EAS Journal of Anaesthesiology and Critical Care
Abbreviated Key Title: EAS J Anesthesiol Crit Care
ISSN: 2663-094X (Print) & ISSN: 2663-676X (Online)
Published By East African Scholars Publisher, Kenya

OPEN ACCESS

Volume-8 | Issue-2 | Mar-Apr-2026 | DOI: https://doi.org/10.36349/easjacc.2026.v08i02.005

Original Research Article

Management of Patients with Severe Trauma in the Trauma Emergency Department: Epidemiological, Clinical, and Outcome Aspects at the Ignace Deen University Hospital in Conakry

Bah ML[1*], Diallo TS[2], Bah AT[1], Condé MS[1], Kourouma M[1], Diallo TM[1]

[1]Department of Orthopedics and Traumatology at Ignace Deen National Hospital
[2]Department of Anesthesiology and Critical Care at Donka National Hospital

Article History
Received: 11.02.2026
Accepted: 19.03.2026
Published: 23.03.2026

Journal homepage:
https://www.easpublisher.com

Quick Response Code

Abstract: ***Introduction*:** Trauma is a major public health problem worldwide; the disability-adjusted life years (DALYs) attributable to it have been estimated at 248 million. A patient with severe trauma is a victim of violent trauma, regardless of the apparent injuries. Trauma accounts for 8% of global mortality. ***Methods*:** This was a one-year retrospective descriptive study conducted from January 1, 2024, to December 31, 2024. ***Results*:** Patients with severe trauma accounted for 41.8% of emergency department admissions during the study period. Young men were the most affected, with a mean age of 25.6 ± 16 years and a sex ratio of 7.7 in favor of males. The primary cause was acute abdominal trauma (81.9%). The mean time to admission was 88.9 ± 64.5 hours. The mean Glasgow Coma Scale score was 7.9 ± 1.9. The mean ISS score was 29.8 ± 7.5. Lesions on brain CT scans were predominantly edematous-hemorrhagic contusions in 66.7% of cases. Mortality was 26.7%, caused by severe hypoxemia in 50% of cases. ***Conclusion*:** Severe trauma is responsible for high morbidity and mortality. An effective care network could improve its impact on our society.

Keywords: Severe Trauma, Emergency, Ignace Deen.

INTRODUCTION

Trauma is a major public health problem worldwide, causing psychological, physical, and economic consequences at both the individual and community levels. The Injury Severity Score (ISS) classifies a patient as severely injured if the ISS is ≥16. A severely injured patient is a trauma victim who presents with at least one life-threatening and/or functionally compromising injury, or whose mechanism and/or severity of injury suggests that such injuries may exist (College of Intensive Care and Resuscitation Physicians). This definition helps prevent delays in care and errors in triage that could adversely affect the patient's subsequent course (Yeguiayan JM and Freysz M, 2009).

According to the WHO and data from the Global Burden of Disease (GBD) study in 2021, disability-adjusted life years (DALYs) attributable to injuries were estimated at approximately 248 million and accounted for about 8% of global mortality (Ferrari AJ *et al*., 2024). Its share of mortality is 1.7 times higher than that caused by HIV/AIDS, tuberculosis, and malaria (World Health Organization, 2014). While the causes are highly varied, road traffic accidents (RTAs) and falls are among the leading causes. Trauma particularly affects young adults and is the leading cause of death among those under 30 when related to road traffic accidents (World Health Organization). The incidence of severe trauma in African hospitals is high but remains underestimated due to a limited epidemiological surveillance system. Traffic accidents account for 60 to 80% of emergency department admissions for severe trauma in sub-Saharan Africa (Chalya PL *et al*., 2012). Improved care could prevent up to 30% of deaths (Yeguiayan JM and Freysz M, 2009). In emergency departments, these patients exhibit high morbidity and mortality rates due to delays in care, the lack of medical transport, and a shortage of modern equipment such as CT scanners and advanced monitoring devices (Traoré F *et al*., 2019). The objective of this study was to describe the epidemiological, clinical, and clinical course characteristics of patients with severe trauma in the trauma emergency department at Ignace Deen National Hospital.

