

Pediatric Emergency Department at the Moulay El Hassan Ben El Mehdi Regional Hospital Center, Laâyoune, Morocco Between Genuine Emergencies and False Alarms

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Abstract

Original Research Article

Introduction: Pediatric emergency services are the first point of contact between the public and the hospital; this reflects their easy access for all patients, whether for minor ailments or serious situations. Nowadays, emergency services face a very significant challenge, manifested by the workload and the quality of care. Implementing effective triage and improved patient referral is essential to optimizing the functioning of pediatric emergency departments and their impact on the overall quality of the healthcare system. However, any effective policy must be based on demonstrable results; hence the need for a more in-depth study of this service, to diagnose its various dysfunctions, and to analyze the most frequent illnesses in order to identify the needs of the population served. **Methods:** A retrospective descriptive study was conducted in the pediatric emergency department with 300 patients between June 1st and August 31st, 2025. The data collected mainly concern sociodemographic characteristics, medical history, reasons for consultation, clinical signs, and the outcome of patients admitted to the pediatric emergency department in order to identify priorities for care and prevention. **Result:** The characterization of the studied population by sex and age revealed a female predominance (52%) and an overrepresentation of preschool-aged children (22%). Regarding the final diagnosis, the most frequent pathologies affected the digestive system (20.9%), followed by the respiratory system (12% of cases), while (9.33%) represented admissions. **Conclusion:** The study of the epidemiological profile will allow us to better understand the typology of patients' pathologies, which will allow us to better define their needs and facilitate the chain of their care.

Keywords: Pediatric emergencies, Epidemiological profile, Triage, Healthcare quality, Morocco, Infant mortality.

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INTRODUCTION

Despite a decrease in infant mortality, from 11.9 million deaths in 1990 [1] to 5.6 million in 2016 [2], it remains high worldwide [3]. The quality of care in pediatric emergency departments is essential to combating infant mortality. A pediatric emergency is defined as any condition that threatens a child's life within a relatively short time and requires rapid and appropriate care [4]. However, this definition is not always respected, a universal and growing problem. In France, for example, between 1990 and 2001, the number of emergency department visits in public hospitals increased by 64%, representing an annual increase of 6.4% [4]. In sub-Saharan Africa (Congo), pediatric emergencies account for 18.54% of hospitalizations [4].

In Morocco, there was an increase of over 20% in the number of pediatric emergency department visits at Ibn Sina University Hospital (Rabat) between 2014 and 2015 [5]. At Ibn Rochd University Hospital (Casablanca), the number of pediatric emergency department visits rose from 40,786 in 2007 to 64,507 in 2016 [6]. Under these conditions, the pediatric emergency department, with its three levels (reception, triage, and hospitalization) [6], could be negatively affected. Several studies [7, 8] have examined the various dysfunctions of pediatric emergency departments in developed countries, particularly regarding reception and triage (false emergencies, patient satisfaction, and mortality and morbidity in the emergency department).

Hospitalization in pediatric emergency departments in developing countries [8,9] is an important area of study. However, very little research has focused on the situation in pediatric emergency departments. Our study aims to improve access to care and strengthen the patient care pathway at our level. Its objective is to describe the epidemiological profile of children consulting the pediatric emergency department of the Molay Hassan ben el Mehdi Hospital in Laâyoune and to evaluate the management methods. This data will contribute to informing health policies and improving practices in pediatric emergency care at the national level.

METHODS

Type and context of the study

Study design: A retrospective study described the epidemiological profile of children consulting at the emergency department of Molay Hassan Ben El Mehdi Hospital (CHR) (city of Laayoune), carried out over a period from June 1 to August 31, 2025.

Context and population of the study

This retrospective study was conducted in June 2025 using patient records from consultations at the pediatric emergency department of the Molay Hassan Ben El Mehdi Hospital (CHR) in Laayoune, between June 2025 and August 2025. The CHR Molay Hassan Ben El Mehdi in Laayoune is a level 2 public institution. It mainly covers the Laayoune Sakia Hamra region, as well as other regions in southern Morocco. The emergency department consists of two circuits, red and green.

Study sampling:

After the elimination of incomplete files and administrative procedures, a total of 300 consultants were selected for this study, concerning children aged 0 to 15 years, between June 2025 and August 2025.

