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# Disease Coding of Respiratory Infections at Imelda General Hospital of Indonesian Workers, Medan, 2026

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**ABSTRACT**

***Objective:*** *This study aimed to describe the diagnosis and procedure coding process for respiratory infection cases at Imelda General Hospital of Indonesian Workers (Rumah Sakit Umum Imelda Pekerja Indonesia/RSU IPI), Medan, in 2026.* ***Method:*** *The study examined respiratory infection cases with a diagnosis of unspecified bronchopneumonia among pediatric patients aged 1–11 years and infants aged 2–11 months. Data were collected through observation and interviews and analyzed descriptively according to ICD-10 and ICD-9-CM guidelines. Using a retrospective case study approach, researchers reviewed patient assessment forms, Integrated Patient Progress Notes (CPPT), and discharge summaries – covering medical history, physical examinations, diagnostic tests, procedures, and medication therapy – across a sample of 25 inpatient medical records from January to May 2026. The coding process involved identifying the diagnosis lead term, verifying codes in the Alphabetical Index and Tabular List, and assigning diagnosis code J18.0 for unspecified bronchopneumonia, along with procedure codes for Respiratory medication administered by nebulizer (93.94) and Other chest X-ray (87.49).* ***Results:*** *Findings across the 25 medical records showed that unspecified bronchopneumonia was established through medical history/chief complaints, physical examination, laboratory results, radiological examination, and medication therapy. The diagnosis and procedure coding processes complied with ICD-10 and ICD-9-CM guidelines, yielding accurate, complete, and standardized medical record data.* ***Novelty:*** *The novelty of this study lies in its specific examination of the diagnosis and medical procedure coding process for unspecified bronchopneumonia cases among pediatric and infant inpatients at RSU IPI Medan. Unlike studies that discuss medical record coding in general, this study focuses on the integration of clinical documentation review, including medical history, physical examinations, laboratory results, radiological examinations, and medication therapy, with the application of ICD-10 and ICD-9-CM coding standards. By identifying the specific diagnosis code J18.0 and related procedure codes 93.94 and 87.49, this study provides a practical overview of how accurate and standardized coding can be achieved in respiratory infection cases. The findings also offer context-specific insights into the role of complete clinical documentation in supporting reliable hospital reporting, disease statistics, and healthcare reimbursement processes.*

## INTRODUCTION

An electronic medical record (EMR) is a medical record created using an electronic system [1]. One core activity in EMR administration is diagnosis and medical procedure coding, which assigns clinical classification codes based on international disease and procedure classifications [2]. Coding assigns primary and secondary diagnosis codes according to the World Health Organization's (WHO) ICD-10 (2010 version) and procedure/intervention codes according to ICD-9-CM (2010 version). Coding is critical in prospective payment systems such as Indonesia Case-Based Groups (INA-CBG), as it determines reimbursement amounts paid to Advanced Referral Health Facilities (Fasilitas Kesehatan Rujukan Tingkat Lanjutan / FKRTL) using morbidity coding rules [3], [4].

Respiratory tract infections affect the respiratory system across both the upper respiratory tract (nostrils, vocal cords, larynx, and paranasal sinuses) and the lower respiratory tract (trachea, bronchi, bronchioles, and alveoli).The incidence of respiratory tract infections continues to rise alongside increasing air pollution, ranking among the top 10 causes of death in Indonesia according to the 2020 Institute for Health Metrics and Evaluation (IHME) survei [5]. In Indonesia, respiratory infections represent a major cause of mortality, with reported proportions including 52.9% for bronchopneumonia, 32% for pneumonia, 19.8% for bronchitis, 13% for pulmonary tuberculosis (TB), 12% for rhinitis, and 9.2% for pharyngitis [6]. Bronchopneumonia is an inflammation of the bronchioles and lung parenchyma that commonly occurs in children under five years of age, though it can also affect older children and adults [7], [8]. It is caused by viruses, bacteria, fungi, or parasites and is transmitted via respiratory droplets from coughing or sneezing or through direct contact with infected individuals. Clinical manifestations include fever, productive or dry cough, dyspnea (shortness of breath), chest wall retractions, tachypnea, pleuritic chest pain, cyanosis around the nose or mouth, lethargy, and crackles (*ronchi*) or wheezing on auscultation [9]. Physical examination typically reveals fever, tachypnea, chest retractions, dullness on percussion over affected lung areas, and coarse wet crackles or bronchial breath sounds. Diagnostic evaluation relies on chest radiographs (anteroposterior [AP] or posteroanterior [PA] thorax X-ray) to detect pulmonary infiltrates or consolidation, alongside complete blood count (CBC) laboratory tests to assess elevated leukocyte counts indicative of infection [10]. Management includes supportive care and antimicrobial therapy—such as third-generation cephalosporins (e.g., cefadroxil, cefotaxime, cefixime, ceftriaxone), penicillins, or other indicated antibiotics—with generally favorable prognosis and recovery within two to three weeks.

