Clinical Guideline

Community Acquired Pneumonia (CAP)

Pediatric Emergency & Hospital Medicine

Inclusion criteria:
- Suspected CAP in patients > 90 days old (up to 18 years)

Exclusion Criteria:
- History of immunodeficiency (e.g. HIV, SCID, etc)
- Known lung disease (other than asthma, e.g. BPD, CF)
- Neuromuscular disease
- Prior or current trach/ventilator dependence
- Congenital heart disease
- Sickle cell disease
- Hospital acquired or institutional acquired pneumonia (e.g. any antibiotic in the last 90 days or a resident of a long-term care facility)
- Complicated pneumonia (with pleural effusion, empyema, or lung abscess)

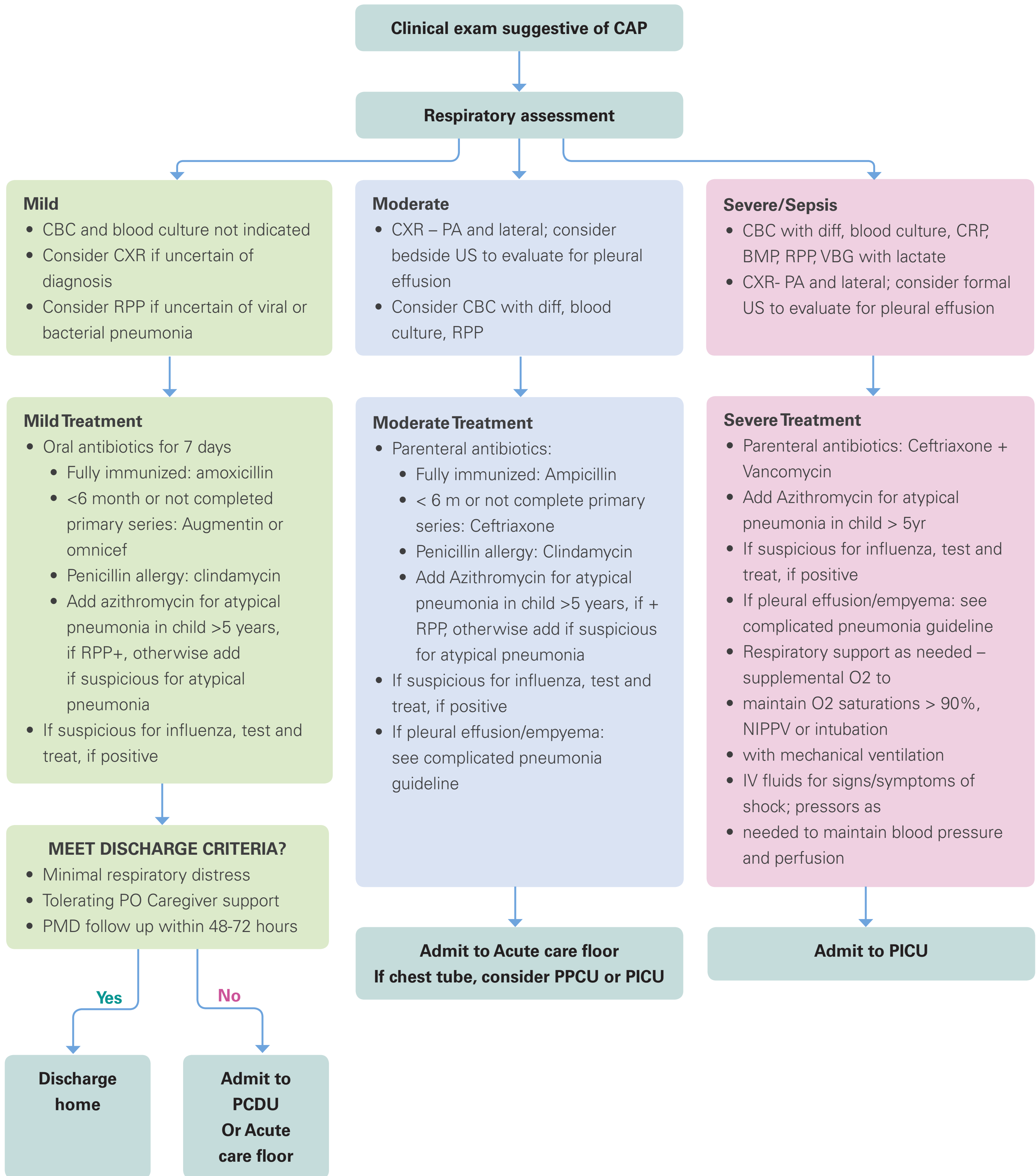
Definition of Under-Immunized:
- < 6 months of age or did not complete first series