Study variables:

The targeted variables mainly concern: (a) the patient's sociodemographic profile, (b) reasons for consultation and medical history, (c) waiting time, (d) initial triage in the emergency department, and (e) paraclinical examinations performed, (f) nature of care and its evolution.

Data resources and data collection measurement:

We requested data from the pediatric emergency department service registers, covering emergency department visits from June 2025 to August 2025, and extracted data from the records of patients admitted to the emergency department. The data were analyzed using Excel 2013 software.

RESULTS

After eliminating incomplete patient files, a total of 300 files were retained for this study, concerning children aged 0 to 15 years. In the emergency department of Moulay El Hassan Ben El Mehdi Hospital, between June 2025 and August 2025.

Sociodemographic characteristics of patients

In our sample (Figure 1), the patients' ages ranged from 0 to 5475 days (maximum: 15 years), with a median of 1314 days. Following WHO standards (49), we categorized the patients into age groups: newborn, infant, toddler, preschool age, school-aged child, and adolescent. The preschool-aged child category was predominant (22%), while the adolescent category was the least represented (10%). The sex ratio was 0.92, with 156 girls and 144 boys. Regarding their origin, the majority of children came from urban areas (77%) (Figure 2)

Reasons for consultations and context

The main reasons for consultation were infectious diseases, including fever (21.3%), vomiting and diarrhea (11.3%), followed by trauma (16.5%), respiratory illnesses (12%), and seizures (6.5%), skin rash (5.4%), and malaise and loss of consciousness (1.3%). Regarding medical history, 33% of patients had no prior medical or surgical history, while 47% had a medical history and 17% had a surgical history (Figure 3). Vaccination status was complete in 66.7% of patients, incomplete in 24.3%, and unknown in 9% (Figure 4).

The average waiting time was between 31 and 60 minutes in most cases, it should be noted that open trauma, asthma attacks and convulsions are excluded from this waiting time given the direct passage to the red circuit (Graph 5).

Initial triage revealed (1.7%) critical cases, (10%) urgent cases, (37.5%) intermediate cases and (50.8%) mild cases (Graph 6).

Pediatric emergency department management: according to (Graph 7), the majority of cases (36.67%) were discharged with a prescription, only (9.33%) of patients were hospitalized in the pediatric ward, and (1.33%) in the intensive care unit. The data collected shows that (28%) of patients were referred to the pediatric consultation, (18.33%) were referred to specialized pediatric surgery consultations, (4.33%) was the percentage of parents who refused treatment for their children, and (2%) of patients were transferred to the university hospital (level 3 patients).