A preliminary survey conducted by the researchers at Imelda General Hospital of Indonesian Workers (*Rumah Sakit Umum Imelda Pekerja Indonesia*), Medan, in 2026 identified 237 respiratory infection cases, of which **bronchopneumonia** was the most prevalent diagnosis with **221 cases**. This exceeded other respiratory infections such as pulmonary tuberculosis (14 cases), bronchitis (1 case), and lung abscess (1 case). Because bronchopneumonia is both highly prevalent and requires accurate clinical, laboratory, and radiological confirmation, it was selected as the focus of this study to evaluate diagnosis documentation and medical record coding quality at RSU IPI Medan.

## RESEARCH METHODS

### Study Design and Approach

The type of research used in this study was a case study. A case study is a research strategy that aims to understand a particular context or phenomenon by examining one or more cases in depth and comprehensively [11]. This study employed a retrospective approach because the researcher reviewed previously available patient medical record data [12]. Therefore, this study examined coding practices in depth using existing historical data.

### Population

The population in this case study consisted of 221 medical records of hospitalized patients diagnosed with *bronchopneumonia* at Imelda Pekerja Indonesia General Hospital (RSU IPI) during the period from January to May 2026.

**Purposive Sampling Technique**

The sample in this case study was selected using a *purposive sampling* technique, namely selecting medical records that met the inclusion criteria and did not fall under the exclusion criteria.

**a. Inclusion Criteria**

Sample selection was based on specific considerations or criteria predetermined by the researcher. Inclusion criteria refer to the general requirements that subjects must meet to be eligible for participation in a study. The inclusion criteria applied in this study were as follows:

1. Medical records of inpatients at Imelda Pekerja Indonesia General Hospital (RSU IPI) during the period from January to May 2026.
2. Medical records of patients diagnosed with *bronchopneumonia* without complications from other diseases.
3. Medical records containing complete diagnoses documented by healthcare professionals (HPs).

**b. Exclusion Criteria**

Exclusion criteria refer to the conditions used to eliminate or exclude subjects who do not meet the inclusion criteria because they may interfere with the measurement or interpretation of the research results. The exclusion criteria in this study were as follows:

1. Medical records of outpatients at Imelda Pekerja Indonesia General Hospital (RSU IPI) during the period from January to May 2026.
2. Medical records of patients with diagnoses other than *bronchopneumonia* or *bronchopneumonia* accompanied by complications.
3. Incomplete patient medical records.

**c. Sample**

Based on the study population at Imelda Pekerja Indonesia General Hospital, there were 221 medical records of patients diagnosed with *bronchopneumonia* within the category of respiratory infectious diseases. After applying the predetermined inclusion criteria, a total of 25 medical records were selected as the study sample. These records belonged to inpatients at Imelda Pekerja Indonesia General Hospital during the period from January to May 2026, with a primary diagnosis of *bronchopneumonia* without any disease complications.

