

Original Research Article

Paediatric Medical Emergencies: Clinical and Evolving Profile of Patients Treated at a Prefectural Hospital in Guinea

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Article History

Received: 17.09.2025

Accepted: 28.10.2025

Published: 04.11.2025

Journal homepage:

<https://www.easpublisher.com>

Quick Response Code

Abstract: Introduction: The objective of this study was to examine the profile of patients admitted to the paediatric emergency department at Dubréka Prefectural Hospital. **Methods:** Our study was conducted in the paediatric ward of Dubréka Prefectural Hospital. It was a dynamic descriptive study lasting six months, from 1 April to 30 September 2024. We included in our study all children aged 0 to 15 years admitted to the paediatric ward of Dubréka Prefectural Hospital for a medical emergency. A medical emergency was defined as a situation requiring immediate medical intervention. **Results:** We recorded 176 emergency cases out of 882 admissions, representing a frequency of 20%. Children under 5 years of age were the most represented with 130 cases, or 74%. The average age of our patients was 3.6 years, with extremes of 0 and 14 years. Females predominated, with a sex ratio of M/F = 0.87. Fever was the most common reason for consultation (96.59%). Sixty-three patients were referred from another healthcare facility (35.8%). One hundred and twenty-eight patients were admitted between 8 a.m. and 3 p.m. (72.2%). The majority of patients arrived at the hospital by public transport (86.36%). Ninety-nine patients had received medical treatment before arriving at the hospital (62.26%). Malaria was the most common cause (36.96%), followed by bronchopneumonia (17.07%). **Conclusion:** Communication efforts aimed at changing behaviour must undoubtedly continue at the population level in order to combat delays in the treatment of paediatric medical emergencies, thereby optimising therapeutic benefits and minimising sequelae.

Keywords: Paediatric emergency, Dubréka, Malaria, Bronchopneumonia, Fever, Sub-Saharan Africa.

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INTRODUCTION

Paediatric medical emergencies are defined as any condition that threatens a child's life in the short term and requires rapid and appropriate treatment [1]. The quality of initial care, diagnosis and treatment, as well as referral to an appropriate facility, are important factors in the prognosis [2].

Indeed, the concept of urgency does not have the same meaning for the doctor and the patient. For the former, it is a pathological situation that is life-threatening and/or functionally threatening if not treated within a short period of time; while for the latter, any new or unusual situation is an emergency that warrants a request for care [1-3].

They are increasingly common in daily consultations and during on-call shifts due to the high

incidence of severe malaria, acute respiratory distress, acute diarrhoea with severe dehydration, etc. Due to the fragility of children, the boundaries between mild and severe morbid conditions are less clear, especially in the under-30-month age group, where a seemingly trivial condition can quickly become complicated [4].

Paediatric medical emergencies are currently the subject of debate in many countries around the world.

In the United States, it was estimated that 85% of emergency consultations were for 'non-life-threatening conditions' [5].

In sub-Saharan Africa, paediatric emergencies often fall under the category of disaster medicine, and several studies show the extreme severity of the conditions seen in emergency consultations [6].

At the Libreville Hospital Centre (Gabon), paediatric emergencies account for 27% of admissions to the department, with an overall mortality rate of 9% [7].

In Benin, Akodjènou J. *et al.*, reported in their study at the paediatric department of the Abomey–Calavi/Sô-Ava regional hospital a prevalence of 33.65% of referrals for medical emergencies [8].

The objective of this study was to examine the profile of patients admitted to the paediatric emergency department at Dubréka Prefectural Hospital.

METHODS

Our study was conducted in the paediatric ward of Dubréka Prefectural Hospital.

Dubréka is one of the prefectures in the Kindia region, located 50 km from the capital Conakry, with an area of 5,672 km². It is bordered to the east by the prefecture of Coyah, to the west by the Atlantic Ocean, to the north by the prefecture of Boffa, to the north-west by the prefecture of Fria and to the south by the governorate of Conakry. The population of Dubréka is estimated at around 352,859 inhabitants (in 2016). The main activities of this population are agriculture, fishing, livestock farming, trade, crafts and mining (in granite quarries).