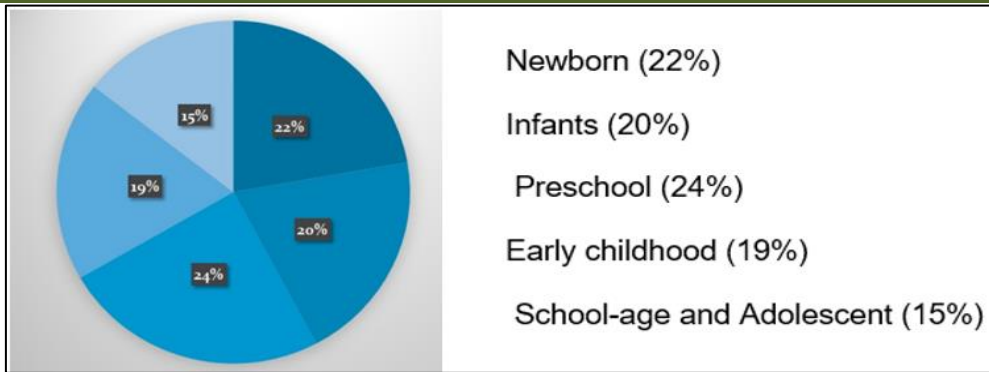


Figure 1: Distribution of pediatric emergency department visits by age group

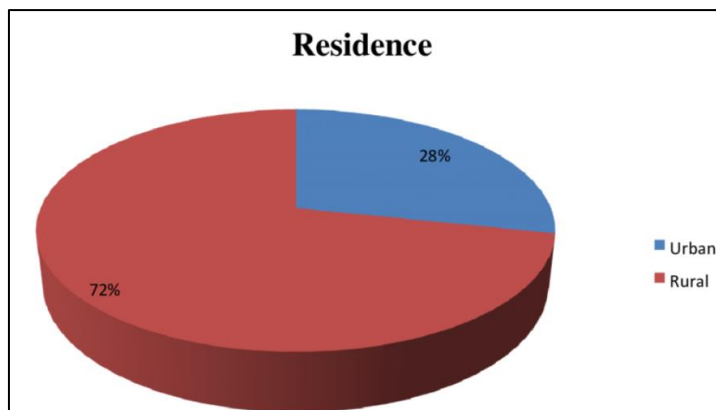


Figure 2: Distribution of pediatric consultations by place of residence

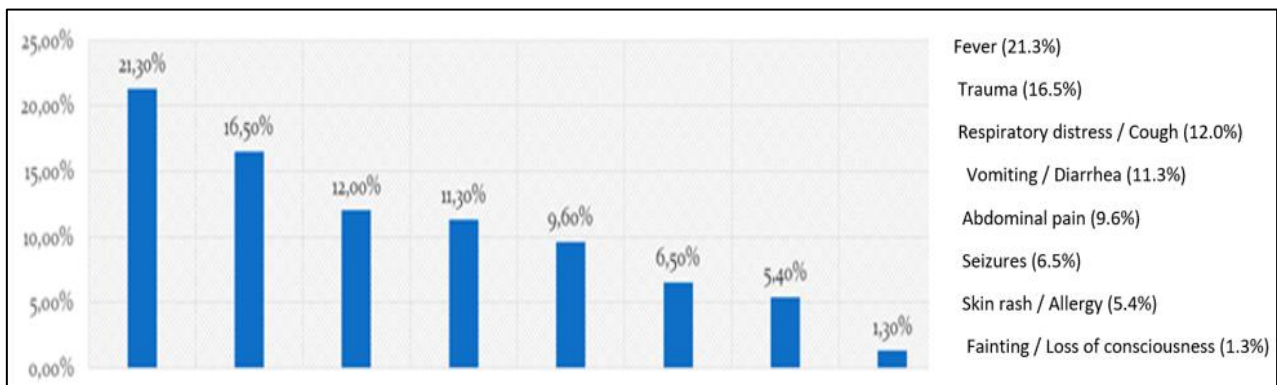


Figure 3: Distribution of the main reasons for pediatric emergency room visits

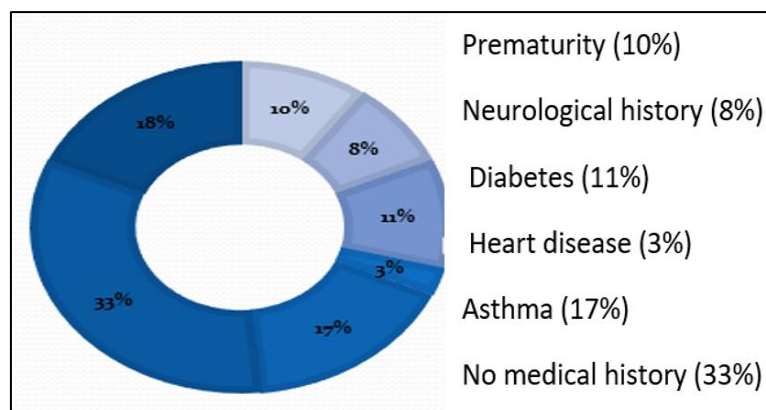


