

# Review of Paediatrics In-Patient at Nepal Medical College and Teaching Hospital

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## Abstract

**Introduction:** This retrospective study was undertaken to analyze the disease pattern in the Pediatric ward in a Medical College. After analyzing the data, our study would emphasize on the prevention and the management modality of the most prevalent diseases in the community. **Methodology:** This study was carried out retrospectively for one year from January 2008 - December 2008 on the basis of age and sex and the frequency of disease according to the system involved. **Results:** A total number of 453 patients were admitted during the study period. There were 267(59%) male and 186(41%) female children. Less than five years age group accounted for 180(39.7%) excluding the neonate. In the study period, respiratory tract infections were the commonest cause of admission in all age group 198(43.7%), gastrointestinal including diarrhoeal diseases were 112(24.7%), enteric fever comprised of 22(5%), and other disease comprised of about 143(31.5%) of the total admissions. CNS diseases comprised of 43(9%) of which 7(16%) were meningitis and meningoencephalitis, 26(60%) of the total CNS cases were due to febrile convulsion. Respiratory diseases were found to be the major cause of morbidity in children. **Conclusion:** Children under five years age being the most common age group amongst all, with infection being the most predominant cause of Pediatric morbidity, the WHO/UNICEF algorithm for Integrated Management of Childhood Illness (IMCI) is specifically suited for the developing country like ours.

**Key words:** Paediatric Inpatient, Morbidity, IMCI

## Introduction

Nepal Medical College and Teaching Hospital is situated at Attarkhel, Jorpati, Kathmandu. Patients come to this hospital from various parts of Kathmandu, Lalitpur and Bhaktapur and the other neighboring districts. The main objective of the study was to determine the common disease pattern of the children seen in and around the Kathmandu valley from where they come to this hospital. After analyzing the data, our study would emphasize on the prevention and the management modality of the most prevalent diseases in the community.

The objective of the study was to find out the following,

- 1) Age group and sex distribution of children.
- 2) Types of diseases in children.

- 3) Common diseases found in the admitted patients.
- 4) Number of days of stay in the hospital.
- 5) Month wise record of children admitted in the hospital.
- 6) Geographic distribution of the patient coming to Nepal Medical College.

## Methods

After obtaining consent from the Hospital Director, all inpatient record files of admitted patients in the pediatric ward were analyzed retrospectively on the basis of age and sex and the frequency of disease according to systems involved. Their addresses mentioned in the record file was noted and the number of hospital stay was calculated based on admission and discharge date. The final diagnosis was recorded.

## Results

A total no of 453 patients were admitted during the study period. Males were 267(59%) and females were 186(41%). Less than five years age group accounted for 180(39.7%) excluding the neonates [Fig.4]. In the study period, respiratory infections were 198(43.7%), gastrointestinal including diarrhoeal diseases were 112(24.7%) of which Enteric fever comprised of 22(5%), and other diseases comprised of about 143(31.3%) amongst the total admissions. Respiratory tract infections were the commonest cause of admissions in all age group. Other than respiratory and gastrointestinal, the most common condition was febrile seizure constituting 26 (6%) of total admissions. The CNS diseases comprised of 43(9%) of total admissions out of which 7(16%) were meningitis and meningoencephalitis. 26(60%) of total CNS cases were febrile convulsions.

The highest number 42 (21.2%) of respiratory diseases were admitted in September followed by 27(13.6%) in August and 18(9%) in March [Fig.2]. Cases of diarrhoea were seen mostly during May 25 (22.3%) and July 16 (14.2%) showing that the admission rate of diarrhoeal diseases were higher during the rainy season. Sporadic cases of cholera were seen in July (n=1), August (n=2) and September (n=1).

The month of May 68 (15%) and July 56 (12.3%) was found to have the highest number of admission and November 16 (3.5%) and December 16 (3.5%) the lowest [Fig.3].

Geographically maximum number of patients came from Jorpati 334 (74%) and the rest from other places.

