Denver Health Guideline for the Management of Community-Acquired Pneumonia (CAP) in Hospitalized, Non-Pregnant Adults

Version 4/12/11

Key points
- Patients with CURB-65 scores of 0 or 1 have a low risk for mortality and should be considered for outpatient therapy
- Yield of sputum culture is low; however, a negative culture is good evidence against MRSA or resistant gram-negative organisms
- Chest CT should be avoided in the initial evaluation of patients with a syndrome consistent with CAP and an infiltrate on CXR
- Avoid antibiotic class switch on discharge
- Short-course therapy is appropriate for patients clinically responding to therapy

Criteria for CAP warranting hospitalization:
- ❑ Clinical syndrome consistent with CAP, AND
- ❑ Infiltrate on CXR*, AND
- ❑ 2 or more CURB-65 criteria, sustained hypoxemia, OR hospitalization warranted for other reason

Diagnostic studies:
- Obtain blood cultures prior to antibiotic therapy
- Sputum culture if concern for *S. aureus* or resistant gram-negative OR ICU admission
- Initial CT scan not recommended unless concern for complication or co-existing illness

Initiate empiric antimicrobial therapy in ED

Non-ICU admission

Recommended empiric therapy:
Ceftriaxone 1gm IV daily *plus*
Azithromycin 500mg IV daily (initial dose IV, transition to oral if tolerating PO medications)

Mild-moderate penicillin allergy:
No change, as above

Severe penicillin allergy (Type 1 hypersensitivity):
Levofloxacin 750mg IV or PO daily**

Clinically responding within 72 hours?

No

For clinical worsening or failure to respond, consider:
- Wrong diagnosis or concomitant noninfectious disease
- Parapneumonic effusion, empyema, or lung abscess
- Resistant microorganism (obtain sputum culture)
- Noscomial superinfection
- Exacerbation of comorbid illness
- Drug fever

Yes

Assess criteria for clinical instability daily:
- ❑ Temperature >/= 38.0C
- ❑ Heart rate >100/min
- ❑ Respiratory rate >24/min
- ❑ Systolic blood pressure <90mmHg
- ❑ Oxygen saturation <90%
- ❑ Not tolerating oral intake
- ❑ Abnormal mental status

>/=2 criteria → Continue inpatient therapy/observation

1 criteria → *Consider* hospital discharge when other medical and social needs met with:
- close outpatient follow-up
- counseling regarding warning signs for return

0 criteria → Discharge when other medical and social needs met (inpatient observation on oral therapy NOT necessary)

ICU → Refer to ED CAP order set

Discharge therapy if infecting pathogen not known:
Azithromycin 500mg PO daily

Severe penicillin allergy and treated with levofloxacin:
Levofloxacin 750mg PO daily

Use narrow-spectrum therapy when infecting pathogen known (eg, amoxicillin for susceptible *S. pneumoniae*)

Total duration of therapy if appropriate clinical response AND no complications: **5 days**

Disclaimer: This is intended only as a guide for evidence-based decision-making; it is not intended to replace clinical judgment. Assess for antibiotic allergies and use alternative agents as appropriate. Suggested antibiotic doses are for normal renal function; adjust for renal impairment when necessary.

*CXR may be negative early in the course of pneumonia; consider a repeat CXR in 24 hours if suspicion for CAP remains high

**Avoid use of fluoroquinolones if risk factors for *M. tuberculosis* present (born outside United States), as may lead to delay in TB diagnosis

References: *Clin Infect Dis* 2007; 44:S27-72; *BMJ* 2006; 332:1355; *Arch Int Med* 2002; 162:1278