Figure 4: Distribution of medical histories among children seen by doctors

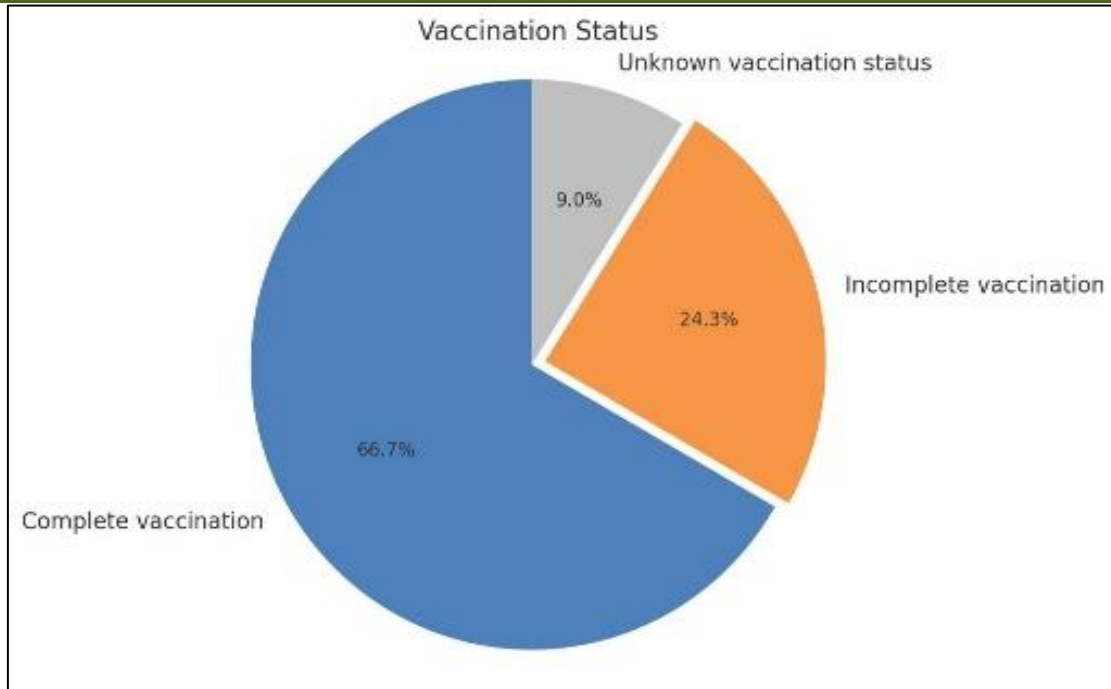


Figure 5: Vaccination status of patients consulting at the pediatric emergency department

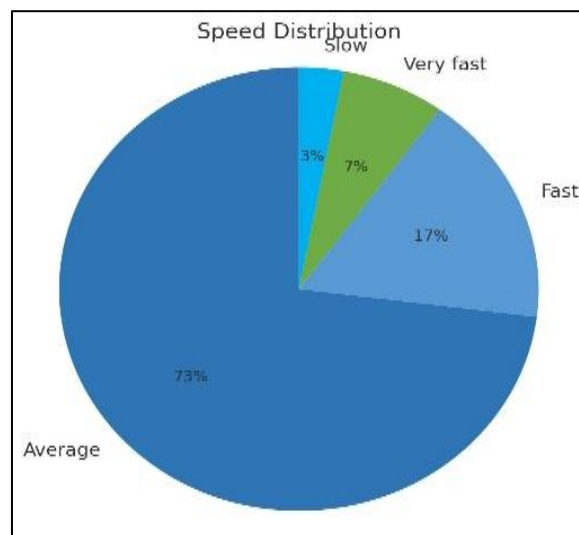


Figure 6: Waiting times in pediatric emergency departments

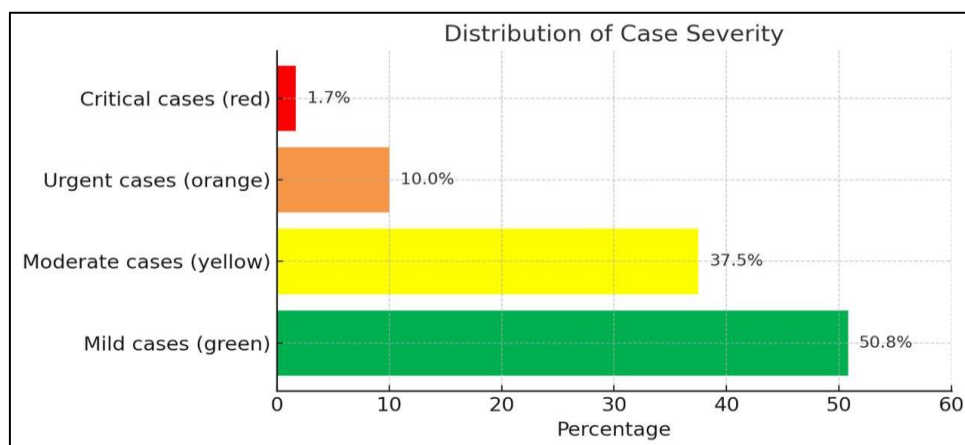


Figure 7: Distribution of patients according to initial triage in the emergency department

