

## Review of 18 months of Activities in the Medical-surgical Emergency Department of the Ziniare Regional Hospital Center

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### ABSTRACT

**Introduction:** By ensuring early detection of acute illnesses and timely access to necessary care, organized emergency care systems save lives and amplify the impact of many other components of the health system.

**Objective:** The objective of our study was to take stock of 18 months of activities of the medical-surgical emergency department of the Ziniare regional hospital center from January 1, 2021 to June 30, 2022.

**Methods:** This was a retrospective study with a descriptive aim of patients admitted to the medical-surgical emergency department of the Ziniare regional hospital center from January 1, 2021 to June 30, 2021.

**Results:** We collected 2429 patients with a mean age of 38.27 years and a sex ratio of 1.65. The majority of patients resided outside the city of Ziniare and accounted for 53.3% of patients. The average length of stay in the emergency department was 1.88 days. There were 36.13% of people returning home, 31.85% of hospitalization. Traumatological pathologies were predominant in our series with a percentage of 22.8% of all diagnoses made, followed by infectious pathologies with a percentage of 17.6%. Digestive surgical pathologies accounted for 8.2% of cases. Cardiovascular diseases accounted for 10.2% of cases. Antibiotics are administered in 22.36%. Urgent surgical indications accounted for 24.86% of diagnoses.

**Conclusion:** The medical-surgical emergency department of the Ziniare Regional Hospital Center plays an important role in the care of patients in the Central Plateau region. A reorganization of the service, the strengthening of human resources and the improvement of the technical platform could optimize the performance of the service.

### Keywords

Activity report, Medical-surgical emergencies, Regional hospital.

### Introduction

Emergency care is an essential component of the health system, ensuring rapid and coordinated management of medical and surgical emergencies [1]. In developing countries, a large proportion of

morbidity remains linked to time-sensitive conditions [2]. The goal of an effective emergency medical system should be to provide universal emergency care accessible to all who need it [3].

In Burkina Faso, data on the activity of hospital emergency services are scarce, particularly in regional facilities. A study conducted in 1997 at the Yalgado Ouédraogo University Hospital reported a

predominance of infectious diseases, particularly gastroenteritis, malaria and acute pneumonia [4].

The recently established Ziniaré Regional Hospital Centre (CHR-Z) has a medical and surgical emergency department whose activities warrant evaluation. The objective of this study is to assess the first eighteen months of activity of this department, from 1 January 2021 to 30 June 2022.

### Patients and Method

This was a retrospective descriptive study conducted in the medical-surgical emergency department of the Ziniaré Regional Hospital Centre (CHR-Z) over an 18-month period, from 1 January 2021 to 30 June 2022.

All patients admitted during this period were included, with the exception of gynaecological-obstetric and paediatric medical emergencies.

Data were collected from admission registers, hospitalisation records and surgical records, then analysed using Microsoft Excel 2016. The variables studied included sociodemographic characteristics, diagnoses, treatments, and outcomes of care.

The study complied with the ethical principles of confidentiality and anonymity, with prior authorisation from the management of the CHR-Z.

### Results

We collected data on 2,429 patients, 62.37% of whom were men, with a sex ratio of 1.65. The average age of patients was 38.27 years, +/- 20.82.

In terms of admission, 23.6% of patients came on their own, 36.2% were referred, 37.9% were evacuated, and 2.3% were transferred from hospital wards due to a deterioration in their condition. The monthly average number of patients was 134.9.

The peak in admissions was observed in May 2022 with 191 patients. The distribution of patients by month is shown in Figure 1.

The monthly distribution of admissions is shown in the following histogram:

The average length of stay in the emergency department was 1.88 days, with a minimum of 1 day and a maximum of 8 days. The most common reasons for discharge were recovery and transfer. Figure 2 shows the distribution of patients by reason for discharge from the emergency department.

In terms of diagnostic orientation, trauma conditions were generally predominant, accounting for 22.2% of all diagnoses, followed by infectious diseases, accounting for 17.2%. The distribution of patients according to diagnostic orientation is shown in Figure 3.

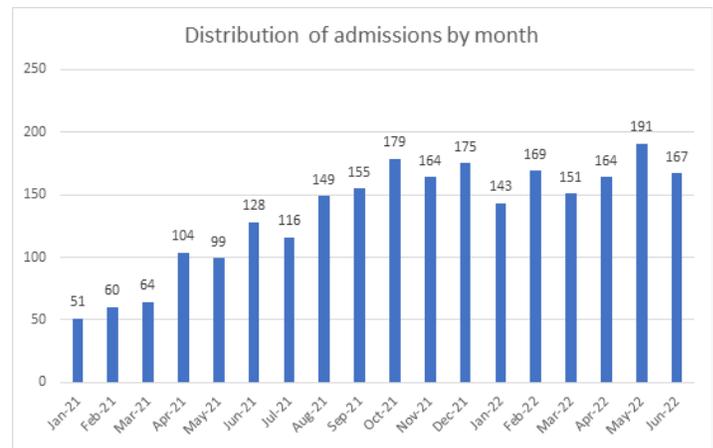


Figure 1: Distribution by month of admission.

