TABLE . Recommended Evidence-based Management for Childhood Community-acquired Pneumonia Under 5-years of Age from Different Guidelines

Origin	Diagnosis		Severity assessment for hospitalization	Antimicrobial therapy	
	Outpatient	Inpatient		Outpatient	Inpatient
USA[1]	CXR not necessary	CXR necessary (anteroposterior and lateral view required)	• Respiratory distress: tachypnea, dyspnea, retractions (suprasternal, intercostal, subcostal), grunting, nasal flaring, apnea, altered mental status • Hypoxemia (SpO2 < 90% at sea level)	• Antimicrobial not routinely required for pre-school-aged children unless bacterial disease suspected • Previously healthy, fully immunized*, mild to moderate presentation, bacterial disease suspected: amoxicillin	• Fully immunized*, low prevalence of high-level pneumococcal penicillin-resistance: ampicillin OR penicillin G • Not fully immunized, significant prevalence of high level pneumococcal penicillin-resistance†: 3rd generation cephalosporin • Atypical bacteria are suspected: beta-lactam + macrolides
UK[2]	CXR not necessary	CXR necessary (lateral view not required)	• Temperature > 38.5°C • Nasal flaring • Cyanosis • Grunting respiration • Tachycardia • Capillary refill time ≥ 2seconds • Hypoxemia (SpO2 < 92%) Infants: RR >70breaths/min moderate-severe recession intermittent apnea not feeding Older children: RR >50breaths/min severe difficulty in breathing dehydration	• < 2 years-old, mild symptoms of lower respiratory tract infection: no antibiotics • Clear clinical diagnosis of pneumonia: amoxicillin • Failure to first-line choice OR atypical bacteria are suspected at any age: macrolides to be added	• IV amoxicillin OR amoxicillin-clavulanic acid OR cefuroxime OR cefotaxime OR ceftriaxone • In very severe disease macrolides must be added

Japan[3]	CXR for those with fever, cough, and dyspnea along with chest findings		• Tachypnea: RR≥ 50breaths/min in children ≤ 1-year-old RR≥ 40breaths/min in children 2-5- year-old • Retractions • Nasal alar breathing • Shoulder breathing • Grunting • Cyanosis • Extent of infiltration ≥ 2/3 of one lung on CXR • SpO2 < 90% • Peripheral blood smear: 500 < neutrophils or > 10,000	**2mon-5-year-old**: amoxicillin ± clavulanic acid OR sultamicillin OR broad spectrum cephem PO‡	**2mon-5-year-old**: IV amoxicillin ± sultamicillin OR piperacillin OR broad spectrum cephem IV‡
Canada[4]	CXR is necessary		• Age < 6 months • Toxic appearance • Severe respiratory distress • Oxygen requirement • Dehydration • Vomiting • No response to appropriate oral antimicrobial therapy • Immunocompromised host • Non-compliant parents	**3mon-5-year-old**: amoxicillin OR erythromycin OR clarithromycin	**3mon-5-year-old**: ampicillin OR cefuroxime **In Intensive Care Unit:** cefuroxime + erythromycin OR clarythromycin
Brazil[5]	Tachypnea: 2-11-months-old: ≥ 50 breaths/minute > 12 months-old: ≥ 40 breaths/minute + CXR	Subcostal retraction + CXR	• Age < 2 months **For those older than 2 months:** • Subcostal retraction • Impaired level of consciousness • Inability to drink or eat • Convulsion • Cyanosis • Stridor in calm child • Nasal flaring	**2months-old onwards**: amoxicillin 2nd line: amoxicillin-clavulanic acid OR cefuroxime OR + erythromycin (for > 3-	**2months-old onwards**: penicillin G OR ampicillin **very severe:** ceftriaxone ± oxacillin ±

				year-old)	macrolides
South Africa[6]	≥2month-old cough OR difficult breathing WITH tachypnea: 2-11-months-old: ≥ 50 breaths/minute > 12 months-old: ≥ 40 breaths/minute	subcostal retraction OR stridor OR general danger sign[§]	• Age < 2 months **For those older than 2 months:** • Impaired level of consciousness • Inability to drink or eat • Cyanosis • Stridor in calm child • Severe chest-wall indrawing • SpO2 ≤ 92% at sea level < 90% at higher altitudes • Severe malnutrition • Failure to respond to ambulatory care or clinical deterioration on treatment	**3mon-5-year-old**: amoxicillin PO	**3mon-5-year-old**: IV ampicillin OR amoxicillin PO OR cefuroxime OR amoxicillin-clavulanic acid OR cefotaxime OR ceftriaxone
WHO[7, 8]	Tachypnea: 2-11-months-old: ≥ 50 breaths/minute > 12 months-old: ≥ 40 breaths/minute ± Subcostal retraction	Tachypnea + danger signs including subcostal retraction	• Age < 2 months **For those older than 2 months: (danger signs)** • Unusually sleep or unconscious • Inability to drink or eat • Convulsions • Head nodding Failure to respond to ambulatory care or clinical deterioration on treatment	**Non-severe** Tachypnea with no subcostal retraction or danger sign with a wheeze but no fever: no antibiotics but close follow-up Tachypnea without wheeze: amoxicillin **Severe** Subcostal retraction: amoxicillin PO; 2nd line ceftriaxone	**Very severe** Ampicillin OR penicillin + gentamicin parenterally

[*]Fully immunized with conjugate vaccines for *Haemophilus influenzae* type b and *Streptococcus pneumonia*
[†]High level pneumococcal penicillin-resistance: Minimal Inhibitory Concentration ≥ 4ug/mL
[‡]Cephem PO: cefditoren pivoxil, cefcapene pivoxil, cefteram pivoxil; IV: ceftriaxone, cefotaxime
[§]General danger sign: inability to drink, convulsions, abnormal sleepiness, or persistent vomiting
WHO: World Health Organization
CXR: chest x-ray
RR: respiratory rate
IV: intra-venous
PO: per os

References for Table:

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