Inclusion Criteria:
- Suspected community-acquired pneumonia (CAP) in patients ≤3 months of age
- Suspected severe CAP

Exclusion Criteria:
- Age <3 months
- Immunodeficiency or immunosuppressive medication
- Known or suspected aspiration
- Known lung disease (e.g., cystic fibrosis, chronic lung disease, structural anomalies) excluding asthma
- Preexisting tracheostomy or mechanical ventilation
- Symptomatic and/or unrepaird cyanotic congenital, heart disease or cardiomyopathy

Common Pneumonia Phenotypes:
- Typical CAP
  - Rapid onset, high fevers, focal findings
- Atypical CAP
  - More common in age >5y; low-grade fever, cough, sore throat; insidious onset, mild/protracted course
- Influenza Pneumonia
  - Rapid onset; chills or rigors, headache, malaise, diffuse myalgia, nonproductive cough
- Viral Pneumonia (except influenza)
  - Most common cause of CAP; gradual onset, preceding URI symptoms; diffuse findings.
- Complicated Pneumonia
  - Moderate/large effusions, multilobar disease, abscesses or cavities, necrotizing pneumonia, empyema, pneumothorax, bronchopleural-fistula, or disseminated bacterial infection.
- Severe allergy definition:
  - Urticaria
  - Angioedema
  - Anaphylaxis

Antimicrobial Reference Guide

Pneumonia (CAP) Algorithm
Initial Evaluation & Management

Does patient meet CAP Clinical Care Guideline criteria?

- END
- YES
- NO

Mild Illness
- Evaluation
  - Recommend Clinical assessment
  - Do Not Routinely Recommend CXR
  - Do Not Recommend CBC, CRP, ESR, respiratory panel, and blood culture

Moderate Illness
- Staged Evaluation
  - Recommend Clinical assessment AND 2-view chest Xray
  - Failed PD therapy as OP?
    - YES
    - Consider blood culture
  - Not fully immunized?
    - YES
    - Send blood culture
  - Under 6 months?
    - YES
    - Consider respiratory panel
  - Central line?
    - YES
  - Complicated pneumonia?
    - YES
  - Viral season (Dec-Apr) and/or URI symptoms?
    - YES
    - Consider respiratory panel

Severe Illness
- Complete/Full Evaluation
  - Recommend CXR
  - CBC with differential
  - Respiratory panel
  - At intubation (if required)
  - Gram stain and culture
  - Do not recommend Routine ESR and CRP

Outpatient Management (Guided by Clinical Impression & Follow Up)
- First line therapy for mild CAP: Amoxicillin X 7 days
- β-lactam allergy: Levofoxacin OR Clindamycin
- Review H&P and consider modification of therapy:
  - Mycoplasma pneumoniae: Substitute Azithromycin if age > 5 years and typical CAP not suspected.
  - Influenza: Oseltamivir if risk factors for severe influenza disease
  - Viral (including influenza): Hold antibiotics if bacterial co-infection or super-infection not suspected
- Antimicrobial Reference Guide

Targeted Management (Guided by Diagnostic & Clinical Impression)
- 1st line therapy for moderate CAP: Ampicillin
  - Substitute Ceftriaxone for ampicillin if:
    - Non-severe penicillin allergy (particularly if history of tolerating cephaloporins).
    - Delayed or incomplete pneumococcal or Hib immunization. (<6 months and/or <3 doses)
    - Treatment failure with high dose Amoxicillin (80-90mg/kg/day) ≥ 48 hours.
- Severe β-lactam allergy: Levofoxacin
- Review H&P, labs, and CXR, and consider modification of therapy:
  - Mycoplasma pneumoniae: Substitute Azithromycin if age > 5 years and typical CAP not suspected.
  - Influenza: Add or substitute Oseltamivir
  - Viral (including influenza): Hold antibiotics if bacterial co-infection or super-infection not suspected
  - Complicated pneumonia or suspicion of S. aureus infection: Substitute Ceftriaxone for ampicillin AND consider adding Clindamycin
- Recommend ID Consult for complicated pneumonia
- Antimicrobial Reference Guide

Empiric Management (Driven by Severity of Illness)
- 1st line therapy for severe CAP: Ceftriaxone
- Complicated pneumonia or suspicion of S. aureus infection: Consider Vancomycin
- For any β-lactam allergy: Substitute Levofoxacin for Ceftriaxone.
- Review H&P, labs, and CXR, and consider modification of therapy:
  - Mycoplasma pneumoniae:
    - Add Azithromycin
    - Influenza: Add Oseltamivir
- Recommend ID Consult for complicated pneumonia
- Antimicrobial Reference Guide

Discharge (with Close Follow Up)
- Admit to Floor or MOU
- Admit to PICU

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This clinical care guideline is meant as a guide for the healthcare provider, does not establish a standard of care in legal matters, and is not a substitute for medical judgment which should be applied based upon the individual circumstances and clinical condition of the patient.
Evidence