The paediatric department is one of 10 departments at the Dubréka Prefectural Hospital. It has a hospitalisation capacity of 9 beds. The staff consists of one paediatrician, three general practitioners, five thesis students from Gamal Abdel Nasser University in Conakry, four state nurses and one technical health worker.

This was a dynamic descriptive study lasting six months, from 1 April to 30 September 2024. The study population consisted of all children aged 0 to 15 years admitted to the paediatric department for paediatric medical emergencies during the study period.

We included in our study all children aged 0 to 15 years admitted to the paediatric department of the Dubréka Prefectural Hospital for a medical emergency. A medical emergency was defined as a situation requiring immediate medical intervention.

We did not include in our study any children:

- admitted for surgical and trauma emergencies.
- who died before any investigation could be carried out.

We conducted an exhaustive recruitment of all children admitted to the paediatric ward of the Dubréka Prefectural Hospital who met the inclusion criteria.

Our variables were qualitative and quantitative, divided into:

- Sociodemographic data
- Clinical and paraclinical data
- Data on progress

The data were collected on a pre-established and validated survey form. The data were entered and analysed using Epi Info 7.2.2.6 software. Quantitative variables were expressed as means plus or minus standard deviation with their extremes or as medians with interquartile ranges. Qualitative variables were expressed as percentages.

A research protocol was submitted and validated before the surveys began, and data confidentiality was respected.

RESULTS

We recorded 176 emergency cases out of 882 admissions, representing a frequency of 20%. Children under 5 years of age were the most represented with 130 cases, or 74%. The average age of our patients was 3.6 years, with extremes ranging from 0 to 14 years. Females predominated, with a sex ratio of M/F = 0.87 (**Table I**).

Table I: Distribution of patients according to sociodemographic data

Settings	Number	Percentage
Age groups (year)		
[0 – 4]	130	73,86
[6 – 10]	24	13,64
[10 – 15]	22	12,5
Sex		
Masculine	82	46,59
Féminine	94	53,41
Area of origin		
Urban	128	72,73
Rural	31	17,61
Other	17	9,66
Total	176	100

Table II: Distribution of patients according to the route and means of transport used to reach the emergency department

Variables and modalities	Number	Percentage
Admission procedure		
Referred patient		
Healthcare personnel	24	13,6
Health centre	63	35,8
Not referred		
Indigenous	4	7,39
Direct consultation	23	13,07
Indigenous-clinical	13	7,39
Time of arrival		
00 à 07 h	7	3,98
08h -15h	128	72,3
16h 23h	41	23,3
Means of transport		
Personal car	24	13,64
Public transport	152	86,36
Type of treatment received prior to admission to the emergency department		
Medical	99	62,26
Traditional	20	12,58
Medical et traditional	40	25,16
No treatment	17	9,66

Table III: Clinical characteristics of patients

Settings	Number	Percentage
Reasons for visiting the emergency department		
Fever	170	96,59
Seizures	85	48,3
Vomiting	136	77,27
Shortness of breath	38	21,59
Loss of consciousness	35	19,88
Abdominal pain	79	44,89
Changes in symptoms		
< 24 h	13	7,39
24 - 48 h	20	11,36
> 48 h	143	81,25
Etiologies		
Severe malaria	65	36,96
Bronchopneumonia	30	17,07
Meningitis	23	13,07
Severe acute malnutrition	17	9,66
Acute gastroenteritis + severe dehydration	25	14,2
Sickle cell anaemia	9	5,11
Tetanus	1	0,56
Measles	3	1,70
Neonatal infections	9	5,11
Evolution		
Healed	157	89,2
Interim relief	7	3,98
Dead	7	3,98
Discharge against medical advice	5	2,84
Death register		
Respiratory distress *	5	71,56
Hypoglycaemia	1	14,29
Hypoglycaemia + Respiratory distress	1	14,29

*1 case of Covid-19

DISCUSSION

Our study was conducted in the paediatric department of Dubréka Prefectural Hospital. It was a dynamic descriptive study lasting six months, from 1 April to 30 September 2021. Despite this, we were able to carry out our study.

