

Epidemiological Profile of Deaths Recorded at the Emergency Department of the Sourou Sanou University Hospital in Bobo-Dioulasso

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Abstract

The aim of this study was to describe the epidemiology of deaths in the Emergency Department of the Sourou Sanou University Hospital in Bobo-Dioulasso, Burkina Faso. **Methodology:** This was a prospective, cross-sectional, observational study with a descriptive aim, conducted over a six-month period from 1 January to 30 June 2024. The study took place in the emergency department of the Sourou Sanou University Hospital in Bobo-Dioulasso and covered all patients admitted to and who died in the department. **Results:** We compiled 403 case records during the study period from a total of 3963 admitted patients, representing a prevalence of 10.17%. The mean age was 58.6 years $\pm$ 18.8 [15 - 95], with a sex ratio of 1.4. Altered level of consciousness was the most common reason for presentation, accounting for 28.8% of cases, followed by febrile coma and dyspnoea in 18.9% and 12.4% of cases, respectively. A medical history was present in 57.6% of cases, with hypertension in 54.8%, followed by diabetes and heart disease in 14.2% and 10.4% of cases respectively. The mean length of stay was 33 hours $\pm$ 44 hours [0 - 360], and the mean time of death was 11 hours $\pm$ 7 hours [0 - 23]. **Conclusion:** The mortality rate in the medical A & E department at CHUSS was 10.17%; altered level of consciousness was the main reason for admission, and hypertension was frequently found in the patient's medical history.

Keywords

Death, Medical Emergencies

1. Introduction

Emergency departments (EDs), which serve as the public face of hospitals, are at the forefront of the healthcare system. The legally defined mission of emergency departments is “to admit, without discrimination, 24 hours a day, every day of the year, any person presenting in an emergency situation, including psychiatric emergencies, and to provide care, particularly in cases of distress and life-threatening emergencies” [1].

An emergency department must have adequate technical facilities and well-trained staff, which are essential for the initial and urgent management of visceral failure.

The mortality rate in the emergency department reflects the hospital’s performance.

In France, 75% of deaths occur in a healthcare facility and 7.5% of these deaths occur in A & E, with medical disciplines contributing more to deaths than surgery [2].

In Africa, the mortality rate in the emergency department was 2.6% and in intensive care 7.8% in the A & E and intensive care units of two hospitals in Yaoundé [3]. The mortality rate for respiratory medical emergencies reached 17.68% in the medical A & E department of the Souro Sanou Hospital Centre in Burkina Faso [4].

Mortality in the emergency department depends on numerous factors: patient age, associated comorbidities, previous health status, diagnosis and severity on admission, the number and duration of organ failures, length of hospital stay, and the technical facilities available.

The aim of our study is to determine the epidemiological profile of deaths recorded in the emergency department of the Souro Sanou University Hospital in Bobo-Dioulasso, Burkina Faso.

2. Methodology

This was a prospective, cross-sectional, observational study with a descriptive focus, conducted over six (6) months, from 1 January to 30 June 2024. The study took place in the Medical Emergency Department of the Souro Sanou University Hospital and included all patients admitted to the department following treatment.

We included all patients who had died and had a complete medical record. Excluded from our study were patients who died prior to treatment, deaths confirmed on arrival, and deaths in the Psychiatric Department.

The variables studied included sociodemographic characteristics, medical and surgical history, and dietary habits and lifestyle.

The data were collected, entered using Microsoft Word 2013, and then analyzed using SPSS version 23.

3. Results

A total of 463 deaths were recorded, of which 403 cases were included in our study

during the study period out of 3963 admitted patients, representing a prevalence of 10.17%.

The mean age of our study population was 58.6 years $\pm$ 18.8 (15 to 95); patients over 60 years of age accounted for half of the study population.

Male patients accounted for 58.6% of our sample, representing a sex ratio of 1.4. The average time of admission was 13.12 hours $\pm$ 6.36; more than half of the patients (62%) were admitted between the afternoon and the first half of the night. Farmers/livestock breeders accounted for 23.8% of deaths.