Definition of Complicated Pneumonia:
- CAP with pleural effusion or empyema

Categorizing Severity of Illness	MILD (meets ALL criteria below)	MODERATE (meets ANY criteria below)	SEVERE (meets ANY criteria below)
Oxygenation	Oxygen Saturation >90% on room air	Oxygen saturation persistently <90% on room air	Oxygen saturation <90% despite supplemental oxygen on 50% FiO2; apnea, bradypnea, or hypercarbia
Work of Breathing	None or minimal (i.e. no grunting, flaring, retractions, apnea)	Increased/moderate respiratory distress (i.e. grunting, retractions, nasal flaring)	Need for mechanical ventilation or non-invasive positive pressure ventilation; severe respiratory distress or concern for impending respiratory failure
Hydration	Able to tolerate fluids and medication by mouth	Signs of dehydration; persistent vomiting; inability to take oral medications	Systemic signs of inadequate perfusion, including fluid refractory shock, hypotension, sustained tachycardia, need for pharmacologic support of blood pressure or perfusion
Appearance	Not significantly ill or toxic appearing	Ill-appearing	Toxic or septic appearing and/or altered mental status

From the AAP Section on Emergency Medicine Committee on Quality Transformation Clinical Algorithm for Emergency Management Evaluation and Management of Pediatric Community Acquired Pneumonia

ED Phase



CHILDREN'S HOSPITAL OF RICHMOND AT VCU

For questions concerning this guideline, contact:
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Next expected update: August 2021

Inpatient Phase continued

Inpatient Admission Criteria:

- Hypoxemia (SpO2 <90%)
- Presence of increased WOB, respiratory distress, or tachypnea
- Lethargy
- Concern for compliance and adequate follow-up
- Signs/symptoms of severe dehydration, persistent vomiting, inability to take oral medications
- All infants 3-6 months with suspected bacterial CAP
- Signs/symptoms of shock

CDU Admission Criteria:

- Poor PO intake/mild dehydration
- Mild respiratory distress for short
- observation (SpO2 ≥ 90%)

Continue Antibiotics

FULLY IMMUNIZED: Ampicillin

- If with PCN allergy consider Ceftriaxone
- if with severe PCN allergy consider IV Clindamycin or Levofloxacin.
- May also consider Vancomycin.
- if start Levofloxacin, obtain EKG prior and consult Pediatric Infectious Disease

UNDER IMMUNIZED: Ceftriaxone

- If with severe PCN allergy or Cephalosporin allergy consider IV Clindamycin or Levofloxacin. May also consider Vancomycin.
- if start Levofloxacin, obtain EKG prior and consult Pediatric Infectious Disease

If with complicated pneumonia:

- Consult Pediatric Surgery/PICU and Pediatric Infectious Disease and see complicated pneumonia guideline

- Consider RPP vs. Flu/RSV upon admission if not previously done
- Do obtain RPP vs. Flu/RSV if suspect mycoplasma or flu AND:
- Start/continue Azithromycin if suspect mycoplasma
- Start/continue Oseltamivir if suspect influenza

- O2 as needed for O2 saturations < 90%
- IVF as needed, encourage PO
- If severe pneumonia (see chart) obtain CBC/Diff, blood culture, CXR if not yet obtained (consider in moderate pneumonia)

Clinical Improvement

DC criteria:

- Afebrile for >12 hours
- Oxygen saturation ≥90% on room air for at least 12h
- No or minimal increased WOB/ respiratory distress, and well-appearing
- Tolerating PO intake and PO medications (transition to at least one PO dose of antibiotic prior to DC)
- Rx filled/sent
- Follow-up in 48-72 hours established
- No social concerns

Clinical Worsening or Not Improving as Expected

- Repeat CXR
- Consider repeat CRP, blood culture, +/- blood gas
- Consider Chest US
- Broaden antibiotic coverage to Vancomycin and Ceftriaxone
- Fluid resuscitation as needed
- Consult Pediatric Infectious Disease

*** If in the CDU, refer for admission based on admission criteria ***

Consider transfer to PICU for:

- Concern for AMS
- Impending respiratory failure
- Worsening sepsis
- Maximum respiratory support with persistent hypoxia (FiO2 > 50%)
- Need for positive pressure ventilation/ higher levels of support

If with complicated pneumonia:

- Consult Pediatric Surgery/PICU and Pediatric Infectious Disease and see complicated pneumonia guideline

Pneumonia Guideline
Executive Summary

Children's Hospital of Richmond at VCU Pneumonia Workgroup

Pediatric Emergency Medicine Owner: Rashida Woods, MD
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Pediatric Infectious Disease: Jeffrey Donowitz, MD
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Approved (August 2018)

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References

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Pneumonia Guideline
Executive Summary

Citation

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Retrieval website: **http://www.chrichmond.org/clinical-pathway-pneumonia**

Example:
Children's Hospital of Richmond at VCU, Woods R, Tseng A, Donowitz J, Hanson C. Pneumonia Guideline. Available from: http://www.chrichmond.org/clinicalguideline-pneumonia