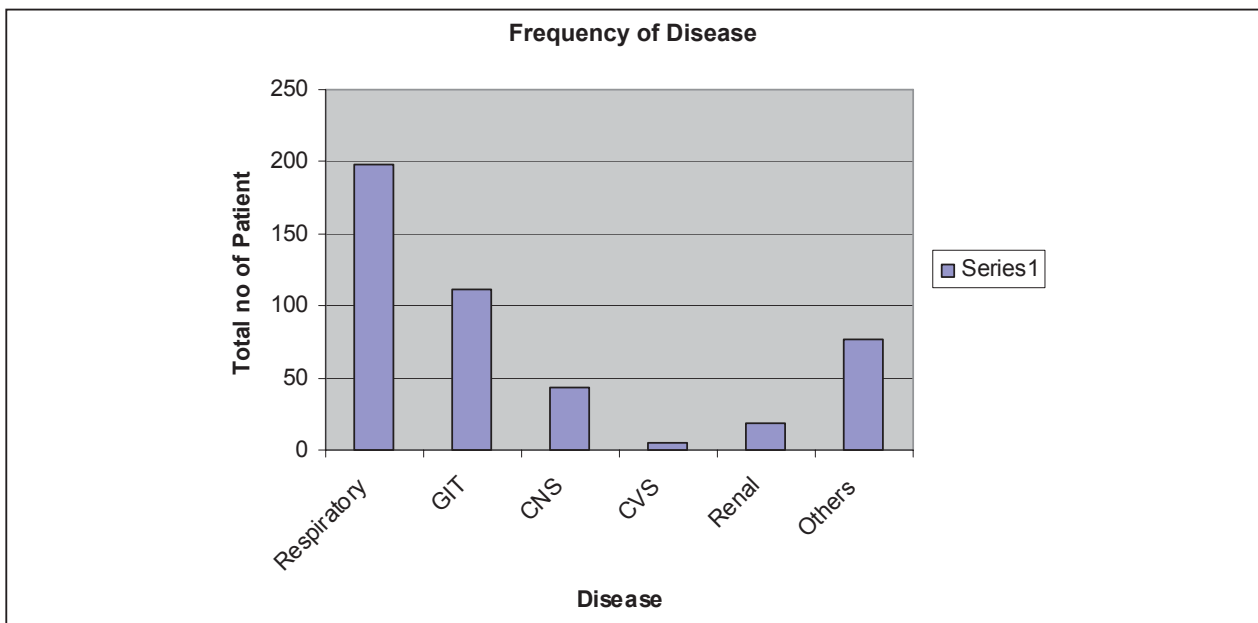


Fig 1: Showing System wise Frequency of Diseases.

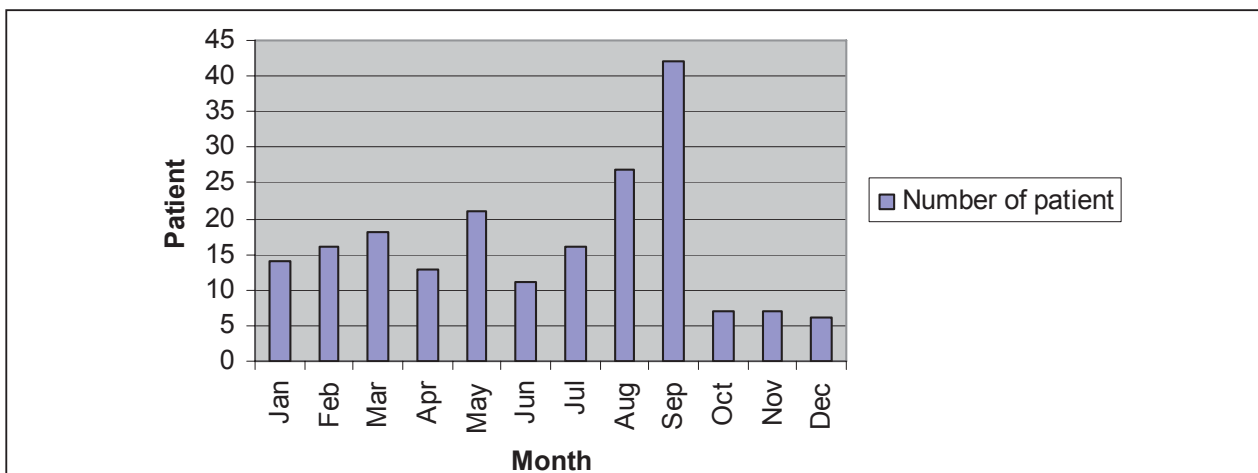


Fig 2: Graph showing Frequency of Respiratory Diseases.