**Case Study Stages and Ethical Approval**

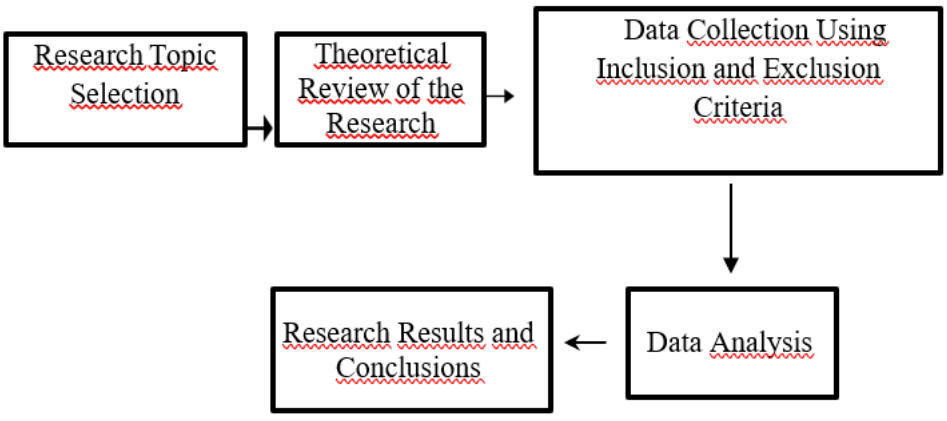



**Figure 3.1.** Case Study Stages

The research progressed through selecting the respiratory infection coding topic at RSU IPI Medan (focusing on bronchopneumonia as the highest-volume diagnosis), conducting literature review, applying data collection techniques (observation, interviews, inclusion/exclusion screening, and documentation), analyzing January–May 2026 bronchopneumonia medical records, and formulating conclusions. Ethical clearance was obtained from the research ethics committee under reference **No. 858/LPPM-UIM/VII/2026/e**.

## RESULTS AND DISCUSSION

### *RESULTS*

**DESCRIPTION TABLE – BRONCHOPNEUMONIA DIAGNOSIS**

| Medical Record | Description |
|---|---|
| **MR 1** | **Anamnesis:** High fever for 3 days, no nausea or vomiting, occasional cough. **Physical Examination:** Temperature: 40°C; Thorax: bilateral rhonchi (+/+). **Complete Blood Count (CBC):** Leukocytes: 3.7 × $10^3$/µL; Lymphocytes: 58.7%. **Supporting Examination:** Chest X-ray (AP view): Bronchopneumonia. **Medical Procedures:** Nebulization with Ventoline + Pulmicort every 12 hours to dilate the airways and reduce inflammation. **Medication:** Paracetamol to reduce fever, cefotaxime to treat bacterial infections, and Apialys to supplement vitamin requirements. |
| **MR 2** | **Anamnesis:** Fever accompanied by productive cough for 4 days, nausea (+), and vomiting. **Physical Examination:** Temperature: 39°C; Thorax: rhonchi (+/-), wheezing (-/-). **CBC:** Neutrophils: 91.3%; Lymphocytes: 6.6%. **Supporting Examination:** Chest X-ray (AP view): Bronchopneumonia. **Medical Procedures:** Nebulization with Ventoline + Pulmicort. **Medication:** Paracetamol to reduce fever, ceftriaxone as an antibiotic, ambroxol to relieve productive cough, and Riamycin as an antibiotic. |
| **MR 3** | **Anamnesis:** High fever on the fourth day, productive cough, runny nose (+), and vomiting when coughing. **Physical Examination:** Temperature: 38°C; Thorax: rhonchi (+). **Supporting Examination:** Chest X-ray (AP view): Bronchopneumonia. **Medical Procedures:** Nebulization with Ventoline + Pulmicort to dilate the airways and reduce inflammation. **Medication:** Ambroxol to relieve thick productive cough and loosen accumulated mucus. |
| **MR 4** | **Anamnesis:** Shortness of breath before hospital admission, productive cough for 2 weeks, and fever (+). **Physical Examination:** Temperature: 39°C; Thorax: rhonchi (+). **CBC:** Neutrophils: 37.7%; Lymphocytes: 52.9%. **Supporting Examination:** Chest X-ray (AP view): Bronchopneumonia. **Medical Procedures:** Nebulization with Ventoline + Pulmicort. **Medication:** Paracetamol to reduce fever, ampicillin to inhibit bacterial cell wall synthesis, ambroxol to loosen mucus, and additional medications including triamcinolone, dexamethasone, and azithromycin. |
| **MR 5** | **Anamnesis:** Shortness of breath for 1 day, cough for 3 days, fever (+), weakness (+), nausea, and vomiting (+). **Physical Examination:** Temperature: |