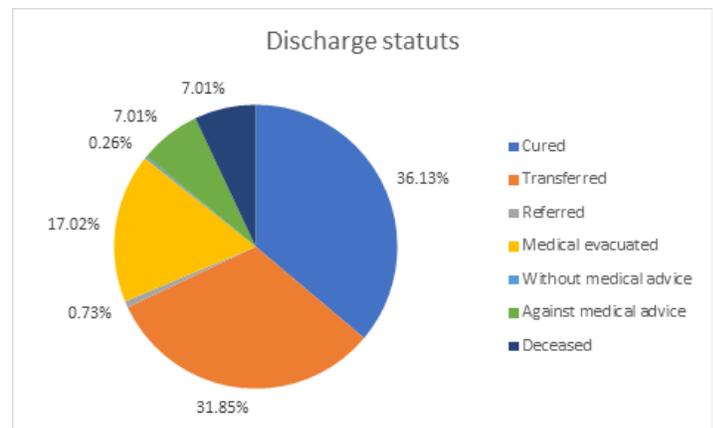


Figure 2: Distribution of patients according to mode of discharge from the emergency department.

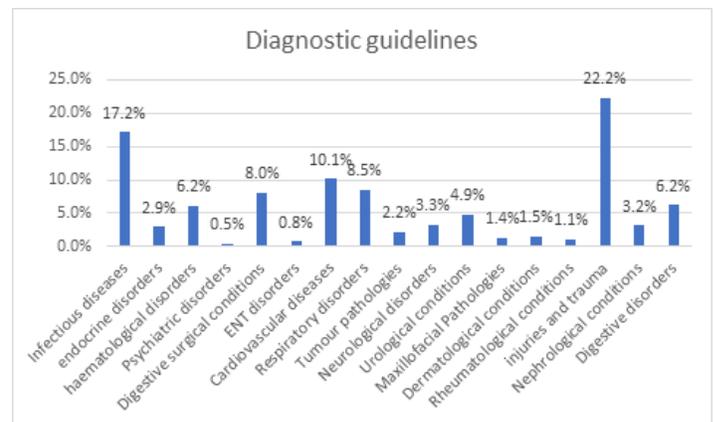


Figure 3: Distribution of patients according to diagnostic guidelines.

The main drugs administered were saline solutions (70.65%), analgesics/antipyretics (83.33%), antibiotics (22.36%) and tetanus serum (12.94%). It should be noted that some patients received several therapeutic classes at the same time.

### Surgical indications concerned 604 patients, as shown in Table 1:

Surgical Indications	Rate (%)
Orthopedic surgery	47,18
Laparotomy	25,54
Hernia repair	10,58
Appendectomy	7,10
Trim/Suture	9,6

**Table 1:** Distribution of patients according to surgical indications.

### Discussion

There is also the fact that patients were not classified according to the clinical classification of patients in the emergency department, which resulted in a lack of information about their clinical condition on arrival at the emergency department.

The average age in our series was 38.27 years, +/-20.82. Meda Z, et al. [5] found an average age of 33.19 years in a study conducted in 2022 in the surgical emergency department of the Sourou Sanou Hospital Centre. Our results are comparable to those of Abdoulhamidou, et al. [6] in a series in Bamako in 2020, which found an average age of 38.51 years.

These results could be explained by the fact that the young economically active population is the most exposed to trauma, given that traumatic conditions are predominant in our series.

In our series, the sex ratio was 1.65. This male predominance is found in a Malian series conducted by Abdoulhamidou, et al. [6], where the M/F sex ratio was 2.39. Male predominance was also found in a study conducted in Nigeria by Olusegun J, et al. in 2021, which found a sex ratio of 1.58 [7]. This male predominance could be explained by the fact that gynaecological and obstetric emergencies were not included in the study.

In our series, 23.6% of patients came from their homes, 74.1% were referred to the CHR/Z emergency department by a healthcare facility, and 2.3% were transferred from the CHR/Z inpatient wards following a deterioration in their condition. Our results are consistent with those of a Malian series conducted by Keita, et al. [8], which found a predominance of referrals in 63.5% of cases. However, our results contradict those found by Traoré, et al. [9] in 2002 in a study conducted at the CHU Yalgado OUEDRAOGO, which found that the majority of patients (50.8%) were self-referred. In France, Gouin, et al., in a study conducted at the Pau Hospital Centre in 2016 [10], found that 59.5% of patients came to the emergency department on their own initiative. This difference could be explained by the failure to comply with the healthcare pyramid in large urban areas in both Africa and the West.

