



VASP Community-Acquired Pneumonia (CAP) – Inpatient Management

Your name or organization

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VASP Community-Acquired Pneumonia – Inpatient Management

[Clinical Signs/Symptoms of PNA + Radiographic Evidence](#)

If viral infection suspected
[Indications/symptoms](#)

- If suspicion of viral etiology and no pending or resulted test for flu/covid/rsv, please send first.
 - If suspicion for viral etiology and flu/covid/rsv test is negative, order RPP.
- [Combined Respiratory Molecular Testing Panel](#)

Severe CAP/ICU Admission for PNA?
[\(List of criteria\)](#)

Do NOT Order Blood or sputum cultures

(urine S. pneumoniae no longer available)
Do NOT order Urine Legionella pneumophila antigen test

MDR Risk Factors

Antibiotics

Preferred empiric regimen
Ampicillin-sulbactam OR Ceftriaxone

High risk penicillin AND cephalosporin allergy
Levofloxacin

MRSA, P. aeruginosa and atypical coverage
NOT recommended

Antibiotics

Clinically Improving after 24 Hours:
Consider transition to oral antibiotics

Non-Severe, Non-MDR:
First line: Amoxicillin 1g TID
Second line: Amoxicillin-clavulanate 875-125mg BID

Severe PCN Allergy:
Cefuroxime 500mg BID

For more complicated cases, refer to the full VASP CAP Guideline

Labs

If starting MRSA or Pseudomonas coverage
Adult Blood Cultures
Sputum Culture

If MRSA coverage started and if prior decolonization completed > 7 days prior
PCR Staph Nasal Colonization

Antibiotics

Preferred empiric regimen:
Ceftriaxone

High risk penicillin AND cephalosporin allergy:
Levofloxacin

For MRSA:
ADD linezolid OR vancomycin

For P. aeruginosa:
Change from ceftriaxone to ceftazidime* OR piperacillin/tazobactam

* Cefepime is the preferred anti-pseudomonal β-lactam for patients with penicillin allergies, including anaphylaxis.

STOP MRSA Coverage if MRSA nasal is negative

DE-ESCALATE P. aeruginosa coverage if cultures are negative

Clinical Signs/Symptoms:
Cough, purulent sputum, shortness of breath, pleuritic chest pain, dyspnea, hypoxia ± supplemental O2 requirement. PLUS Radiographic (CXR or CT) infiltrates not explained by other conditions (e.g. pulmonary edema, atelectasis).
Non-specific findings: leukocytosis, fever, elevated ESR or CRP.

Pneumonia is a clinical syndrome. Nonspecific chest x-ray findings without clinical signs of pneumonia usually do not require antimicrobials.
Please consider: aspiration can cause pneumonitis which does not require antibiotics.

Consider viral etiology if pneumonia symptoms and has the following:
1. Has had known contact with patient with viral pathology
2. CXR with bilateral or multifocal patchy consolidations

Major Criteria (1 criterion)
- Septic shock with use of vasopressors
- Respiratory failure requiring mechanical ventilation

Minor Criteria (3 criterion)
- Respiratory rate 30 breaths/min
- PaO2/FiO2 ratio 250
- Multilobar infiltrates
- Confusion/disorientation
- Uremia (BUN 20 mg/dL)
- Leukopenia (WBC 4,000 cells/μl)
- Thrombocytopenia (platelet count 100,000)
- Hypothermia (temperature 36c)
- Hypotension requiring aggressive fluid resuscitation

Consider testing if:

- Recent travel in large groups (ex: conference with shared lodgings, cruise ship, etc.)
- Known outbreak exposure
- No improvement in 24-48 hours after starting usual antibiotics (also start abx coverage while sending)

[UR Legionella Pneumophila Ag](#)

MDR Risk Factors

Antibiotics

Preferred empiric regimen:
Ampicillin-sulbactam OR Ceftriaxone
PLUS
Azithromycin OR Doxycycline

High risk penicillin AND cephalosporin allergy:
Levofloxacin

MRSA and P. aeruginosa coverage:
NOT recommended

Antibiotics

Preferred empiric regimen for MRSA:
Ceftriaxone
PLUS
Azithromycin
PLUS
Vancomycin OR Linezolid

Preferred empiric regimen for P. aeruginosa:
cefepime* OR piperacillin/tazobactam
PLUS
Azithromycin

Preferred empiric regimen for MRSA & P. aeruginosa:
Cefepime OR piperacillin/tazobactam
PLUS
Vancomycin OR Linezolid
PLUS
Azithromycin

* Cefepime is the preferred anti-pseudomonal β-lactam for patients with penicillin allergies, including anaphylaxis.

STOP MRSA Coverage if MRSA nasal is negative

DE-ESCALATE P. aeruginosa coverage if cultures are negative

MDR Risk:
MRSA and P. aeruginosa are rare causes of community-acquired pneumonia (<5% of cases) and are unlikely in non-severe infections. Presence of any single finding below would place patient at an increased risk.

MRSA

- Respiratory tract culture or nasal PCR positive in previous 12 months.
- Cavitary or necrotizing pneumonia
- Post-influenza pneumonia

P. aeruginosa

- Respiratory tract culture positive in previous 12 months.
- Bronchiectasis or structural lung disease

Both MRSA AND P. aeruginosa

- Hospitalization AND IV antibiotics in previous 90 days
- Immunocompromising conditions

- Solid organ transplant in previous 12 months
- Solid organ transplant AND treated for rejection in previous 6 months
- Hematopoietic stem cell transplant in previous 12 months
- Chronic GVHD
- HIV with CD4 <200
- Neutropenia with ANC <1000
- Autoimmune disorders on biologic agents (e.g. TNF inhibitors, rituximab, etc.)
- Long-term corticosteroids (prednisone equivalent 20mg/day for at least 2 weeks)