

Alaska Antimicrobial Stewardship Collaborative (A2SC)

Pediatric (>3mo) Inpatient Community Acquired Pneumonia (CAP) Treatment Guideline

Initial Testing/Imaging	Inpatient Admission Criteria	
<ul style="list-style-type: none"> • Vital Signs: VS including BP and Pulse Oximetry • Labs: <ul style="list-style-type: none"> – Blood work: CBC with differential, CRP, blood culture – Viral Testing: Influenza PCR during influenza season and COVID – Sputum gram stain and culture: if intubating, collect at time of initial ET tube placement; consider testing in older children who can produce sputum sample – Urinary antigen detection testing is not recommended in children; false-positive tests are common. • Radiography: <ul style="list-style-type: none"> – AP and lateral CXR 	Pediatric Floor	PICU
	<ul style="list-style-type: none"> • Respiratory distress • SpO2 <90% on room air • Unable to tolerate PO • Suspected or documented CAP caused by pathogen with increased virulence (ex. CA-MRSA) • Concerns about observation at home, inability to be comply with therapy, inability to be followed up 	<ul style="list-style-type: none"> • Respiratory support: Intubated or requiring non-invasive positive pressure ventilation • Concern for respiratory failure • Concern for sepsis • FiO2 needs HNFC >50% to keep saturation ≥92% • Altered mental status

Treatment Selection

Suspected Bacterial Pneumonia

Most Common Pathogens: *Streptococcus pneumoniae*, *Haemophilus influenzae*

Demographics	Parenteral Treatment	Oral Step-Down
Previously healthy AND Fully immunized	<p><u>Preferred:</u> Ampicillin 50mg/kg IV q6hr (max 12g/day)</p> <p><u>Alternatives:</u> <i>Non-Type 1 β-Lactam Allergy:</i> Ceftriaxone 50mg/kg IV q24hr (max 2g/day) <i>Type 1 β-Lactam Allergy:</i> Levofloxacin <5 years: 10mg/kg IV BID (max dose 750mg/day) >5 years: 10mg/kg IV q24hr (max dose 750mg/day)</p>	<p>Antibiotic choice:</p> <ul style="list-style-type: none"> • If culture positive: based on cultures and susceptibilities. • If culture negative: refer to Ambulatory CAP Treatment Guidelines
Not appropriately immunized with PCV13 + Hib OR Suspicion for <i>H. influenzae</i> OR Severe disease and/or Complicated Pneumonia	<p><u>Preferred:</u> Ceftriaxone 50mg/kg IV q24hr (max 2g/day)</p> <p><u>Alternatives:</u> <i>Type 1 β-Lactam Allergy:</i> Levofloxacin <5 years: 10mg/kg IV/PO BID (max dose 750mg/day) >5 years: 10mg/kg IV/PO q24hr (max dose 750mg/day)</p>	<p>Antibiotic Duration:</p> <ul style="list-style-type: none"> • Uncomplicated pneumonia: complete a 10 day course • Complicated pneumonia: dependent on clinical response, in general 2-4 week course
Suspicion for <i>S. aureus</i>	<p><u>In addition</u> to one of the above antibiotics, <u>add:</u> Clindamycin 10mg/kg IV q6hr (max 900mg/dose) For PICU or Severe Infection: Vancomycin 15mg/kg IV q6hr (max 4g/day)</p>	<p>Antibiotic choice: Based on cultures and susceptibilities Antibiotic duration: May require longer treatment</p>

Suspected Atypical Pneumonia

Most Common Pathogens: *Mycoplasma pneumoniae*, *Chlamydia pneumoniae*

Demographics	Preferred Treatment	Oral Step-Down
In ≥5yo empirically add macrolide if atypical CAP cannot be ruled out	Azithromycin 10mg/kg IV daily x 1-2 days then transition to oral step down if possible (max 500mg/dose)	Azithromycin 10mg/kg PO daily to complete a 3 day course (max 500mg/dose)

Suspected Viral Pneumonia

Most Common Pathogens: Influenza A & B, Adenovirus, Respiratory Syncytial Virus, Parainfluenza

Most common in <5yo	No antimicrobial therapy is necessary. If influenza positive, see influenza guidelines for treatment algorithm.
---------------------	---

CONSIDERATIONS

- Children should show clinical signs of improvement within 48-72 hours allowing de-escalation of therapy based on available culture results and consideration of transition to oral step-down therapy
- If no improvement or worsening pursue further diagnostic work up as indicated, consider broadening antibiotics and formal infectious disease consultation

REFERENCES: Bradley IDSA CAP Infants & Children 2011; AAP endorsed; Ficar B, et al. Azithromycin: 3-Day Versus 5-Day Course in the Treatment of Respiratory Tract Infections in Children. J Chemother. 1997;9(1):38-43.

Kogan R, et al. Comparative Randomized Trial of Azithromycin versus Erythromycin and Amoxicillin for Treatment of Community-acquired Pneumonia in Children. Pediatr Pulmonol. 2003; 35(2):91-8. Approved A2SC Advisory April 2021