In our study, the average length of stay was 1.88 days, or 45.12 hours, with extremes ranging from 1 to 8 days. Our results are comparable to those of Nana A. in Bobo in 2016, who found an average length of stay of 2 days [11]. Abdoulhamidou A, et al. [6] in Mali found an average length of stay of 63.59 hours (2.65 days) and a maximum length of stay of 45 days. Also in Mali, Mindzie M, et al. [12] in 2020 also found an average length of

stay of 63.59 hours (2.65 days). The length of stay in our context is linked to certain factors such as the severity of the patient's condition on arrival at the emergency department, the availability of beds downstream, the unavailability of certain additional tests at night, the difficulty of making transfers without the agreement of doctors from downstream departments who are absent at night, and the lack of oxygen in certain hospital wards, forcing patients requiring oxygen to remain in the emergency department even if they are stable.

In our study, 36.13% of patients were allowed to return home. This result is comparable to that of Mindzie, et al. [12] in Mali, who found that 30% returned home. These results differ slightly from those of Thomas, et al. [14] and Buyck, et al. [13] in France, who found that 42% and 41% of patients returned home, respectively. This could be justified by the fact that these were patients whose favourable progress after treatment was compatible with a return home. These patients did not necessarily require hospitalisation, and for those whose further care required specialist advice, their discharge was decided by mutual agreement with the specialist department.

In our series, 31.85% were admitted to hospital. Our result is similar to that of Mindzie, et al. [12] in Mali, who found a hospitalisation rate of 35.6%, and Thomas, et al. [14] in France, who found a hospitalisation rate of 35.5%. Nana A, et al. in Bobo Dioulasso in 216 [11] found a hospitalisation rate of 24.32%, slightly below our results.

Our results differ from those of Keita, et al. [8] in Mali, who found a hospitalisation rate of 79%. This difference can be explained by the fact that this study only concerned patients classified as CCMU3 on arrival at the emergency department.

In our study, traumatic injuries accounted for 22.8% of all diagnoses, including head injuries in 25.8% of cases, closed limb fractures in 23.6% of cases, and open limb fractures in 18.6% of cases. There were also wounds, dislocations, and chest and/or abdominal trauma, accounting for 8.3%, 6.9% and 6.4% of cases, respectively. Kanassoua, et al. [14] in Togo in 2011 found that 24.24% of emergency admissions were related to trauma, including 34.73% for severe abdominal and chest contusions, 20.96% for head injuries, and 27% for leg fractures. These results are comparable to those we found. In France, Thomas, et al. [14] found a predominance of trauma with a percentage of 35%. Buyck, et al. [13] found a percentage of 37%. In view of these results, we can say that the increase in the number of traumatic emergencies, the severity of the injuries presented by patients and the inadequacy of health systems require the implementation of urgent measures such as the creation of trauma centres.

Infectious diseases accounted for 17.6% of diagnoses, with severe malaria and COVID-19 being the most common, at 29.0% and 27.4% respectively. Our results are lower than those found by Traoré, et al. [9], who found a predominance of infectious diseases, accounting for 43.5% of diagnoses, including 21.3% infectious

gastroenteritis and 12.1% severe malaria. Mossolo, et al. [15] found that malaria was the main reason for admission in 28.5% of cases in a Congolese series in 2016. The differences can be explained by the fact that these two studies were conducted in exclusive medical emergency departments. In some health facilities, medical emergencies are separated from surgical emergencies.

In our study, most of the solutions were administered with a view to maintaining peripheral venous access. It is worth recalling here the SFAR-SFMU 2021 recommendations [16] concerning vascular filling: "vascular filling is used to restore blood volume and correct hypovolaemia. However, the implementation of vascular filling needs to be defined in terms of both the quality and quantity of the solutions to be administered, as well as how it is to be carried out. "Vascular filling should therefore be limited to situations of acute circulatory failure. 83.33% of patients received analgesics during their visit to the emergency department. This high percentage can be explained by the predominance of traumatic pathologies, which are highly allogenic. This figure is comparable to foreign studies, particularly American studies, which found percentages ranging from 50% to 93% [17,18], tending to show a better quality of pain management in these countries. Niamke [19] in Côte d'Ivoire found that 50% of patients had received analgesics. This result is lower than ours, and this difference could be explained by the fact that his study excluded trauma emergencies.

## Conclusion

At the end of our study reviewing 18 months of activity in the medical and surgical emergency department at the Ziniaré Regional Hospital Centre, we found that the average length of stay was 1.88 days. Trauma, whether minor or serious, remains the department's main activity, accounting for 22.8% of diagnoses, closely followed by infectious diseases, accounting for 17.6% of cases. Whether orthopaedic or visceral, surgical conditions requiring urgent treatment in the operating theatre accounted for nearly a quarter of diagnoses.

With a view to optimising the functioning of the CHR/Z's medical and surgical emergency department, various measures could be taken, namely reorganising the department with the effective implementation of a triage system at reception, equipping it with resuscitation equipment, and opening an intensive care unit.

It should be noted that many changes have been made in recent years with the arrival of an emergency physician at the CHR/Z: development of treatment protocols, patient triage forms, standard emergency files and standard exceptional health situation files. However, their insufficient number and high mobility are another problem that must be resolved.

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