

# CLINICAL AND EPIDEMIOLOGICAL PROFILE OF INCIDENTS RELATED TO EXTERNAL CAUSES OF THE MOBILE EMERGENCY CARE SERVICE (SAMU) IN ANÁPOLIS, GOIÁS

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## ABSTRACT

**Introduction:** Pre-hospital care services in Brazil were created to deal with the high demand for care in traumatic emergencies. Traumatic causes are the second leading cause of pre-hospital care, involving a variety of injuries that vary in severity and type of accident. Thus, the objective of this study was to characterize the clinical and epidemiological profile of incidents related to external causes in the SAMU (Mobile Emergency Care Service) of Anápolis, Goiás. **Methodology:** This descriptive, retrospective epidemiological study was conducted in Anápolis, Goiás, analyzing SAMU-192 incident reports from January to March 2023. It included all calls during this period, with data collected at the SAMU headquarters and analyzed statistically, after ethical approval and authorization for data use. **Results:** A total of 1,097 incidents were analyzed, the majority of which involved males aged between 19 and 45 years, originating on public roads, occurring in the afternoon and on weekends. Regarding the type of care, most were emergency calls, and the main cause of external causes were traffic accidents. **Conclusion:** These findings highlight the importance of pre-hospital care services and the need to improve the efficiency and triage of emergencies, helping to optimize the response to emergencies and reduce trauma-related mortality.

**Keywords:** Emergency Medical Services; External Causes; Epidemiological Studies; Pre-Hospital Services.

## INTRODUCTION

Pre-hospital care services emerged in Brazil in response to the high demand from the population for trauma emergencies. Thus, with the change in the population's morbidity and mortality profile, related to the increase in the number of

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victims from external causes, the establishment of the Mobile Emergency Care Service in 2003 became essential to minimize the effects of this situation (ROCHA et al., 2014; CABRAL; SOUZA, 2008).

Furthermore, these services are one of the components of the National Emergency Care Policy and aim to treat patients as quickly as possible in order to reduce mortality rates, improve the prognosis of victims, and transport them safely. This tends to reduce healthcare system costs related to hospitalization, treatment, and rehabilitation (DANTAS et al., 2014).

The incidents attended by SAMU can be clinical, traumatic, psychiatric, pediatric, obstetric, or involve removal and transfer between hospitals. Traumatic causes rank second among the main incidents attended by pre-hospital care services and are characterized by various types of injuries, differentiated by the severity and nature of the accidents. These include traffic accidents, violence, falls, burns, among others, and correspond to the third leading cause of death in the country, preceded only by cardiovascular diseases and neoplasms (GIARETTA et al., 2012; ROCHA et al., 2014).

In addition, it should be noted that the use of emergency services in Brazil is inadequate. Despite the increase in the provision of primary care services, many people still seek emergency care. This occurs because patients' perception of urgency may not coincide with that of health professionals, which hinders rapid care for patients, affecting the care of serious patients and non-serious patients who may lose follow-up when requesting emergency services (MACHADO; SALVADOR; O'DWYER, 2011). Thus, the present study aims to characterize the clinical and epidemiological profile of occurrences related to external causes of SAMU in Anápolis-GO.

## **METHODOLOGY**

This is a descriptive, retrospective, cross-sectional epidemiological study. The study was conducted in the municipality of Anápolis, Goiás, using SAMU-192 incident reports from the municipality for the period from January to March 2023 as the source of information. The study population consisted of all individuals attended by SAMU-192

during this period. To conduct the study, data from the incident reports were used, which were accessed after signing the Authorization for Data Use and Handling and the Participating Institution Declaration. Data collection took place at the SAMU-192 headquarters in the municipality of Anápolis, Goiás, using an instrument created by the researchers. The inclusion criteria were all individuals attended by SAMU in the city of Anápolis, GO, from January to March 2023, and the exclusion criteria were records whose data were erased or difficult to understand. The data were transcribed into spreadsheets and subsequently submitted to statistical analysis. Furthermore, the study was conducted only after approval by the Research Ethics Committee of UniEvangélica with the Certificate of Presentation for Ethical Appraisal (CAAE): No. 76731624.5.0000.5076 and opinion No.º 6.723.196.

