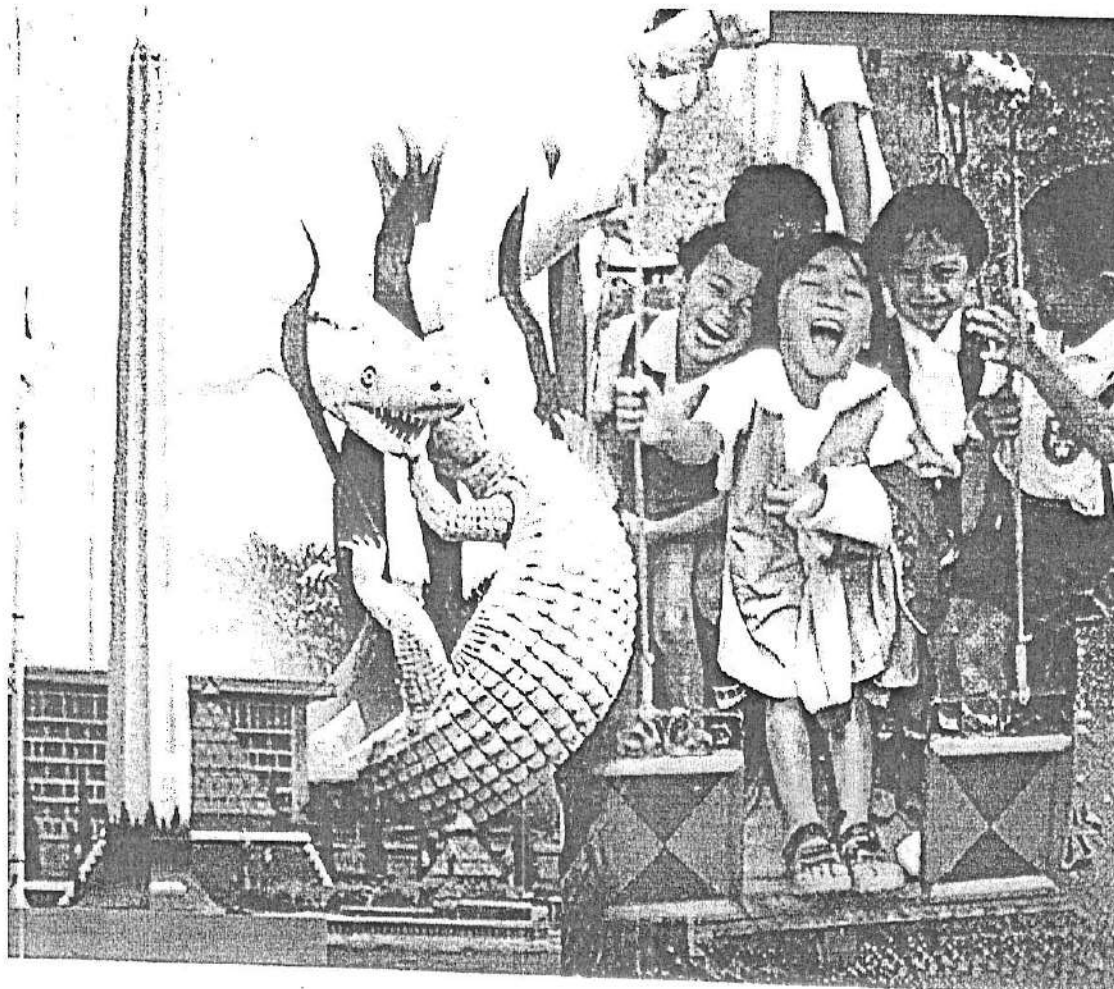




Indonesian Pediatric Society (IPS/ID)

14<sup>th</sup>   
Indonesian  
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14<sup>th</sup> INDONESIAN CONGRESS OF PEDIATRICS  
**KONIKA**

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Theme: Competence-Based Professionalism In Pediatrics