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| | 38°C; Thorax: bronchial breath sounds, rhonchi (+), wheezing (+). **CBC:** Leukocytes: 22.8 × $10^3$/µL. **Supporting Examination:** Chest X-ray (AP view): Bronchopneumonia. **Medical Procedures:** Nebulization with Ventoline + Pulmicort. **Medication:** Paracetamol to reduce fever and cefotaxime to treat severe bacterial infections. |
| **MR 6** | **Anamnesis:** Intermittent shortness of breath for more than 2 weeks, cough for 2 months, fluctuating fever, nausea, and vomiting. **Physical Examination:** Temperature: 38.7°C; Thorax: chest retractions (+), bronchial breath sounds, rhonchi (+), wheezing (+). **CBC:** Leukocytes: 12.9 × $10^3$/µL; Neutrophils: 47.1%; Lymphocytes: 45.8%. **Supporting Examination:** Chest X-ray (AP view): Bronchopneumonia. **Medical Procedures:** Nebulization with Ventoline + Pulmicort. **Medication:** Paracetamol to reduce fever and ampicillin to treat bacterial infections. |
| **MR 7** | **Anamnesis:** Fever that worsened at night and productive cough (+). **Physical Examination:** Temperature: 40°C; Thorax: rhonchi (+/-), wheezing (-/-). **CBC:** Neutrophils: 85.5%; Lymphocytes: 10.8%. **Supporting Examination:** Chest X-ray (AP view): Bronchopneumonia. **Medical Procedures:** Nebulization with Ventoline. **Medication:** Paracetamol to reduce fever, cefotaxime to treat bacterial infections, and salbutamol to relieve airway narrowing. |
| **MR 8** | **Anamnesis:** Fluctuating fever (+), shortness of breath (+), cough (+), productive cough (+), and runny nose (+). **Physical Examination:** Thorax: bilateral rhonchi (+/+), wheezing (+/+). **CBC:** Leukocytes: 16.5 × $10^3$/µL; Neutrophils: 73.1%; Lymphocytes: 19.6%. **Supporting Examination:** Chest X-ray (AP view): Bronchopneumonia. **Medical Procedures:** Nebulization with Ventoline + Pulmicort. **Medication:** Paracetamol, ceftriaxone, dexamethasone, and cefixime. |
| **MR 9** | **Anamnesis:** Fever for 3 days with fluctuating body temperature, cough for 1 week, flu-like symptoms (+), and intermittent shortness of breath. **Physical Examination:** Temperature: 38°C; Thorax: bronchial breath sounds, rhonchi (+), wheezing (+). **CBC:** Neutrophils: 47.8%; Lymphocytes: 45.8%. **Supporting Examination:** Chest X-ray (AP view): Bronchopneumonia. **Medical Procedures:** Nebulization with Combivent inhalation. **Medication:** Paracetamol, cefotaxime, gentamicin, ambroxol, and azithromycin. |
| **MR 10** | **Anamnesis:** Fever for 2 days, occasional cough, vomiting three times on the day of examination, and a history of shortness of breath at home. **Physical Examination:** Temperature: 37.8°C; Thorax: rhonchi (+/-). **CBC:** Leukocytes: 14,800 × $10^3$/µL; Neutrophils: 82.0%; Lymphocytes: 13.3%. **Supporting Examination:** Chest X-ray (AP view): Bronchopneumonia. **Medication:** Paracetamol to reduce fever, ampicillin as an antibiotic, and salbutamol to relieve airway narrowing. |
| **MR 11** | **Anamnesis:** Shortness of breath that worsened over the past 2 days, accompanied by occasional coughing. **Physical Examination:** Thorax: bilateral wheezing (+/+). **CBC:** Leukocytes: 14.0 × $10^3$/µL. **Medical Procedures:** Nebulization with Ventoline + Pulmicort + Ventasal |