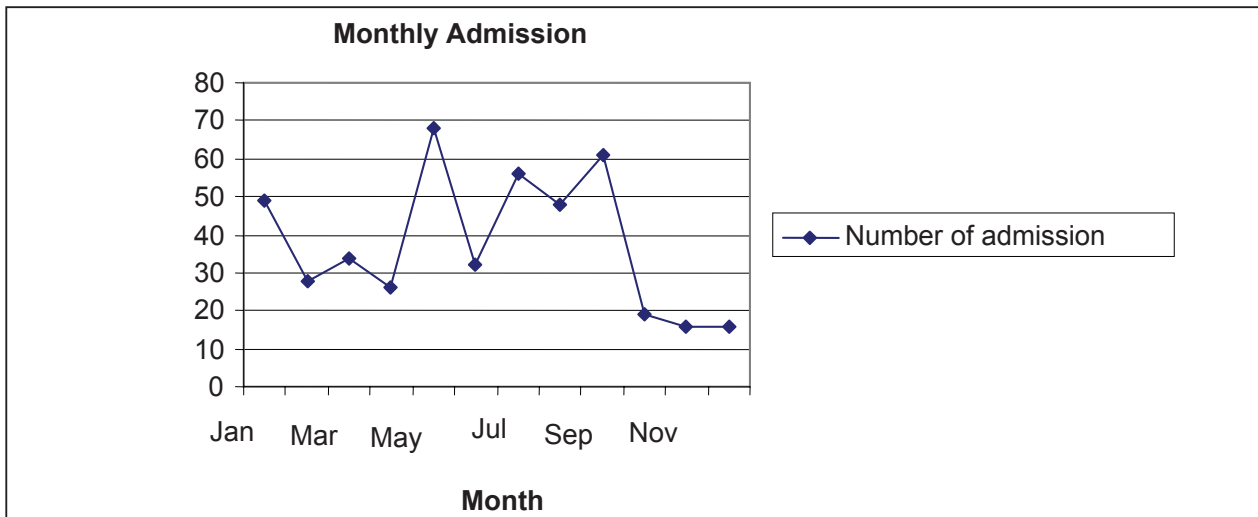


Fig 3: Line diagram showing seasonal trend in admissions (total).

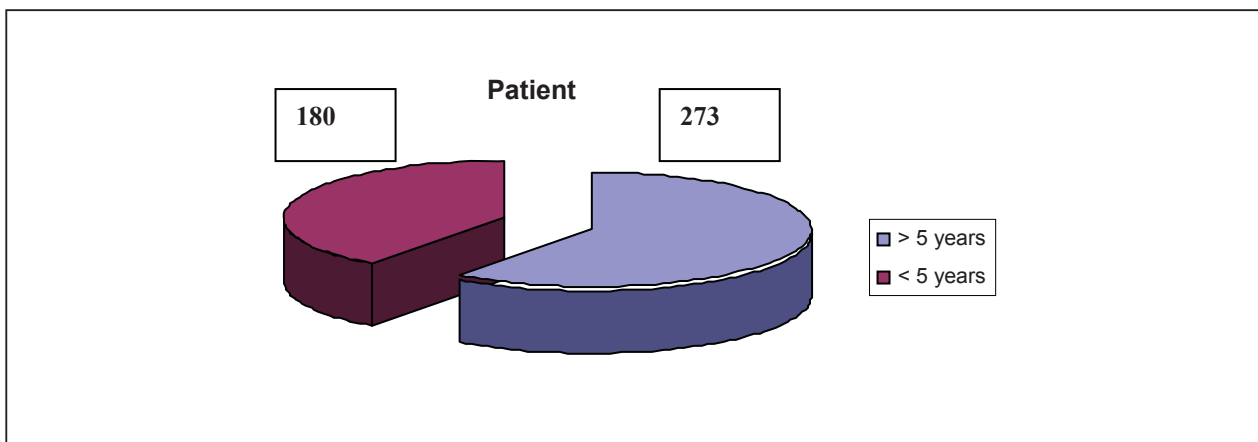


Fig 4: Total number of Admissions according to the age group.

Table 1: Showing days of stay in Hospital

No of patient	Duration of Hospital stay
158	4 days
78	5 days
80	> 6 days

## Discussion

### Age and sex distribution

In the study period, among 453 admitted children, 267 (59%) were males and 186 (41%) were females. The male and female ratio was M:F = 1.43 lower than (1.67)<sup>1</sup> and (1.78)<sup>2</sup> that was obtained in the study conducted among 761 and 312 patients in Kathmandu Medical College Teaching hospital (KMCTH) and Dhulikhel Hospital (Kathmandu University Teaching Hospital) respectively. Less than five years age patients admitted in the pediatric ward were 180(39.7%) of the total number of admissions. The least number of admitted patients were the age of more than 12.