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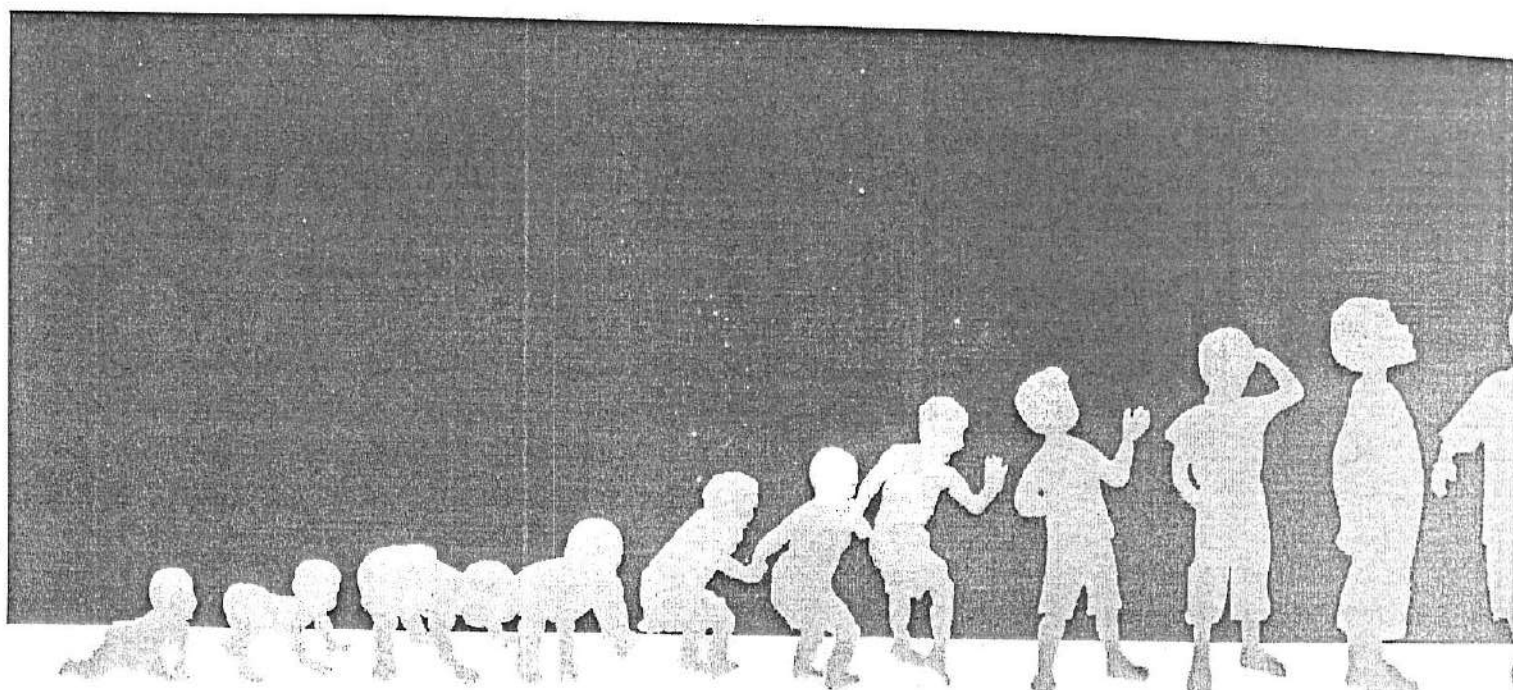
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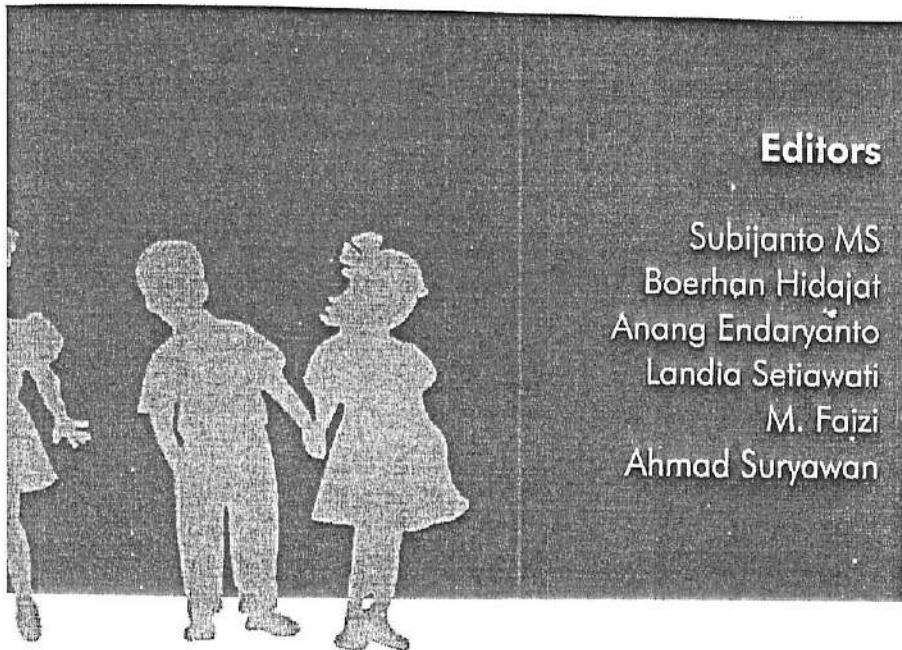
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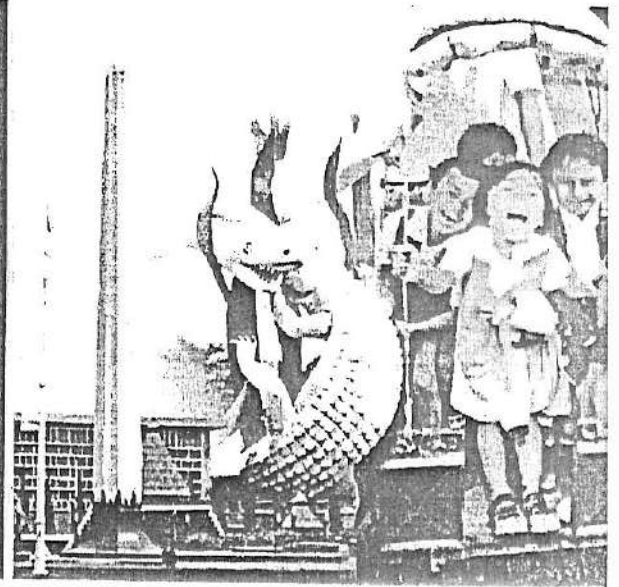
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 Makassar-Indonesia