During our study period, out of a total of 882 children admitted to the paediatric department, we included 176 cases. The frequency of paediatric medical emergencies was 19.95% among other consultations.

In our study, the most affected age group was [0–4] years old, representing 73.86% of cases, with an average age of 3.62 ± 3.91 years and extremes ranging from 0 to 14 years. This phenomenon could be explained by the vulnerability of children in this age group.

The urban area was the most represented, accounting for 72.73% of cases, compared to 17.61% in rural areas and 9.66% outside Dubréka.

This difference can be explained by the fact that the Dubréka Prefectural Hospital is the referral centre for other basic health facilities (health centres, health posts and private clinics) in the prefecture. The majority of our patients came directly from their homes (50.57%), compared to 49.43% of referred children.

We noted a female predominance in 53.41% of cases, with a male-to-female sex ratio of 0.87. Enyuma *et al.*, also found a male predominance with a sex ratio of 1.3 [9]. We found no explanation in the literature for this female predominance in our study.

According to the time of arrival, 72.73% of our patients were admitted between 8 a.m. and 3 p.m. This time slot corresponds to regular consultations. For Enyuma *et al.*, three-fifths of children were admitted outside of opening hours [9].

The most commonly used means of transport was public transport (152, or 86%), followed by private cars (13.64%). None of our patients were transported by ambulance, whether medicalised or not. In their 2024 study in Australia and Sweden, Crilly *et al.*, found that most children (87%, $n = 131,698$) arrived at the emergency department by private transport, with 13% ($n = 19,285$) arriving by ambulance [10].

During our study, the predominant symptom was fever in 167 patients, or 94.89%. Our results are similar to those found by Diallo A.O *et al.*, [11], in 2017, who reported that fever was the main reason for consultation, with a frequency of 74.8%. Enyuma COA *et al.*, found that fever was the most common symptom (73.9%) [9]. The predominance of fever could be explained by the high frequency of infectious and parasitic diseases in tropical areas and, in our specific case, the high frequency of severe malaria and

respiratory infections. Severe malaria and its complications were by far the most common cause, accounting for 36.93% of cases. Guinea is an endemic area for malaria. Fever is a symptom present in all cases of malaria, and complications of malaria such as seizures, impaired consciousness and anaemia are common reasons for emergency room visits.

In our study, patients with a disease progression of > 48 hours, i.e. 81.25% of our patients, consulted paediatrics after the third day of disease progression. Enyuma COA *et al.*, also found a progression of more than 72 hours for the majority of patients [9].

The majority of our patients had previously sought medical treatment (self-medication or traditional treatment). Our results contradict those of Diallo RM [9], who noted that 50.9% of patients had taken medication without medical advice, 6.9% had sought traditional treatment, and only 3.2% had consulted a medical centre. Self-medication is a common practice in Guinea. Most patients consult a traditional healer before arriving at the hospital.

Upon admission, all our patients received appropriate emergency treatment based on their clinical presentation and the aetiologies found. Only some prescriptions were difficult to obtain. There is no medical coverage; all hospitalisation and treatment costs are borne by the parents. Multiple consultations and therapeutic interventions contribute to the collapse of the parents' meagre income, making it difficult to purchase medicines.

Overall, 89.20% of our patients were cured and we mourned 7 deaths, representing 3.98% of patients. However, we do not know the outcome for patients referred to university hospitals without a counter-referral, who were discharged against medical advice (5 patients, representing 2.84%).

CONCLUSION

This study shows that paediatric medical emergencies are a reality at Dubréka Prefectural Hospital. The main causes encountered were severe malaria and its complications, bronchopulmonary infections and meningitis. Communication efforts to change behaviour must undoubtedly continue at the population level to combat delays in the management of paediatric medical emergencies in order to optimise therapeutic benefits and minimise sequelae.

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Cite This Article: Aissata Barry, Mamadou Moustapha Diop, Salématou Hassimiou Camara, Emmanuel Camara, Kaba Bangoura, Moustapha Kouyaté (2025). Paediatric Medical Emergencies: Clinical and Evolving Profile of Patients Treated at a Prefectural Hospital in Guinea. *East African Scholars J Med Surg*, 7(11), 320-324.