***Corresponding Author:** Bah ML
Department of Orthopedics and Traumatology at Ignace Deen National Hospital

PATIENTS AND METHODS

This was a retrospective descriptive study conducted in the trauma emergency department at Ignace-Deen National Hospital over a one-year period, from January 1, 2024, to December 31, 2024. We included in the study all medical records of patients with severe trauma, regardless of age, sex, or referral source, who were admitted to the trauma emergency department. Medical records of patients with severe trauma who were admitted and died within 6 hours, as well as incomplete medical records of patients with severe trauma, were excluded from the study.

The parameters analyzed included:

- Epidemiological data: age, sex, circumstances of the injury.
- Clinical data: type and location of injuries, severity score at admission.
- Paraclinical data: laboratory tests and imaging studies performed.
- Therapeutic data: resuscitation measures, surgical procedures, treatments administered.
- Outcome data: complications, length of stay, patient outcome (improvement, death, sequelae).

The data were entered using Microsoft Word and Excel, then analyzed using EpiData 3.1. The results are presented as percentages for qualitative variables and as means ± standard deviation for quantitative variables.

RESULTS

During the study period, we recorded a total of 251 patients admitted to the emergency department, including 105 cases of severe trauma, representing a relative frequency of 41.8%. The mean age of the patients was 25.64 ± 16.09 years. The sex ratio was 7.7, with a predominance of males. Traffic accidents were the leading cause of trauma, accounting for 81.8% of cases. The mean time to admission for patients with severe trauma was 88.9 ± 64.5 hours. (See Table I).

Table I: Distribution of patients according to socio-epidemiological characteristics

Variables	Effective	%
Sex		
Masculine	93	88,6
Feminine	12	11,4
Verage Age	25.64 years ± 16.09 years	
Cause	86	81,8
RTA	5	4,8
Assault	14	13,3
Fall		
Time to admission		
< 24 hours	1	0,9
24 - 48hours	11	10,5
48-72hours	32	30,5
72-96hours	28	26,7
≥ 96 hours	33	31,4

RTA: road traffic accident

In our study, only 25.7% of patients were transported by ambulance from the scene of the accident to the A&E department. According to the clinical examination, the mean Glasgow Coma Scale score was 7.9 ± 1.9, ranging from 3 to 11, and 51.4% of patients had a score < 9. Pupils were normal in 41% of cases, with 40% presenting bilateral miosis and 15.2% anisocoria. The mean respiratory rate was 23.8 breaths/min, with 59.1% of patients having a rate > 20 breaths/min. The mean systolic blood pressure was 122 mmHg, with 4.8% of patients having a systolic blood pressure < 90 mmHg.

On imaging, cerebral CT scans showed that contusions with oedema and haemorrhage were the predominant findings in 66.7% of cases.

The mean ISS score was 29.8 ± 7.5, ranging from 25 to 75. The majority of patients (92.4%, or 97 cases) had a score between 25 and 40. (See Table II)

Table II: Breakdown of patients with severe trauma by ISS score

ISS	Effective (n=105)	%
1-25	0	0
25-40	97	92,4
≥40	8	7,6
Total	**105**	**100**

With regard to treatment, all patients (100%) received analgesics, fluid replacement and antibiotic therapy. Mannitol was administered to 95.2% of patients. Anticonvulsants were used in 52.4% of cases and packed red blood cell transfusions in 47.6%.

Vasoactive drugs and haemostatic agents were used in 19% of cases, and chest drainage in 16.2%.

The mortality rate was 26.7%, with severe hypoxaemia being the main cause of death (50% of cases). (See Figure 1)

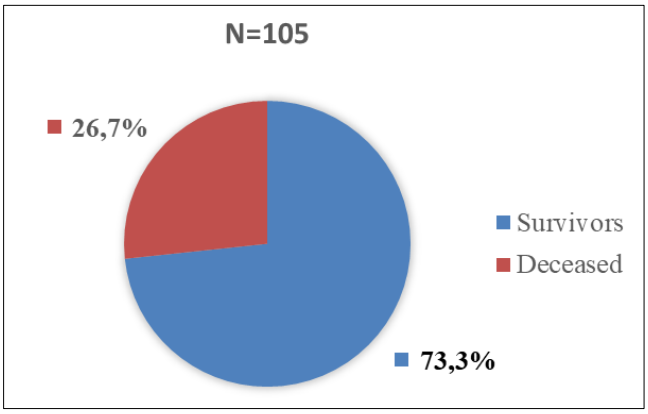

Figure 1: Breakdown of patients with severe trauma by mortality rate

DISCUSSION

Severe trauma is a major cause of admission to A&E departments in African countries, due to the high prevalence of road traffic accidents, delays in treatment and limited medical infrastructure (Ferrari AJ *et al*., 2024). This study, conducted at the Ignace Deen University Hospital in Conakry, highlights the epidemiological, clinical and clinical course aspects of patients with severe trauma admitted to the emergency department.