P-RES-  
031

**PROFILE OF COMMUNITY ACQUIRED PNEUMONIA  
IN CHILDREN AT SOETOMO HOSPITAL SURABAYA IN 2006**

**Arina Setyaningtyas, Hanna Dyahferi, Retno Asih Setyoningrum, Landia Setiawati**

Department of Child Health  
Medical School, Airlangga University - Soetomo Hospital  
Surabaya - Indonesia

RESPIROLOGY

**Background:** Community Acquired Pneumonia (CAP) is one of the most important health problem affecting children all over the world. Clinical findings, laboratory and radiological examination of CAP may largely vary from mild to severe.

**Objective:** To report profile of CAP in children hospitalized at Soetomo Hospital Surabaya in 2006.

**Methods:** This research was a retrospective study. Data of children with primary diagnosis of CAP in 2006 were obtained from medical records of the Department of Child Health Soetomo Hospital Surabaya. The diagnosis CAP was based on clinical findings and radiological examination. The clinical features of illness, laboratory and radiological examination were recorded and presented descriptively.

**Results:** During the study period, 227 patients were diagnosed as CAP. More than half (57.3%) patients aged 2 months - 1 year. Most common symptom and signs were cough (96.9%), chest indrawing (77.4%), and tachypnea (58.8%). Leucocytosis (39.6%). Accompanying diseases (i.e congenital heart disease, neurological and gastroenterological disorders) were found in 52.6%. One hundred patients (43.9%) had malnutrition. Patchy infiltrate was found in 78.9% chest X-ray examination. Complications of CAP such as respiratory failure occurred in 8.8% cases and sepsis in 10.5%, leading to mortality of 6.6%.

**Conclusions:** Community acquired pneumonia in children still count as a major problem at Soetomo Hospital Surabaya. The morbidity was influenced by malnutrition and other accompanying diseases.

**Keywords:**

## PROFILE OF COMMUNITY ACQUIRED PNEUMONIA IN CHILDREN AT SOETOMO HOSPITAL SURABAYA IN 2006

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**Conclusions:** Community acquired pneumonia in children still count as a major problem at Soetomo Hospital Surabaya. The morbidity was influenced by malnutrition and other accompanying diseases.

**Keywords:** children, community acquired pneumonia, clinical features of illness, laboratory examination, radiological examination.

