New York-Presbyterian Hospital
Guidelines for the Empiric Management of Adult Patients with Community-Acquired Pneumonia (CAP) and IV to PO Conversion

Pneumonia diagnosed by radiograph and symptoms

Initiate diagnostic work-up

Initiate appropriate empiric antibiotic therapy (see drug therapy algorithm)

Pneumonia PORT Severity Index Score

Risk Class I / II
Pneumonia Severity Index ≥ 70 points

Consider treatment as outpatient

Risk Class III
Pneumonia Severity Index 71-90 points

Evaluate for discharge based on the following criteria:
Stable comorbid illnesses and significant improvement in pneumonia
Should also fulfill the following criteria (unless baseline status):
- Temperature < 37.8°C (≥ 16 hours and in the absence of antipyretics)
- Pulse ≤ 100 beats/min
- Respiratory rate ≤ 24 breaths/min
- SBP ≥ 90 mmHg
- O2 saturation ≥ 90%
- Ability to maintain oral intake

For all appropriate patients, prior to discharge, consider:
- Influenza vaccination
- Pneumococcal vaccination
- Smoking cessation

Discharge from hospital with oral antibiotic if necessary to complete a course of therapy

Typical diagnostic work-up
- Vital signs
- Chest x-ray (PA and lateral)
- Complete blood count (CBC) with differential
- Basic metabolic panel
- Hepatic profile
- Pulse oximetry and/or ABG

Additional diagnostics to consider:
- Legionella urinary antigen
- S. pneumoniae urinary antigen (at CUMC only)
- HIV test
- EKG
- Immunocompromised (including HIV):
  - Consider other causes of pneumonia (e.g. fungal, viral, TB, PCP) and other diagnostics
- Influenza season:
  - Nasopharyngeal swab for influenza and RSV

Special circumstances:
- e.g. SARS, bioterrorism

Severe pneumonia
Major criteria (need one):
- Need for mechanical ventilation
- Septic shock with need for pressors

Minor criteria (need at least three):
- Respiratory rate ≥ 30 breaths/min
- Multilobar disease
- PaO2/FiO2 ratio ≤ 250
- Confusion/disorientation
- Uremia (BUN ≥ 20 mg/dL)
- Leukopenia (WBC <4000 cells/mm³)
- Thrombocytopenia (platelets <100,000 cells/mm³)
- Hypothermia (temp <36°C)
- Hypotension requiring aggressive fluid resuscitation

Criteria for IV to PO conversion
- Clinical improvement in pulmonary signs and symptoms
- Afebrile or consistent improvement in fever over a 24-hour period
- WBC count normalizing
- Infection being treated does not require IV therapy (e.g. endocarditis, meningitis)
- GI absorption likely normal (absence of vomiting or abnormal GI anatomy)
- Ability to receive oral dosage form either orally or via tube (comitant oral or via tube administration of other meds)
Empiric Antibiotic Therapy Options for CAP and Recommendations for PO Conversion

- Modification of antibiotic therapy may be necessary in patients with antibiotics in the past month, history of resistant pathogens (especially PCN-R S. pneumoniae), recently hospitalized, or severely immunocompromised

- In immunocompromised patients (HIV+, solid organ transplant recipients, etc), consider other causes of pneumonia (e.g. viral, PCP, TB, etc.)

- All doses provided are for ~70 kg adults with normal renal and hepatic function

NON-ICU ADMISSION

Ceftriaxone 1 g IV daily
Azithromycin 500 mg PO x 1, then 250 mg PO daily x 4 more days

PO conversion

Cefuroxime (Ceftin) 500 mg PO Q12h (7 days total)

and/or

Azithromycin 250 mg PO daily (5 days total)

or

Levofloxacin 500 mg PO daily (7 days total)

Beta-lactam (penicillin) allergy:

Levofloxacin 500 mg IV daily

PO conversion

Levofloxacin 500 mg PO daily (7 days total)

ICU ADMISSION

- Initial antibiotic therapy should be individualized where appropriate based on recent hospitalization, prior antibiotic history, immunocompromised state, recent positive cultures, etc.

- Antibiotic therapy should be guided by culture and susceptibility results when available

- Once admitted to a general patient care area, patients initially admitted to the ICU may be switched to oral therapy (as above) and treated for 7-10 days total. In these patients, oral azithromycin should be continued at a dose of 500 mg daily for a total of 7-10 days.

Suspect Pseudomonas aeruginosa:

Ceftriaxone 1 g IV daily
Azithromycin 500 mg IV daily

Piperacillin/tazobactam 4.5 g IV Q6h
Azithromycin 500 mg IV daily
Tobramycin IV

or

Piperacillin/tazobactam 4.5 g IV Q6h
Levofloxacin 750 mg IV Q12h

Beta-lactam (penicillin) allergy:

Levofloxacin 500 mg IV daily

Suspect Pseudomonas aeruginosa:

Levofloxacin 750 mg IV daily
Tobramycin IV
Aztreonam 2 g IV Q8h

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