The prevalence of severe trauma in our study was 48.1% among emergency department admissions. This figure is higher than the 38.8% reported by A. Matsanga *et al*., in Gabon in 2022 (Matsanga A *et al*., 2022) and the 37.1% found by Chalya *et al.,* in 2011 in Tanzania (Chalya PL *et al*., 2011). This difference could be explained by the relatively small number of patients hospitalised during the study period, as well as by the limited duration of the study.

The mean age of the patients was 25.6 ± 16 years, with a clear predominance of males (88.6%) and a sex ratio of 7.7. These data are comparable to those observed in Togo by Tomta K *et al*., in 2011 and in Tanzania, where the mean age was 37.5 ± 17 years with a sex ratio of 4.3 and a median age of 27 years with a sex ratio of 5.5 (Tomta K *et al*., 2016; Chalya PL *et al*., 2011). These results confirm the literature data describing trauma as a condition primarily affecting young adult males (Yeguiayan JM *et al*., 2012). This predominance could be explained by the high involvement of young men in socio-professional activities and their greater exposure to high-risk situations.

Road traffic accidents were the leading cause of severe trauma, accounting for 81.9% of cases in our study. This finding is similar to those reported in the Republic of the Congo by C.M. Mpoy Emy Monkessa *et al*., in 2022 (84.3%) and in Tunisia by Jaziri Salma *et al*., in 2024 (89.4%) (Mpoy Emy Monkessa CM *et al*., 2022; Jaziri S *et al*., 2024). This high proportion could be linked to the poor condition of roads, failure to comply with road safety rules, the presence of non-functional traffic lights, the absence of speed limit signs, and poor vehicle maintenance. The absence of safety features such as seatbelts and functional airbags in vehicles, as well as the failure of motorcyclists to wear helmets, are also factors contributing to the occurrence and severity of accidents.

The average time to admission to the intensive care unit was 88.9±64.5 hours, with 30.5% of patients admitted between 48 and 72 hours after the injury. This delay remains lengthy and contrasts with international guidelines, which recommend rapid management of patients with severe trauma (Nathens AB *et al*., 2004). In North America, for example, victims are generally treated within 60 minutes of the injury, which significantly improves their prognosis (Kauvar DS and Wade CE, 2018; Guarino G *et al.,* 2019). In our context, this delay could be explained by the lack of an organised pre-hospital emergency system, by the fact that victims are often transported by witnesses to the nearest healthcare facility, and by the fact that some patients come from regions far from Conakry, thus resulting in a secondary admission process.

In this study, only 25.7% of patients received medical transport, highlighting the inadequacy of specialist emergency services. A similar finding was reported in Togo, where only 15% of patients were transported by a fully equipped ambulance (Tomta K *et*

al., 2016). In sub-Saharan Africa, the scarcity of policy programmes and public-private partnerships aimed at establishing facilities capable of providing advanced pre-hospital care (Advanced Trauma Life Support – ATLS) is an aggravating factor. The lack of adequate pre-hospital care contributes to the occurrence or worsening of secondary injuries (Kobusingye OC *et al*., 2005). Indeed, a longer delay between the onset of trauma and hospital admission is associated with an increase in length of stay and a poorer prognosis (Kauvar DS and Wade CE, 2018; Nathens AB *et al*., 2004). According to some studies, every 10-minute delay increases the probability of death by 0.4%.

