Yukon-Kuskokwim HEALTH CORPORATION

Clinical Guideline

Pneumonia (3 months – 18 years)

REMEMBER:
- If patient is <90 days and febrile, please see **fever guidelines**.
- Pneumonia is a clinical diagnosis and does not require X-ray findings.

Hypoxia

<90% while awake
<88% while asleep
Sustained for >10 minutes

Pulse-Oximetry Monitoring

- Pulse-ox may be ordered Q4h (not continuously) if age >6 months and patient is stable.
- Being on oxygen does not mandate continuous pulse-oximetry if patient is stable.

Cough + fever

Institute SUPPORTIVE MEASURES
Then reassess respiratory distress

Moderate to severe respiratory distress
Sustained tachypnea, increased work of breathing, and/or hypoxia

- CXR (PA & lateral)
- CBC, CRP, and blood culture
- COVID/flu/RSV panel
- Place PPD

Mild or no respiratory distress
Intermittent tachypnea, increased work of breathing, and/or hypoxia

Consider CXR if <5 years old given high rates of pneumonia in Alaska Native population.

SUPPORTIVE MEASURES

- Control fever, as it can be an independent cause of respiratory distress and tachycardia.
- Nasal suction with nasal bulb syringe and olive tip plus saline.
- Hydration by IV or enteral (including NG and G-tube).
- Gentle P&PD/CPT if helpful.
- Saline neb (either 0.9% or hypertonic 3%).
- Consider albuterol trial, especially in Alaska Native patients as they have high rates of RAD.

Village Management

Any child <5 years with suspected pneumonia should be evaluated in Bethel or an SRC.

Bacterial pneumonia suspected → Begin antibiotics per Treatment box.

Bacterial pneumonia NOT suspected → Consider other diagnoses: viral pneumonia, RAD, bronchiolitis, TB, acidosis, toxins, etc.

Bacterial pneumonia NOT suspected → Consider other diagnoses: viral pneumonia, RAD, bronchiolitis, TB, acidosis, toxins, etc.

Bacterial pneumonia suspected → Prescribe antibiotics for 7 days per Treatment box.

- Place PPD if older than 6 months and no PPD in past 6 months.
- Discharge home with follow-up within 48-72 hours.
- No routine follow-up CXR unless recurrent infiltrate in same lobe; in that case, repeat CXR in 4-6 weeks.

- If <1 year old: requires >2 L supplemental oxygen to prevent hypoxia or improve WOB?
- If ≥1 year old: requires >3 L supplemental oxygen to prevent hypoxia or improve WOB?
- Requires neb treatments more frequently than Q2-3h for >8 hours?
- Sustained tachycardia, tachypnea, or respiratory distress despite treatment?
- Significant pleural effusion?

If concern for parapneumonic effusion or empyema, see **ANMC guideline**.

Yes → Transfer to Anchorage

No → Admit to YKHC Peds Inpatient Unit, using PED Admission/ Respiratory Infection PowerPlan.
- Place PPD if older than 6 months and no PPD in past 6 months.

After 48-72 hours

Improvement?
- No → Consider other diagnoses: viral pneumonia, RAD, bronchiolitis, TB, acidosis, toxins, etc.
- Yes → Patient improving with increased appetite and activity, less WOB, and decreasing fever curve?
  - No hypoxia on room air?
  - Tolerating home therapy with competent caregivers?
  - Immunizations UTD?
  - Negative PPD?

No →
- Consult pediatrics.
- Consider repeating CXR and labs.
- Consider IVF.

Yes →
- Change to oral antibiotics for total of 7 days of treatment.
- Discharge home with follow-up within 48-72 hours.
- No routine follow-up CXR unless recurrent infiltrate in same lobe; in that case, repeat CXR in 4-6 weeks.

Treatment

NOTE: If known viral infection, viral pneumonia is likely; antibiotics not indicated. If influenza positive, see **Influenza guideline** *for oseltamivir criteria.*

Outpatient
1st line: amoxicillin 45 mg/kg/dose PO BID x7 days
2nd line: Augmentin 45 mg/kg/dose PO BID x7 days
3rd line: cefdinir 7 mg/kg/dose PO BID x7 days

Inpatient
1st line: ampicillin 50 mg/kg/dose IV Q6h
2nd line: Unasyn 50 mg/kg/dose IV Q6h
3rd line: ceftriaxone 75 mg/kg/dose IV Q24h

If not fully immunized, suspicion for *H influenzae*, or complicated pneumonia (pleural effusion, multilobar involvement, concern for bacteremia, etc.): Start with ceftriaxone. When improving, complete 10 day course with narrower spectrum oral antibiotic, as appropriate.

For H influenzae type A: At least one dose of ceftriaxone or four days of rifampin is necessary for decolonization. Remainder of course may be completed with a penicillin, if sensitive.

For PCN allergy: If reaction was non-anaphylactic, may trial amoxicillin with monitoring. If reaction was anaphylaxis, treat with a cephalosporin. If any questions, please obtain a pediatrics consult.

Azithromycin: Do not prescribe azithromycin unless there is evidence of an atypical pathogen and child is >5 years. Must be prescribed in addition to primary treatment above.

RUL infiltrate: consider starting with Augmentin/Unasyn to cover for oral anaerobes. Consider thickener.

For Chronic Cough: See **Bronchiectasis/Chronic Cough guideline**.

NOTE: There is limited evidence to support the use of procalcitonin to guide antimicrobial treatment in pediatric pneumonia, so it should not be used to guide management decisions at this time.

This guideline is designed for the general use of most patients but may need to be adapted to meet the special needs of a specific patient as determined by the medical practitioner.
Approved by MSEC 12/7/21.
Click **here** to see the supplemental resources for this guideline.
If comments about this guideline, please contact Jennifer_Hampton@ykhc.org.