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| | (salbutamol). **Medication:** Ceftriaxone to treat bacterial infections and salbutamol to relieve and prevent airway narrowing. |
| **MR 12** | **Anamnesis:** Fever for 4 days with fluctuating body temperature, cough (+), and intermittent shortness of breath. **Physical Examination:** Temperature: 38°C; Thorax: bronchial breath sounds. **Supporting Examination:** Chest X-ray: Bronchopneumonia. **Medical Procedures:** Nebulization with Ventoline + Pulmicort. **Medication:** Paracetamol to reduce fever, cefotaxime to treat bacterial infections, salbutamol to dilate the airways, and cefixime. |
| **MR 13** | **Anamnesis:** High fever for 3 days, cough (+), shortness of breath (+), and nausea (+). **Physical Examination:** Temperature: 38.4°C; Thorax: rhonchi (+/+), wheezing (+/+). **CBC:** Leukocytes: 12.7 × $10^3$/µL; Neutrophils: 84.9%; Lymphocytes: 9.0%. **Medical Procedures:** Nebulization with Ventoline + Pulmicort. **Medication:** Paracetamol to reduce fever, cefotaxime, acetylcysteine, and salbutamol. |
| **MR 14** | **Anamnesis:** Fluctuating fever for 1 month, accompanied by cough and shortness of breath. **Physical Examination:** Temperature: 38.5°C; Thorax: bilateral rhonchi (+/+). **CBC:** Hemoglobin: 8.5 g/dL. **ABG:** pH: 7.504; $pCO_2$: 20.1 mmHg; $pO_2$: 181 mmHg; $HCO_3$: 16.0 mmol/L; Total $CO_2$: 16.6 mmol/L. **Medical Procedures:** Nebulization with Pulmicort + Ventolin. **Medication:** Paracetamol, cefotaxime, and gentamicin. |
| **MR 15** | **Anamnesis:** Intermittent productive cough for more than 1 month, shortness of breath, and a history of fever for approximately 3 days. **Physical Examination:** Thorax: bilateral rhonchi (+/+). **CBC:** Neutrophils: 44.2%; Lymphocytes: 47.8%. **Medical Procedures:** Nebulization with Ventoline + Pulmicort. **Medication:** Paracetamol to reduce fever, salbutamol to dilate the airways, ambroxol and acetylcysteine to loosen mucus, and cefotaxime to treat bacterial infections. |
| **MR 16** | **Anamnesis:** Shortness of breath for 1 day, intermittent cough for 2 weeks, and intermittent fever. **Physical Examination:** Temperature: 38°C; Thorax: chest retractions (+), bronchial breath sounds, rhonchi (+). **CBC:** Leukocytes: 16.0 × $10^3$/µL. **Medical Procedures:** Nebulization with 1 ampoule of Ventoline + 2 cc of 0.9% NaCl every 8 hours to dilate the airways and loosen mucus. **Medication:** Ampicillin-sulbactam to treat bacterial infections and paracetamol to reduce fever. |
| **MR 17** | **Anamnesis:** Shortness of breath for 2 days, cough for 5 days, and fever (+). **Physical Examination:** Temperature: 38°C; Thorax: chest retractions (+), rhonchi (+). **CBC:** Leukocytes: 16.0 × $10^3$/µL. **Medical Procedures:** Nebulization with Ventoline + Pulmicort every 8 hours. Cetirizine drops were administered to relieve respiratory symptoms and allergic reactions. **Medication:** Cefotaxime, gentamicin, paracetamol, dexamethasone, and Amobiotic drops. |
| **MR 18** | **Anamnesis:** Fever accompanied by cough for approximately 5 days. **Physical Examination:** Temperature: 39°C; Thorax: rhonchi (+). **CBC:** Leukocytes: 12.7 × $10^3$/µL. **Supporting Examination:** Chest X-ray (AP view): Bronchopneumonia. **Medical Procedures:** Nebulization with Ventoline + Pulmicort. **Medication:** Paracetamol to reduce fever, ceftriaxone and |