Clinically, the presentation was characterised by impaired consciousness in all patients. More than half of the patients (51.4%) had a Glasgow Coma Scale score of ≤8, reflecting the severity of their head injuries. These results confirm the prevalence of severe head injuries reported in several African and European studies (Stocchetti N *et al*., 2017). Neurological signs such as anisocoria and mydriasis were also observed, these being recognised as indicators of a poor prognosis. Comparable results were reported by Bouaré KD in 2012 in Mali and the Republic of the Congo, where a Glasgow Coma Scale score of ≤8 was observed in 46.7% and 47.2% of cases respectively (Bouaré KD, 2012; Mpoy Emy Monkessa CM *et al*., 2021). This situation could be explained by the fact that patients are initially admitted to medical-surgical A&E departments for the management of haemodynamic or respiratory distress before being transferred to intensive care due to persistent impaired consciousness or the need for respiratory or circulatory resuscitation.

Analysis of the injuries revealed a predominance of head and brain injuries, found in 98.1% of patients, particularly oedematous-haemorrhagic contusions (66.7%). Chest injuries also accounted for a significant proportion (37.1%), mainly pulmonary contusions (18.1%). These results are similar to those reported in Gabon and by F. Alberdi *et al*., in 2014 in Spain, where a predominance of cranial (66.15% and 47%) and thoracic (14.61% and 35%) injuries was observed (Mpoy Emy Monkessa CM *et al*., 2022; Alberdi F *et al*., 2014). This injury profile may be linked to the rise in road traffic accidents in a context where motorists often drive without seatbelts in vehicles lacking functional airbags, whilst motorcyclists frequently ride without helmets or protective gear.

The mean Injury Severity Score (ISS) in our study was 29.8 ± 7.5, and the majority of patients (91.4%) had an ISS between 24 and 40, indicating severe injury with a significant risk to life. These results are comparable to those reported in Togo and by Bardenheuer *et al*., in 2000 in Germany, with 29.01 ± 13.19 and 22.2 ± 13.1 respectively (Tomta K *et al*., 2016; Bardenheuer M *et al*., 2000).

Finally, the mortality rate observed in our study was 26.7%. This rate is lower than the 38.8% reported in the Republic of the Congo but higher than the 23% rate in the FIRST study (Yeguiayan JM *et al*., 2012). This variation could be explained by the absence of an organised network for the management of severely injured patients, resulting in non-medical transport of victims. The clinical profile on admission, dominated by severe head injuries, as well as delays in treatment, could also contribute to this mortality.

Severe hypoxaemia was the leading cause of death (50%), which is recognised as a major factor in mortality among patients with head or chest injuries (Traoré F *et al.,* 2019). The high proportion of severe head injuries in our patient population, combined with the presence of chest injuries and the low proportion of intubated and ventilated patients, may explain the frequency of these cases of severe hypoxaemia. These findings highlight the importance of early and appropriate respiratory management to improve the prognosis of patients with severe trauma.

CONCLUSION

Our study highlights a high prevalence of severe trauma in the A&E department, with young men accounting for the majority of cases and road traffic accidents being the leading cause. Care remains limited by the lack of medical transport, a shortage of equipment and a high mortality rate. Efforts must be made to improve pre-hospital emergency care and optimise treatment strategies in A&E departments.

REFERENCES

- Alberdi, F., García, I., Atutxa, L., & Zabarte, M. (2014). Epidemiology of severe trauma. Medicina Intensiva (English Edition), 38(9), 580–588. https://doi.org/10.1016/j.medine.2014.06.002
- Bardenheuer, M., Obertacke, U., & Waydhas, C. (2000). Epidemiology of the severely injured patient: a prospective assessment of preclinical and clinical management. AG Polytrauma DGU, 355-363.
- Bouare, K. D. (2012). Mortality and morbidity among patients with severe head trauma in the intensive care unit at Gabriel Touré University Hospital [thesis]. Bamako: University of Science, Technology and Engineering, Bamako.
- Chalya, P. L., et al. (2011). Trauma admissions to the intensive care unit at a reference hospital in Northwestern Tanzania. *Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine*, 19(1), 61. https://doi.org/10.1186/1757-7241-19-61
- Chalya, P. L., et al. (2012). Injury characteristics and outcome of road traffic crash victims at Bugando Medical Centre in Northwestern Tanzania. Journal of Trauma Management & Outcomes, 6(1), 1. https://doi.org/10.1186/1752-2897-6-1

