

# Community Acquired Pneumonia (CAP)

**Include:**

Children aged 60 days through 17 years with pneumonia acquired in the community.

**Exclude:**

- Clinically “toxic” or requiring intensive care management
- Persistence of a neonatal cardiac or pulmonary disorder
- Recent hospitalization with exposure to nosocomial flora
- A likely aspiration of a foreign body or stomach contents
- Congenital, acquired, or drug induced immunocompromise
- Chronic conditions such as cystic fibrosis that uniquely alter care options

## General

Key issues in the management of CAP include:

- the ability to make a clinical diagnosis, and
- the increased prevalence of strains of *S. pneumoniae* which are resistant to penicillin.

## Guideline Recommendations

**ASSESSMENT**

1. Perform clinical assessment of respiratory illness and its severity:
  - historical items may help determine etiology (age, season, community prevalence, vaccination status);
  - especially consider tachypnea, fever, O<sub>2</sub> sat, nasal flaring, abnormal breath sounds and increased work of breathing.
2. Be aware that:
  - a small proportion of patients < 5 years of age may present without classical findings, and
  - acutely ill and febrile children may present as pain referred to the abdomen or as fever without a source.
3. Chest X-rays:
  - conduct when clinical findings are ambiguous, complication is suspected, or pneumonia is prolonged and unresponsive to antimicrobial therapy
  - consider in children < 5 years of age with high fever and high WBC of uncertain source
4. Laboratory studies:
  - consider WBC and differential only if the results will help decide whether to use antibiotic therapy
  - conduct:
    - PPD if history of exposure
    - sputum gram stain and culture in more severe disease
    - pleural culture if managing an effusion
  - other routine laboratory studies are not recommended: blood culture, CRP, ESR, other measures of acute phase reactants, cultures or serologic testing for specific pathogens, rapid viral studies
5. When the historical, physical, radiological or laboratory findings are inconsistent, consider additional studies or re-evaluation for alternative or coincidental conditions (e.g. foreign body aspiration or immunodeficiency).

**MANAGEMENT**

6. 1st line therapy:
  - age < 5 years: high dose amoxicillin to cover for *S. pneumoniae*
  - age ≥ 5 years: macrolide to cover for *C. pneumoniae* and *M. pneumoniae*, as well as *S. pneumoniae*.
7. In more severe disease, use a combination of a macrolide and a β-lactam agent to cover for resistant organisms and mixed infections.
8. Avoid therapies directed toward airway clearance (e.g. CPT, postural drainage).
9. Follow up within 24 to 48 hours.
10. Consult with a specialist in:
  - pediatric infectious diseases when considering the need for alternative antibiotics due to allergies, comorbid conditions or antibiotic failure;
  - pediatric pulmonary disease if uncertain about the management of an effusion.
11. Prevention and Education:
  - Assure immunizations are up-to-date, including: Prevnar®, and annual flu (as appropriate).
  - Educate family to preventive behaviors and to risk factors, including handwashing, breastfeeding, and exposure to other children.