Committee oversaw the process of the review: Dr Harry Baumer (Chairman), Dr Paul Buss, Professor Richard Cooke, Mrs Linda Haines, Dr Monica Lakhampaul, Dr Maud Meates, Richmal Oates-Whitehead, Dr Karen Turnock, Dr Kate Verrier Jones, Dr William Whitehouse.