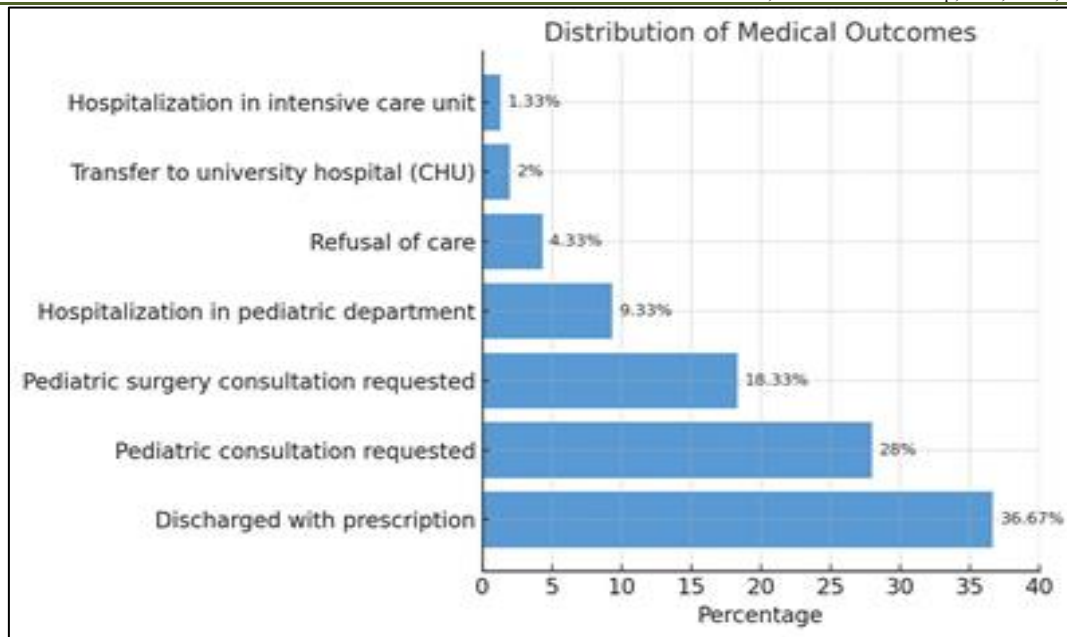


Figure 8: Management in pediatric emergency departments

DISCUSSION

Regarding the profile of the consultants, the average age of 3.6 years and the predominance of children under 5 years old confirm that this age group is the most vulnerable to infections and trauma, this observation is widely shared in the literature: several international studies report that nearly 60 to 70% of pediatric consultations concern preschool-aged children [10] this is explained by immune immaturity, high community exposure and parental concern which promotes recourse to the emergency department even for minor symptoms, in a study conducted in Chile in 2014 on more than 24,000 pediatric consultations, reports that 52% of the children admitted were preschool-aged [10] thus confirming the major weight of this age group in the activity of the emergency department.

Our data show an overrepresentation of fever and digestive disorders compared to some Moroccan series. For example, in a study conducted in Marrakech (2022), the proportion of reported digestive disorders was approximately 11% [11], significantly lower than ours. This difference can be explained by several factors: firstly, our study was conducted during the summer period, when a resurgence of gastroenteritis and dehydration is typically observed; secondly, the direct referral to the emergency room for sometimes benign digestive symptoms, particularly vomiting and diarrhea, is well explained by the percentage of benign cases (50.8%).

A study conducted in Rabat in 2016 showed that more than half of the patients (63%) required outpatient treatment, reflecting low clinical severity [12]. This aligns with our results: 36.67% of consultants left with a prescription, highlighting the importance of effective

triage to prioritize serious cases and the need to strengthen primary care structures to relieve pressure on emergency services.

Internationally, in Switzerland the study carried out between September 2019 and July 2020 showed that 58% of visits to pediatric emergency departments were of low severity, [13],

The study conducted in the United States between 2016 and 2020 found that triage errors were common in pediatric emergency department visits [14], highlighting the need for improvement in order to identify critical patients early and avoid under-triage errors; this aligns with our study.

CONCLUSION

Quick and easy access to the emergency department is not always an emergency, as our study showed that the majority of consultations involve non-critical cases (false alarms), but a proportion of children require hospitalization or specialist referral. Effective initial triage remains essential for the rapid identification of serious cases. Parental education on recognizing signs of severity and raising awareness of the importance of vaccination follow-up are priority areas for improving emergency pediatric care.

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