### Pattern of Disease

In the study period, 198 (43%) of the diseases comprised of respiratory tract infections including Pneumonia, Acute Bronchiolitis and wheezy chest. Acute Gastroenteritis comprised of 112 (24.7%). Tuberculosis comprised of 19 (4.1%) of the admitted cases that was comparatively more than in the studies done in KMCTH (2.4%)<sup>1</sup> among 489 patient and in Dhulikhel Hospital (3.2%)<sup>2</sup> of 312 patients. These figures were statistically low in all three studies in our country as compared to the study done by Hauser WA<sup>3</sup> which vary between 15% in developing countries and below 5% in the United States and European Countries. The low incidence in our studies could be due to difficulty in estimating the

TB burden in children. Challenges for doing so include difficulties in establishing a definitive diagnosis, the increased presence of extrapulmonary disease in young children, the lack of standard definition, and the low priority on the public health agenda compared to adult TB.<sup>4</sup> Lack of education, poor socioeconomic status, lack of health awareness and the belief in traditional healers were the reason for late presentation contributing to the morbidity and mortality due to the diseases.

Febrile convulsions were seen in 5.7% of the total cases and in 26 (60%) of the CNS diseases which was higher than the study conducted in KMCTH (50%)<sup>1</sup> and Dhulikhel Hospital (48.27%)<sup>2</sup>. Worldwide cumulative incidence of febrile convulsion among children ranges from about 1% in China to more than 8% in Japan<sup>5</sup>. Meningitis was seen in 8 (1.7%) out of which one was Meningococcal Meningitis. Aseptic Meningitis secondary to mumps was also seen. Out of 18 (4%) renal cases, 6 (33%) were Nephrotic Syndrome and 7(38%) were Nephritic Syndrome. The low incidence of childhood renal diseases in our study could be because renal diseases in children are commonly associated with few or no symptoms<sup>6</sup>. Out of 7 (1.5%) Cardiac patients 2 cases were Constrictive Pericarditis and 5 cases of Acute Rheumatic Fever were also admitted out of which 2 cases presented with only Chorea as the sole manifestation of Acute Rheumatic Fever. Majority of the cardiac patients were of Rheumatic origin and this is attributed to the poor socioeconomic status leading to unhygienic living conditions and overcrowded households that predisposes to the spread of Streptococcal infections and poor and under-nutrition of our patients that alter the immunological response in increasing the susceptibility to infections<sup>7</sup>. 2 cases of Kerosene Poisoning, 2 cases of ITP, 3 cases of HSP, a case of Congenital Hypothyroidism, a case of Kalazar were also admitted during this period.

Among the respiratory cases, most were Pneumonia followed by Acute Bronchiolitis. Acute Bronchiolitis were admitted mainly during the winter season, this might have been due to seasonal outbreak of respiratory viral infection particularly respiratory syncytial virus and influenza viruses<sup>8</sup>. Diarrhoeal diseases were mostly seen during rainy season<sup>9</sup> 19 (4.1%) of the total cases. Sporadic cases of cholera were seen in July (1), August (2) and September (1) similar to the study done in Karachi, Pakistan by Sheikh *et.al* published in 1997 in which the Cholera cases peaked during April to October<sup>10</sup>.

### **Days of Stay in Hospital**

In the study period, it was seen that maximum

number of patient i.e. 158 (34.8%) stayed for 4 days followed by 80 (17.6%) for 5 days. Patients staying 6 days or more were 78 (17.2%).Table:1 Patients with complication of Pneumonia, Meningitis, and Nephritic Syndrome were found to have longer duration of stay.

### **Geographic Distribution of In –Patient Admissions**

In the study period, the maximum number of patient came from Jorpati 334 (74%) and the rest from the neighboring districts namely Bhaktapur, Lalitpur, Kavre and Ramechhap.

### **Monthly Admissions**

In the study period, the highest number of admission was 68 (15%) in May and the lowest was 16 (3.5%) in December.Fig.3. This may be because of increased number of diarrhoeal disease and respiratory disease during this season. The number of admission in the rest of the month were as follows, January 49 (10.8%), February 28 (6.1%), March 34 (7.5%), April 26 (5.7%), June 32 (7%), July 56 (12.3%),August 48 (10.5%), September 61(13.4%) October 19 (4.1%) and November 16 (3.5%).

### **Conclusion**

Children under five being the most common age group amongst all, with infection being the most predominant cause of Pediatric morbidity, the WHO/ UNICEF algorithm for Integrated Management of Childhood Illness (IMCI) is specifically suited for the Hospital setup like ours.

### **Acknowledgements**

I would like to thank Mr Rishi Sapkota of the medical record section who has helped with data collection.

**Funding:** None

**Conflict of interest:** None

**Permission from IRB:** Yes

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**How to cite this article ?**

Upadhyay S, Sharma A, Rijal P, Shrestha S. Review of Paediatrics In-Patient at Nepal Medical College and Teaching Hospital. *J Nepal Paedr Soc* 2011; 31(1):25-29.  
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