



## SWSAHS AMBULATORY CARE GUIDELINE

# GUIDELINES FOR MANAGEMENT OF COMMUNITY-ACQUIRED PNEUMONIA

### Aim:

To provide area-wide guidelines to assist a range of health professionals including general practitioners, hospital medical staff, ambulatory care, hospital and community nurses and pharmacists in management of community-acquired pneumonia (CAP). This guideline is intended for patients requiring more intensive therapy than can be delivered solely through general practice, but not requiring hospital admission. Definitions of community-acquired pneumonia (CAP) vary<sup>1</sup>. For the purpose of this guideline the definition from Therapeutic Guidelines Respiratory<sup>2</sup> has been used:- *pneumonia in individuals who are not in hospital or who have been in hospital less than 48 hours, who are not institutionalised and not significantly immunocompromised*. While this SWSAHS Ambulatory Care Guideline has been developed for adult patients without major co-morbidity or significant immunocompromise, it is recognized that there are other patients who can be suitable for treatment in an ambulatory setting (eg patients with HIV/AIDS). These guidelines are based on the literature but there is a lack of level 1 evidence (randomised controlled trials) in this area. Periodic review of the guidelines will be needed to take account of new research findings. The guidelines are seen as assisting but not replacing clinical decision making and it will be necessary to vary from them in particular clinical situations.

### Patient Assessment:

Risk factors for community acquired pneumonia are age >60, chronic disease (such as COPD, diabetes, renal insufficiency, congestive cardiac failure and liver disease), nursing home resident and possibility of aspiration<sup>3</sup>.

Symptoms suggestive of pneumonia are cough, sputum production, shortness of breath and fever. CAP in older adults is more often associated with a lower incidence of fever, cough, sputum production, and a higher incidence of mental status changes, tachypnea, tachycardia, leucocytosis, septic syndrome and death<sup>4</sup>. Presentation may also vary with the causative organism. The major bacterial causes of CAP are pneumococcus and haemophilus influenzae. Fever, upper respiratory tract symptoms and non-productive

cough with minimal chest signs may be the presenting pattern of viral, mycoplasma, chlamydia and legionella infections.

In adults the presence of one or more of the following features not attributable to another cause indicates more severe illness<sup>2</sup>. Patients with severe illness or where the treating clinician has concerns about the safety of ambulatory management should be considered for admission.

- Respiratory rate > 30 breaths/min
- Hypotension – diastolic < 60 mmHg and/or systolic < 90 mmHg
- Temperature <35 or > 38.5°C
- Chest X-ray evidence of bilateral involvement or increase in size of opacity by 50% or more within 48 hours
- White blood cell count < 4 or > 30 x 10<sup>3</sup> cmm
- PaO<sub>2</sub> < 60 mmHg or SaO<sub>2</sub> less than 90% in room air
- PaCO<sub>2</sub> > 50 mmHg in room air
- Confusion
- Evidence of shock such as poor peripheral perfusion
- Recent deterioration in renal function

A more detailed classification system (Pneumonia Severity Index<sup>5</sup>) is also available.

Investigations include chest X-ray, sputum culture where possible, FBC, urea and electrolytes, liver function tests, arterial blood gases or oxygen saturation measurement, blood culture and first serum sample for serology. To make the diagnosis of CAP an infiltrate or opacity must be present on chest x ray.

If CAP is diagnosed the empirical treatment with antibiotics is necessary while waiting for culture results or if results do not identify the organism (no organism is identified in about 30-50% of cases). As resistance of *Streptococcus pneumoniae* to doxycycline and roxythromycin is common, oral therapy with amoxycillin (to cover *S. pneumoniae*) and one of these agents (to cover other common pathogens) is becoming more widely used<sup>6</sup>.

Guideline: Community-acquired pneumonia:

PROCESS	MANAGEMENT	COMMENTS
<b>Assess patient suitability for Ambulatory management</b>	<p>Contraindications include :</p> <ul style="list-style-type: none"> <li>• Severe pneumonia</li> <li>• Coexisting diseases requiring in hospital treatment</li> </ul>	Suitability for home treatment: - safe accessible home: GP or MO supervision of therapy; patient or carer understands treatment and; home phone
<b>Baseline investigations</b>	Investigation to confirm CAP as above	Other investigations may be indicated if other diseases present such as diabetes.
<b>Parenteral Antibiotics</b>	<p>Intravenous antibiotics may not be necessary if the patient has mild to moderate disease and is tolerating food and fluids.</p> <p>Options for IV antibiotics - Ceftriaxone 1gm daily is the drug of choice in an ambulatory setting related to its daily dosage regime. Usual duration is 3-5 days. Combine with an oral macrolide to cover atypical organisms.</p> <p>Oral fluoroquinolones (eg moxifloxacin) may be an alternative to IV therapy or if the patient is allergic to penicillin and/or cephalosporins</p>	If allergic to cephalosporins and require IV antibiotic then may need admission.
<b>Oral antibiotics</b>	<p>Roxithromycin 300mg orally daily, or Erythromycin 500mg 6-hourly, or Clarithromycin 250mg 12 hourly, or Amoxicillin 500mg 8-hourly, or Doxycycline 200mg 12-hourly (avoid in pregnancy). A combination of amoxicillin with roxithromycin or doxycycline may be justified to provide adequate cover for <i>S. pneumoniae</i>.</p>	Common practice is to commence oral antibiotics while still on parenteral therapy. The choice of oral antibiotic is guided by clinical features and culture results if available.
<b>Other treatment</b>	<p>Maintenance of hydration and nutritional state</p> <p>Analgesia if pleuritic pain present</p> <p>Short acting bronchodilators if wheezy</p> <p>Chest physiotherapy to encourage deep breathing and coughing. Advise smoking cessation for all smokers</p>	
<b>Clinical monitoring</b>	<p>Nursing staff to monitor vital signs, cough, dyspnoea and mental state on a daily basis.</p> <p>Medical review second daily or if the patient's clinical condition is worsening</p>	Arrange review if not improving. Give oxygen and transfer by ambulance to hospital if respiratory distress or shock.
<b>Duration of treatment for</b>	Duration depends on clinical response. Five to ten days for most bacterial causes, 2 weeks for	

<b>PROCESS</b>	<b>MANAGEMENT</b>	<b>COMMENTS</b>
<b>CAP</b>	suspected or proven mycoplasma or chlamydia infections and 3 weeks for legionella.	
<b>Follow-up</b>	Follow-up (e.g. at 4 weeks) chest X-ray is needed to demonstrate radiological resolution. Failure to resolve is an indication for further investigation. Pneumococcal and influenza vaccination are proven effective preventive strategies. Smoking cessation is very important.	

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## References:

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2. Therapeutic Guidelines: Respiratory. Version 2 , 2000. Therapeutic Guidelines Limited.
3. Tsirgiotis E, Ruffin R. Community acquired pneumonia: a perspective for general practice. *Australian Family Physician* 2000; 29; 639-645
4. Whitson B, Campbell GD. Community-acquired pneumonia: new outpatient guidelines based on age, severity of illness. *Geriatrics* 1994; 49:24-36 .
5. Fine MJ, Auble TE, Yealy DM, et al. A prediction rule to identify low-risk patients with community acquired pneumonia. *N Engl J Med* 1997; 336: 243-250.
6. Johnson PR, Irving LB, Turnidge JD. Community-acquired pneumonia. *Med J Aust* 2002; 176: 341-347.

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