### Introduction

Community Acquired Pneumonia (CAP) is one of the most important health problem affecting children all over the world. Clinical findings, laboratory and radiological examination of CAP may largely vary from mild to severe. The term "community-acquired pneumonia" (CAP) refers to pneumonia in a previously healthy person who acquired the infection outside a hospital.<sup>1,2</sup> The World Health Organization has defined pneumonia solely on the basis of clinical findings obtained by visual inspection and timing of the respiratory rate. The cause of CAP is often difficult to establish. The most effective methods are often invasive and cannot always be justified and serological diagnosis is too late to be of any therapeutic use. Despite the progress made in the diagnosis of pneumonia, it takes a few days to identify the

causative microorganism in the blood or sputum samples and the etiology of half of all patients with CAP remains uncertain. Physicians need reliable data on the relative prevalence of different etiological agents in the patients area of residence, in addition to the clinical, laboratory and radiological findings in order to initiate antibiotic treatment empirically. The relative frequency of etiological agents varies among different geographical areas. The profile of community acquired pneumonia in children at Soetomo hospital Surabaya is not known. The present study was undertaken to determine the profile of CAP in children hospitalized at Soetomo Hospital Surabaya in 2006.

### Material and Methods

This research was a retrospective study. Data of children with diagnosis of CAP in 2006 were obtained from medical records of the Department of Child Health Soetomo Hospital Surabaya. The diagnosis CAP was based on clinical findings and radiological examination. The clinical features of illness, laboratory and radiological examination were recorded and presented descriptively. Children were eligible for enrollment if they were less than 18 years old, had preceding fever, and had clinical (tachypnea, chest retractions, or abnormal auscultatory findings) and radiologic evidence of lower respiratory infection (LRI). Children were excluded if they had proven immunodeficiency or immunosuppression or uncomplicated bronchiolitis of presumptive viral etiology. No patients had received the pneumococcal conjugate or polysaccharide vaccines.<sup>2</sup>

### Radiology

The radiologist assigned standardized and mutually exclusive diagnoses that included unequivocal focal or segmental consolidation with or without pleural effusion, atelectasis, consolidation indistinguishable from atelectasis, or interstitial pneumonia.

### Statistics

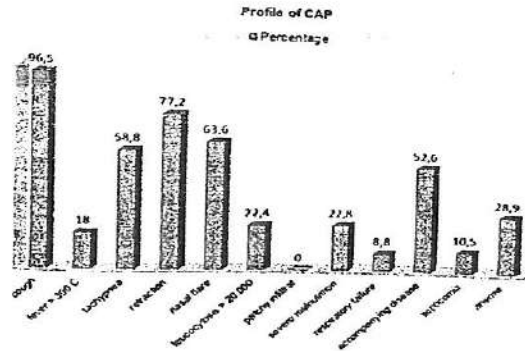
Statistical analyses were performed with SPSS for Windows 10.0 (SPSS Inc, Chicago, IL). Significance was evaluated by student t test and/or  $\chi^2$  test and 'p' value less than 0,05 was considered as significant.

**Results:** During the study period, 227 patients were diagnosed as CAP. More than half (57.3%) patients aged 2 months - 1 year. Most common symptom and signs were cough (96.9%), chest indrawing (77.4%), and tachypnea (58.8%). Leucocytosis (39.6%) .Accompanying diseases (i.e congenital heart disease, neurological and

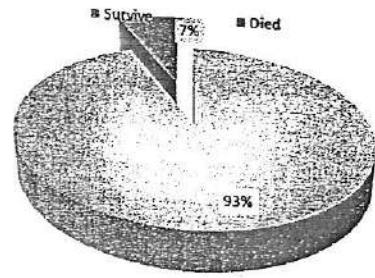
gastroenterological disorders) were found in 52.6%. One hundred patients (43.9%) had malnutrition. Patchy infiltrate was found in 78.9% chest X-ray examination. Complications of CAP such as respiratory failure occurred in 8.8% cases and sepsis in 10.5%, leading to mortality of 6.6%.

Table 1. Characterization of patients with CAP

| Characteristic                   | No  | Percentage |
|----------------------------------|-----|------------|
| Sex, male                        | 128 | 56.4       |
| Age at diagnosis                 |     |            |
| < 2 month                        | 18  | 7.0        |
| 2-12 month                       | 130 | 57         |
| > 1 year                         | 79  | 34.6       |
| Nutritional status               |     |            |
| Moderate malnutrition            | 48  | 21.1       |
| Severe malnutrition              | 52  | 22.9       |
| Presence of accompanying Disease | 120 | 52.9       |
| Presence of septicemia           | 24  | 10.5       |
| Leading to respiratory failure   | 20  | 8.8        |