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| | cefotaxime to treat bacterial infections, salbutamol to dilate the airways, and acetylcysteine to loosen mucus. |
| **MR 19** | **Anamnesis:** Fluctuating fever for 1 week, productive cough (+), and mild shortness of breath. **Physical Examination:** Temperature: 38°C; Thorax: rhonchi (+/+), wheezing (+/-). **CBC:** Lymphocytes: 44.9%. **Supporting Examination:** Chest X-ray: Bronchopneumonia. **Medical Procedures:** Nebulization with Ventoline + Pulmicort to dilate the airways and reduce inflammation. **Medication:** Ampicillin sodium-sulbactam to treat lower respiratory tract bacterial infections and paracetamol to reduce fever. |
| **MR 20** | **Anamnesis:** Cough for 5 days, sputum production, shortness of breath, vomiting whenever coughing, and a history of fever. **Physical Examination:** Thorax: bilateral rhonchi (+/+), bilateral wheezing (+/+). **Supporting Examination:** Chest X-ray (PA view): Bronchopneumonia. **Medical Procedures:** Nebulization with Ventoline + Pulmicort to dilate the airways and reduce inflammation. **Medication:** Cefotaxime to treat lower respiratory tract bacterial infections, salbutamol to relieve airway narrowing, and acetylcysteine to loosen mucus. |
| **MR 21** | **Anamnesis:** Cough lasting more than 3 weeks, dry cough (+), no shortness of breath (-), fluctuating fever, and weakness (+). **Physical Examination:** Temperature: 37.8°C; Thorax: bronchial breath sounds. **CBC:** Neutrophils: 31.3%; Lymphocytes: 63.8%. **Supporting Examination:** Chest X-ray (PA view): Bronchopneumonia. **Medical Procedures:** Nebulization with Ventoline + Pulmicort. **Medication:** Paracetamol, ambroxol, ceftriaxone, ranitidine, and dexamethasone. |
| **MR 22** | **Anamnesis:** Fever for approximately 3 days, productive cough (+), and pallor. **Physical Examination:** Temperature: 39°C; Thorax: rhonchi (+). **CBC:** Leukocytes: 19.1 × $10^3$/µL. **Supporting Examination:** Chest X-ray (AP view): Bronchopneumonia. **Medication:** Cefotaxime to treat lower respiratory tract bacterial infections, paracetamol to reduce fever, salbutamol to relieve airway narrowing, and Amobiotic drops to treat bacterial infections. |
| **MR 23** | **Anamnesis:** Fever accompanied by productive cough for approximately 3 days, with fluctuating fever patterns. **Physical Examination:** Temperature: 39°C; Thorax: rhonchi (+/-). **Supporting Examination:** Chest X-ray (AP view): Bronchopneumonia. **Medication:** Paracetamol to reduce fever, cefotaxime to treat lower respiratory tract bacterial infections, ambroxol to relieve productive cough and loosen mucus, and azithromycin to inhibit bacterial growth associated with lung inflammation. |
| **MR 24** | **Anamnesis:** Shortness of breath accompanied by coughing for 1 week, worsening over the past 2 days. **Physical Examination:** Thorax: rhonchi (++/+). **CBC:** Leukocytes: 13.7 × $10^3$/µL. **Supporting Examination:** Chest X-ray (AP view): Bronchopneumonia. **Medical Procedures:** Nebulization with Ventoline + Pulmicort to dilate the airways and reduce inflammation. **Medication:** Cefotaxime to treat lower respiratory tract bacterial infections, salbutamol to relieve airway narrowing, paracetamol to reduce fever, and Amobiotic drops to treat respiratory tract infections. |

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| **MR 25** | **Anamnesis:** Fever for 1 week, shortness of breath for 2 days, and occasional coughing. **Physical Examination:** Temperature: 38.3°C; Respiratory Rate: 60 breaths/minute; Thorax: rhonchi (-/+). **CBC:** Leukocytes: 16.1 × $10^3$/µL. **Supporting Examination:** Chest X-ray (AP view): Bronchopneumonia. **Medical Procedures:** Nebulization with Ventoline + Pulmicort. **Medication:** Paracetamol to reduce fever, cefotaxime to treat severe bacterial infections, gentamicin to treat severe bacterial infections, and dexamethasone to reduce inflammation. |

***Discussion***

Based on the results of the research conducted, several conclusions can be drawn regarding the coding of respiratory tract infections at Imelda Pekerja Indonesia General Hospital, Medan, based on 25 medical records. The diagnosis of Bronchopneumonia, Unspecified was established based on the patients' clinical symptoms, including fever with a body temperature ranging from 38–41°C, cough (+), and shortness of breath with a respiratory rate of ≥40 breaths/minute. Physical examination findings included thoracic rhonchi (+/+) and wheezing (+/+). Complete blood count laboratory results showed increased leukocyte and neutrophil levels, indicating a possible bacterial infection.

The results of the anteroposterior (AP) chest radiological examination concluded bronchopneumonia. The medical procedures included nebulization with Ventoline + Pulmicort to dilate the airways and reduce inflammation of the respiratory tract walls. Cefotaxime and other antibiotics were administered to eliminate bacteria causing infection and prevent further bacterial infections.

The disease coding was consistent with ICD-10, using code J18.0, which represents Bronchopneumonia, Unspecified [14], [15], [16]. Furthermore, the supporting examinations and medical procedures were coded in accordance with ICD-9-CM, as follows: AP chest X-ray (87.49), complete blood count (90.59), and nebulization (93.94).