The main reason for consultation, dominated by altered consciousness, accounted for 29.8% of cases, followed by febrile coma (18.9%) and dyspnoea (12.4%).

The main reasons for seeking medical care are summarized in **Figure 1**.

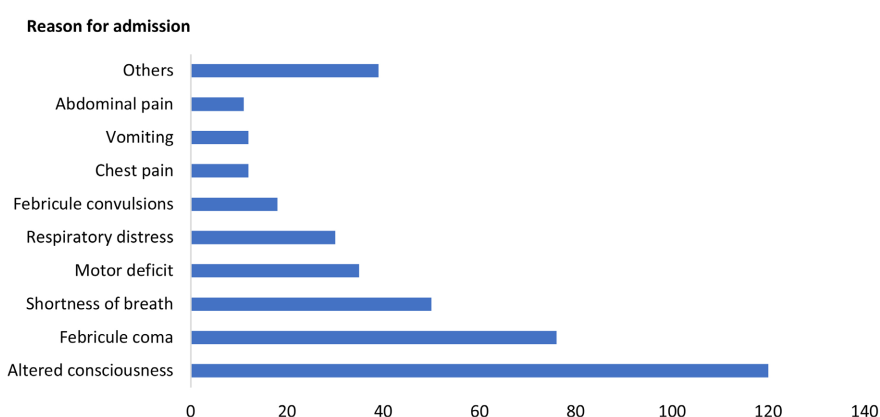


Figure 1. Reason for admission.

Seventy-three per cent of patients were referred, 65.3% from Medical Centers with Surgical Units (CMA), of which 40.5% were transfers to the CMA in DO.

A medical history was present in 57.6% of cases (hypertension in 54.8% of cases, diabetes in 14.2% of cases and heart disease in 10.4% of case). **Table 1** summarizes the medical history.

Table 1. Medical history.

Variable		Number	Percentage
Medical history	Medical	232	57.6
	Surgical	5	1.2
	Obstetrics and Gynecology	1	0.2
	No history of ATCD	165	40.9
Medical ATCD	Hypertension	154	54.8
	Diabetes	40	14.2
	Heart disease	29	10.4
	CKD	11	03.9
	Stroke	11	03.9
	Other	36	12.8

Infectious causes were found in 44.9% of cases, followed by neurological and cardiovascular causes at 21.3% and 9.4% respectively.

The average length of hospital stay was 33 hours $\pm$ 44 hours [0 - 360], and the average time of death was 11 hours $\pm$ 7 hours [0 - 23]. Patients who died at night accounted for 59.6% of cases. Very early deaths (deaths occurring within 12 hours of admission) accounted for 38%, and deaths (occurring between 12 and 24 hours after admission) accounted for 22.6%. Approximately 58% of deaths involved patients aged under 65.

The intensive care unit recorded 35% of deaths, followed by the observation unit with 24.8% of cases. April was the month with the highest number of recorded deaths, at 21.1%. The leading causes of death are summarized in **Figure 2**.

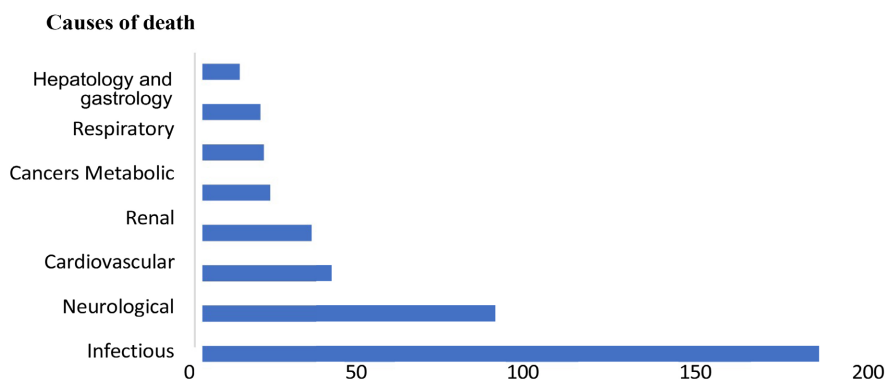


Figure 2. Causes of death.