Picture 1. Profile CAP



Picture 2. Mortality of CAP

Discussion

During the study period, 227 patients were diagnosed as CAP. We showed that children with aged 2 months - 1 year had the greatest degree of CAP, indicating that the babies have at most as many episodes of pneumonia as older children. Specifically, the 3 clinical features that were most strongly associated with pneumonia were cough (96.9%), chest indrawing (77.4%), and tachypnea (58.8%). Pneumonia should be suspected if tachypnea occurs in a patient younger than two years with a temperature higher than 38.0 C (100.4 OF). Measurement of tachypnea requires a full one-minute count while the child is quiet. The World Health Organization's age-specific criteria for tachypnea are the most widely used : a respiratory rate of more than 50 breaths per minute in infants two to 12 months of age; more than 40 breaths per minute in children one to five years of age; and more than 30 breaths per minute in children older than five years.<sup>3</sup>

Accompanying diseases (i.e congenital heart disease, neurological and gastroenterological disorders) were found in 52.6%. One hundred patients (43.9%) had malnutrition. Patchy infiltrate was found in 78.9% chest X-ray examination. Complications of CAP such as respiratory failure occurred in 8.8% cases and sepsis in 10.5%, leading to mortality of 6.6%.The mortality from pneumonia is high particularly in patients with associated co-morbid conditions. Severe CAP requiring



intensive care unit (ICU) admission, spread of radiographic infiltrates and previous treatment with immunosuppressive drugs have all been associated a poor outcome.  
45 The mortality in our study was 7 %. Analysis with student t test, malnutrition ( $p = 0,036$ ) and accompanying diseases ( $p= 0,029$ ) have significant correlation with the mortality of CAP.

**Conclusions:** Community acquired pneumonia in children still count as a major problem at Soetomo Hospital Surabaya. The morbidity was influenced by malnutrition and other accompanying diseases.

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# PROFILE OF COMMUNITY ACQUIRED PNEUMONIA IN CHILDREN AT SOETOMO HOSPITAL SURABAYA IN 2006



Arina Setyaningtyas, Hanna Dyahferi, Retno Asih Setyoningrum, Landia Setiawati

Department of Child Health, Medical School, Airlangga University – Soetomo Hospital Surabaya - Indonesia

## Background

Community acquired pneumonia (CAP) is one of the most important health problem affecting children all over the world. Clinical findings, laboratory and radiological examination of CAP vary from mild to severe.

## Objective

To report profile of CAP in children hospitalized at Soetomo Hospital Surabaya in 2006.

## Method

This research was a retrospective study. Data of children with primary diagnosis of CAP in 2006 were obtained from medical records of the Department of Child Health Soetomo Hospital Surabaya. The diagnosis CAP was based on clinical findings and radiological examination. The clinical features of illness, laboratory, and radiological examination was recorded and presented descriptively.

## Result

During the study period, 227 patients were diagnosed as CAP. More than half (57.3%) patients aged 2 months – 1 year. Most common symptom and signs were cough (96.9%), chest indrawing (77.4%), and tachypnea (58.8%), leukocytosis (39.6%). Accompanying diseases (i.e. congenital heart disease, neurological and gastroenterological disorders) were found in 52.6%. One hundred patients (43.9%) had malnutrition. Patchy infiltrate was found in 78.9% chest X-rays examination. Complication of CAP such respiratory failure occurred in 8.8% cases and sepsis in in 10.5% leading to mortality of 6.6%.

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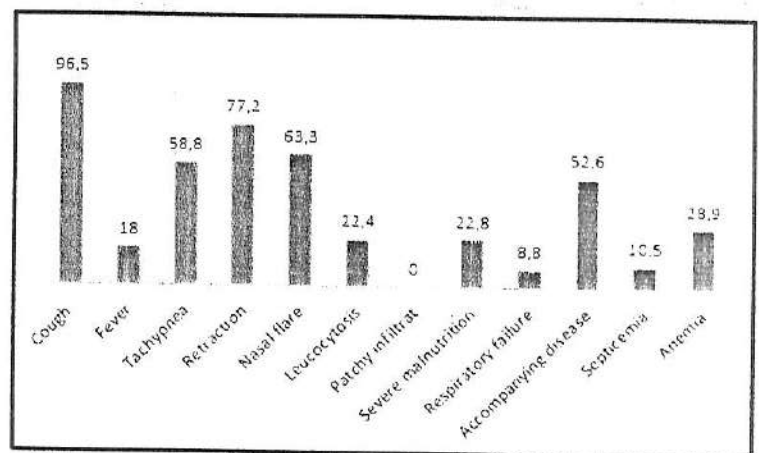


Figure 1. Symptoms and Sign of patients with CAP

## Conclusion

Community acquired pneumonia in children still count as a major problem at Soetomo Hospital Surabaya. The morbidity was influenced by malnutrition and other accompanying diseases.