

Pediatric Pneumonia – MBBS Final Year Handout

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1. Introduction

Pediatric pneumonia is one of the most common causes of morbidity and mortality in children, especially in low- and middle-income countries. It is an infection of the lung parenchyma that can be caused by bacteria, viruses, fungi, and atypical organisms. Early recognition, classification, and timely treatment are essential for reducing disease burden.

2. Etiological Basis

Age Group	Bacterial	Viral	Other
Neonates (0–28 days)	Group B Streptococcus, E. coli, Listeria monocytogenes	Herpes Simplex Virus	Chlamydia trachomatis
1 month – 5 years	S. pneumoniae, H. influenzae type B, S. aureus	RSV, Parainfluenza, Influenza, Adenovirus	Mycoplasma pneumoniae, C. pneumoniae
>5 years	S. pneumoniae, M. pneumoniae, C. pneumoniae	Influenza, Adenovirus	Mycoplasma pneumoniae
Immunocompromised	Pseudomonas, Klebsiella	CMV	Pneumocystis jirovecii, Aspergillus

3. Classification (IMNCI Guidelines)

Category	Symptoms	Action
No Pneumonia	Runny nose, mild cough, no difficulty breathing	Home care and follow-up
Pneumonia	Fast breathing, no chest indrawing/danger signs	Outpatient antibiotics (Amoxicillin)
Severe Pneumonia	Fast breathing with chest indrawing	Hospital referral, oxygen, injectable antibiotics
Very Severe Disease	Danger signs: cyanosis, grunting, inability to feed, lethargy, convulsions	Immediate hospital admission, oxygen, IV antibiotics

4. History and Physical Examination

History: Age, onset, fever, cough type, breathing difficulty, immunization status, exposure history.

Examination: General appearance, vitals, respiratory signs (tachypnea, retractions, crackles, dullness, grunting, nasal flaring).

5. Investigations

Blood Tests: CBC, blood culture, CRP, procalcitonin.

Imaging: CXR – lobar consolidation (bacterial), diffuse infiltrates (viral).

Microbiology: Sputum culture (older children), NP aspirate (viral), PCR for atypical pathogens.

6. Differential Diagnosis

Bronchiolitis, asthma exacerbation, tuberculosis, foreign body aspiration, congestive heart failure.

7. Management

Setting	Treatment
Outpatient	Oral Amoxicillin 80–90 mg/kg/day for 5–7 days, macrolides if atypical, supportive care.
Inpatient	IV antibiotics (Ampicillin+Gentamicin or Ceftriaxone), oxygen, fluids (avoid overload), manage complications.

8. Complications

Pleural effusion, empyema, lung abscess, sepsis, ARDS.