4. Discussions

The study encountered difficulties during data collection, specifically due to incomplete medical records.

During the study period, of the 3963 patients admitted to the A & E department, 403 died, representing a mortality rate of 10.17%. This result could be explained by delays in seeking medical attention in urban areas, delays in initial care at community health centers and referral centers on the one hand, and delays in decision-making and transfer to tertiary healthcare facilities on the other. To this must be added the onset of the 2024 heatwave. This prevalence is significantly higher than that reported by Eve Aveline [5] from Avignon Hospital in France; Leila DEB-ONO in Rabat, Morocco, had reported a higher frequency than that in ours [6]; Anaëlle Baticle *et al.* from the Adult Emergency Department, Hôpital Nord, Saint-Étienne, France, reported a mortality rate of 0.15% [7]. The mean age of our study population was 58.6 years $\pm$ 18.8 [15 - 95], Metogo in Cameroon; Bhourri I. *et al.* in Tunis and Ducrocq J. *et al.* from the Centre Hospitalier University Arras in France reported mean ages of 42 $\pm$ 2.8; 71.2 years and 80 years respectively, higher than that of our study [3] [8] [9].

The most common reason for admission was altered level of consciousness, accounting for 29.8% of cases, followed by febrile coma and dyspnoea, accounting for 18.9% and 12.4% of cases respectively. Metogo in Cameroon reported results signif-

icantly higher than ours, with 68.1% of cases involving altered level of consciousness [3], and 23.9% of cases involving neurological conditions in Madagascar [10].

Hypertension was the most common pre-existing condition, found in 54.8% of cases, followed by diabetes in 14.2% of cases. This result is similar to that reported by Bhouri I. *et al.*, with hypertension in 58% of cases and diabetes in 40% of cases [8]. Razafindrabekoto. L D E also found 53.5% with hypertension and 38.4% with diabetes [10]. The average time from admission to death was 11 hours $\pm$ 7 hours [0 - 23], and 59.6% of deaths occurred between 6:00 pm and 6:00 am; this figure is lower than the 76.8% reported by J. F. Rafamatantsoa *et al.* [11].

Very early deaths (deaths occurring within the first 12 hours of admission) and early deaths (deaths occurring between 12 and 24 hours after admission) accounted for 60.5%, a result comparable to that reported by Ève Aveline of Avignon Hospital in France, with 71.6% of cases [5].

Infectious causes accounted for 44.9% of deaths, followed by neurological and cardiovascular causes at 21.3% and 9.4% of cases, respectively.

Our results are higher than those of Anaëlle Baticle *et al.*, who reported 30% of deaths due to infectious causes in their series [7]. In the study by Metogo Mben-gono *et al.*, severe anemia accounted for 19.1% of deaths in the medical A & E department [3].

5. Conclusion

Mortality in the CHUSS A & E department remains high; altered level of consciousness is the main reason for admission, and alcohol-induced intoxication is the most common pre-existing medical condition. Infectious causes are associated with mortality.

Author Contributions

- **Conceptualization:** Osée DILLAH, Omar DIALLO, Ousmane BERTE.
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 - **Writing—original draft:** Osée DILLAH, Omar DIALLO, Ousmane BERTE
 - **Writing—review & editing:** Jean de Dieu KPODA, M. Yacine ABDOU, Yousseuf I. TRAORE, S. Franck LONDOLA, Ousmane P. BELEM, Sanou SALIA, Saidatou OUEDRAOGO, OUEDRAOGO S. Macaire
- All authors have read and approved the final manuscript.

Conflicts of Interest

The authors declare no conflicts of interest related to this article.

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Abbreviations

CHU:	Centre Hospitalier Universitaire (University Teaching Hospital)
CHUSS:	Souro Sanou University Teaching Hospital
CMA:	Medical Centers with Surgical Units
CKD:	Chronic Kidney Disease