## RESULTS

According to data obtained from the respective SAMU service records in Anápolis-GO from January to March 2023, 1,097 incidents related to external causes were analyzed, excluding records whose data were difficult to understand or insufficient to include in the research. In January, 340 incidents were recorded, in March 343, and in April 414, showing an increasing number of calls for external causes in the first quarter of 2023.

Of the total subjects analyzed, the majority were male (60.8%); moreover, the prevalence of these individuals declined during the first quarter, with 63.8% being male in January, 61.5% in February, and 57.7% in March. Regarding age, most were between 19 and 45 years old (45.8%), and the minority were children under 1 year old (1.8%) (Table 1).

**Table 1.** Sociodemographic profile of SAMU calls related to external causes in Anápolis, GO, from January to March 2023.

Variables	Months			Total N
	January n (%)	February n (%)	March n (%)	
<b>Gender</b>				
Male	217 (63.8)	211 (61.5)	239 (57.7)	667 (60.8)
Female	119	131	175 (42.3)	425 (38.7)
Not reported	4 (1.2)	1 (0.3)	0 (0.0)	5 (0.5)
<b>Age</b>				

< 1 year	5	4 (1.2)	11 (2.7)	20
1 to 10 years	13 (3.8)	19 (5.5)	19 (4.6)	51 (4.6)
11 to 18 years	12 (3.5)	16	28	56
19 to 45	149 (43.8)	170 (49.6)	183 (44.2)	502 (45.8)
46 to 60	67 (19.7)	56	80	203 (18.5)
> 60 years	84 (24.7)	77 (22.4)	92 (22.2)	253 (23.1)
Not reported	10 (3.0)	1 (0.3)	1 (0.2)	12 (1.1)

Source: Author

Regarding the place of origin of the occurrence, it was observed that most occurrences originated on public roads (42.3%), followed by emergency care units (22.8%) and homes (16.1%). In relation to the main times of day, most calls occurred in the afternoon (33.9%), with the highest prevalence for this shift observed in January (33.8%). In addition, most incidents occurred on weekends (33.5%).

Regarding the types of care provided by SAMU, most were emergency calls (59.4%), while 443 incidents were recorded for removals, corresponding to 40.4% of the total. It should be noted that the highest prevalence of removal cases occurred in March (41.3%). The main reason for calls for external causes, except for removal incidents, was traffic accidents (28.2%), with the highest prevalence in February (31.2%), followed by calls for falls (10.8%) (Table 2).

**Table 2.** Distribution of occurrences related to external causes of SAMU in Anápolis-GO according to the reasons for care from January to March 2023.

Reasons for care	January	February	March	Total
	n (%)	n (%)	n (%)	n (%)
Removal/transport	136	136	171	443
Traffic accident	79 (22.3)	107 (31.2)	123 (29.7)	309 (28.2)
Hit by a vehicle	4 (1.3)	5 (1.5)	7	16
Falls from height	45	36 (10.5)	38	119 (10.8)
Stab wound	12	14 (4.1)	5 (1.3)	31
Firearm injury	1 (0.3)	2 (0.6)	3 (0.7)	6
Assault	24 (7.2)	15	21	60 (5.5)
Exogenous intoxication	5 (1.6)	4 (1.2)	18	27
Electric shock	1 (0.3)	1 (0.3)	1 (0.2)	3
Burn	2 (0.7)	6 (1.7)	1 (0.2)	9 (0.8)
Drunkenness	7 (2.2)	1 (0.3)	3 (0.7)	11
Scorpion/snake bite	1 (0.3)	1 (0.3)	2 (0.5)	4
Other (choking, injury by sharp object, domestic accidents)	23	15	2	59 (5.4)

Source: Author

Finally, regarding the destination of patients, it was observed that most were sent to hospitals (16.0%), followed by emergency care units (31.1%). Of these, eight patients died at the scene, corresponding to 0.7% of cases.

## CONCLUSION

The study revealed a continuous increase in the number of incidents related to external causes throughout the quarter, with a predominance among men and individuals aged 19 to 45 years. Incidents were more frequent on public roads, especially in the afternoon and on weekends. Traffic accidents were the main cause of care, followed by falls and other traumas. These data highlight the importance of prehospital care services and indicate the need to improve the efficiency of emergency care and triage. The study provides valuable information for the formulation of policies and practices aimed at optimizing emergency response and reducing trauma mortality.

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