- College of Intensive Care and Resuscitation Teachers. Severe trauma. In: Intensive Care, Resuscitation, Emergency Medicine and Acute Organ Failure. 7th ed. Paris: Elsevier Masson; (College Guidelines).
- Ferrari, A. J., et al. (2024). Global incidence, prevalence, years lived with disability (YLDs), disability-adjusted life-years (DALYs), and healthy life expectancy (HALE) for 371 diseases and injuries in 204 countries and territories and 811 subnational locations, 1990–2021: a systematic analysis for the Global Burden of Disease Study 2021. Lancet, 403(10440), 2133-2161.
- Guarino, G., Giuseppe, G., Antonio, M., & Maurizio, T. (2019). The golden hour and the management of polytrauma: the experience of Salento's up-and-coming trauma centre. Euro-Mediterranean Biomedical Journal, 14(19), 80–84. https://doi.org/10.3269/1970-5492.2019.14.19
- Jaziri, S., Kadour, A., & Ghallebi, W. (2024). Initial management of severely traumatised patients in a Tunisian regional hospital. Maghreb Journal of Anaesthesia, Resuscitation and Emergency Medicine.
- Kauvar, D. S., & Wade, C. E. (2018). The epidemiology and modern management of traumatic haemorrhage: US and international perspectives. Critical Care, 22(1), 1–8.
- Kobusingye, O. C., Hyder, A. A., Bishai, D., Hicks, E. R., Mock, C., & Joshipura, M. (2005). Emergency medical systems in low- and middle-income countries: recommendations for action. Bulletin of the World Health Organization, 83(8), 626–631.
- Matsanga, A., et al. (2022). Management of critically injured patients in the intensive care unit at Owendo University Hospital, Gabon. Journal of Anaesthesia, Resuscitation, Emergency Medicine and Toxicology, 14(1), 28–31.
- Mpoy Emy Monkessa, C. M., et al. (2021). Mortality among adult patients with severe trauma in the general intensive care unit at Brazzaville University Hospital, Republic of the Congo. Journal of International Anesthesia and Medical Clinics, 9(2), 41–48. https://doi.org/10.11648/j.ijacm.20210902.15
- Mpoy Emy Monkessa, C. M., et al. (2022). Management of severe trauma in adults admitted to the general intensive care unit at Brazzaville University Hospital. Anaesthesia & Intensive Care, 8(3), 221–229. https://doi.org/10.1016/j.anrea.2022.01.018
- Nathens, A. B., Brunet, F. P., & Maier, R. V. (2004). Development of trauma systems and their effect on outcomes following injury. Lancet, 363, 1794–1801.
- Stocchetti, N., et al. (2017). Severe traumatic brain injury: targeted management and therapy. Intensive Care Medicine, 43(2), 189–201.
- Tomta, K., et al. (2016). Management of patients with multiple trauma in the intensive care unit at the Sylvanus Olympio University Hospital in Lomé (Togo). African Journal of Anaesthesia and Emergency Medicine, 21(2), 2–9.
- Traoré, F., et al. (2019). Epidemiological profile of trauma patients in intensive care in Mali. Mali Médical, 34(2), 123–130.
- World Health Organization. (2014). Injuries and violence: the facts 2014. Geneva: WHO. Available from: https://iris.who.int/handle/10665/149798
- World Health Organization. Road traffic injuries [Internet]. Geneva: WHO; [cited 2025 Mar 3]. Available from: https://www.who.int/fr/news-room/fact-sheets/detail/road-traffic-injuries
- Yeguiayan, J. M., & Freysz, M. (2009). Network for the management of severe trauma. In: Emergencies 2009. Paris: French Society of Emergency Medicine; pp. 781–792.
- Yeguiayan, J. M., et al. (2012). Current management of severely injured patients in France: initial findings from the FIRST study (French Intensive Care Recorded in Severe Trauma). Annales Françaises de Médecine d'Urgence, 2(3), 156–163. https://doi.org/10.1007/s13341-012-0181-1

Cite this article: Bah ML, Diallo TS, Bah AT, Condé MS, Kourouma M, Diallo TM (2026). Management of Patients with Severe Trauma in the Trauma Emergency Department: Epidemiological, Clinical, and Outcome Aspects at the Ignace Deen University Hospital in Conakry. *EAS J Anesthesiol Crit Care, 8*(2), 88-92.