**Rules and Procedures for Coding Bronchopneumonia and Medical Procedures: AP Chest X-ray, Complete Blood Count (90.59), and Nebulization (93.94)**

**1. Steps for Coding Bronchopneumonia Using ICD-10**

- Determine the lead term, which is Bronchopneumonia.
- After determining the lead term, namely Pneumonia, open ICD-10 Volume 3 and refer to the alphabetical index under the letter P. Search for the term Pneumonia, then follow the modifier listed below the lead term, namely Broncho. The term Bronchopneumonia is found with code J18.0 on page 517.
- To verify the accuracy of the code, perform a cross-check using ICD-10 Volume 1.
- After completing the cross-check, code J18.0 is confirmed as Bronchopneumonia, listed under Block Category J09–J18, Influenza and Pneumonia, on page 465.

**2. Steps for Coding Lung Radiography Procedures Using ICD-9-CM**

- Determine the lead term, which is Radiography of Lung.
- After determining the lead term, namely Radiography, open the ICD-9-CM Index to Procedures and refer to the alphabetical index under the letter R. Search for the modifier, namely Lung. The term Radiography of Lung is found with code 87.49 on page 410.
- Next, perform a cross-check in the ICD-9-CM Tabular List of Procedures using the code identified in the Index to Procedures.

- After completing the cross-check, code 87.49 is confirmed as Other Chest X-ray, listed on page 235.

**3. Steps for Coding Complete Blood Count Procedures Using ICD-9-CM**

- The first step is to determine the lead term for the blood examination procedure, namely Examination.
- Next, open the ICD-9-CM Index to Procedures and refer to the alphabetical index under the letter E. Focus on the term Blood. The laboratory examination is listed under code 90.59 on page 325.
- To verify the accuracy of the code, open the ICD-9-CM Classification of Procedures and search for code 90.59.
- The blood examination procedure is listed under code 90.59 on page 246.

**4. Steps for Coding Nebulization Procedures Using ICD-9-CM**

- Open the ICD-9-CM manual to identify the procedure code. Refer to the Index to Procedures and determine the lead term, namely Therapy, under the alphabetical index T, with the modifier Nebulizer.
- Nebulization therapy is listed on page 458 under code 93.94.
- Open the ICD-9-CM Classification of Procedures to verify the accuracy of the procedure code. Code 93.94 is listed on page 254.

## CONCLUSION

**Fundamental Finding:** Bronchopneumonia is an inflammatory condition of the bronchioles and lung parenchyma affecting vulnerable pediatric and infant populations, diagnosed via combined clinical and radiological findings. Findings from the 25 inpatient medical records at RSU Imelda Pekerja Indonesia Medan (children aged 1–11 years and infants aged 2–11 months) demonstrated clinical presentations, CBC findings, thorax AP/PA imaging results, and therapeutic regimens aligned with bronchopneumonia characteristics. Coding of the diagnosis (J18.0 in ICD-10) and diagnostic/therapeutic procedures (87.49, 90.59, and 93.94 in ICD-9-CM) conformed to coding guidelines, resulting in accurate, complete, and standardized medical record data. **Implication:** RSU Imelda Pekerja Indonesia Medan—particularly the medical records unit—should maintain and enhance completeness across clinical assessments, CPPT entries, and discharge summaries (including history, physical examination, laboratory results, and radiology reports), and ensure coders consistently perform cross-checks between the Index and Tabular List in accordance with ICD-10 and ICD-9-CM guidelines to sustain accurate, complete, and standardized medical record data. **Limitation:** This study is limited by the use of 25 inpatient medical records from a single hospital, RSU Imelda Pekerja Indonesia Medan. Consequently, the findings may not fully represent bronchopneumonia diagnosis and medical procedure coding practices in other healthcare facilities. The study also focuses on coding conformity with ICD-10 and ICD-9-CM guidelines without examining other factors that may influence coding accuracy, such as coder competency, documentation quality, and hospital information system support. **Future Research:** Future research should involve a larger number of medical records from multiple hospitals to provide a broader understanding of bronchopneumonia diagnosis and procedure coding accuracy. Further studies should examine factors influencing coding completeness and accuracy, including clinical documentation quality, coder competency, and the implementation of medical record information systems. In addition, research could evaluate the impact of standardized

coding practices on hospital reporting quality, health data management, and healthcare reimbursement processes.

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