Cogitare Enfermagem

ORIGINAL ARTICLE

ANALYSIS OF THE MANAGEMENT INDICATORS OF THE MOBILE EMERGENCY CARE SERVICE OF CEARÁ

HIGHLIGHTS

1. Occurrences in elderly men with Covid-19 or motorcycle trauma.
2. Requires improvement, there was a prevalence of incomplete or unreported data.
3. The response time of SAMU (in Portuguese) service is longer than recommended.

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ABSTRACT

Objective: To analyze the health management indicators related to the mobile emergency care service in Ceará. **Method:** This is a documentary, retrospective, quantitative study, carried out on the *IntegraSUS* website of the Ceará state government - Brazil, during the period July 2021, to analyze the indicators "total calls" and "average response time". **Results:** It was verified a profile of prevalent calls for men (52.66%), with advanced age >70 years (22.06%), Covid-19 service occurrences for the Juazeiro central station (7.62%) and motorcycle accidents for the Eusébio central station (7.94%). The service got calls for 177 cities in Ceará (96.19%) with a longer average response time for Covid-19. **Conclusion:** The analysis signals the need to adjust strategies to improve the performance of the service response time, with a review of the organizational system, including the publication of data by the digital platform.

DESCRIPTORS: Emergency; Emergency Medical Services; Health Information Systems; Management Indicators; Health Management.

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INTRODUCTION

In recent decades, Brazil has undergone a transition in its health conditions, which include four dimensions: demographic, nutritional, technological, and epidemiological, consolidating the growing predominance of chronic diseases and external causes[1]. The transition could not be accompanied by changes in health care systems[1], thus increasing the need for effective response by the Urgent Care and Emergency Network (RUE- in Portuguese) of the Brazilian Unified Health System (SUS)[2].

The RUE is part of the five thematic networks of the health care network, with the purpose of articulating and integrating all health care facilities, expanding, and qualifying the access to users in urgent and emergencies in health services[2]. Thus, the mobile emergency care service (SAMU 192) was instituted as one of its components to integrate pre-hospital care, organize the flow of care and provide early care, with fast and resolution transport, by sending manned vehicles activated by free call through the 192-telephone number, under the coordination of a hierarchical and decentralized emergency care regulation center[3].

Studies from different countries point to positive impacts with hospital mortality reduction in the priority lines of care of the RUE, with improved prognosis of highly prevalent health problems such as trauma, stroke, and acute myocardial infarction[4-6].

In Brazil, according to the last annual health management report 2019 of the federal government, there are currently 192 emergency regulation centers in the country, with manned vehicles that provide coverage to 3,725 municipalities and guarantee access to the RUE to more than 176 million people, representing a coverage rate of 84.88% of the Brazilian population. To enable the expansion of the population's access to mobile emergency care and the achievement of improvements in pre-hospital care, continued evaluation of the service is indicated, to prove its benefits and the need for changes that prove the demand for investments in the RUE[7].

The quality of care provided by SAMU is associated with work methodology, available resources, the competence of the health team working there, and quality-promoting management, with frequent evaluations using valid instruments, health indicators, and annual management reports in continuous improvement cycles[8].

Measuring the quality of health care services is one of the greatest challenges for managers. However, management tools are used and have proven to be effective to evaluate health care, its results, and weaknesses, aiming at planning, development, and evaluation of improvements in the health system. It is noteworthy that the quality of the evaluation and the reliability of the data are essential for a real diagnosis of the service[9].

Based on what has been presented, this study aims to analyze the indicators of health management related to the mobile emergency care service of Ceará, justified by meeting the axis nine of the research priorities of the Ministry of Health[10] which refers to programs and health policies to analyze the impact of pre-hospital care in the Unified Health System, and also by the lack of research on computerized indicators of the government of the state of Ceará, identified by previous survey in the literature. The findings of the study are relevant for strategic organizational management, providing an overview of the care provided so that it can support local managers in planning actions and policies to improve the operationalization of the service in the health care network.

METHODOLOGY

This is a documentary, descriptive, retrospective study, of quantitative approach, which had as theoretical and methodological reference the steps recommended by Gil[11]

for documentary research: formulation of the problem; preparation of the work plan; identification of sources; location of sources and obtaining the material; analysis and interpretation of data; and writing the report.

For the problem formulation stage, the research question was defined: What do the health management indicators related to the mobile emergency care service indicate? The work plan was designed to analyze the management indicators of the SAMU managed by the Health Secretariat of the State of Ceará (SAMU 192 Ceará). Therefore, a research hypothesis was determined, the types of documentary sources chosen, the variables for obtaining the material, and the data treatment, described in the other research steps.

Thus, two research hypotheses were defined: the first, that the indicators addressed are in line with the national guidelines for implementation, qualification, and qualification of SAMU 192 and its emergency regulation centers[12], and the second, that SAMU 192 Ceará presents effective response-time functioning.

The documentary sources were constituted by governmental statistical data, located on the *IntegraSUS* electronic site of the Ceará state government, for the analysis of management indicators available for public consultation. Data collection on the platform was carried out in July 2021, whose records date from January to September 2020.

IntegraSUS is an electronic transparency tool for public health management in Ceará, which integrates monitoring and management systems for epidemiological, surveillance, primary care, pre- and in-hospital, outpatient, planning, administrative, and financial health indicators from the State Health Secretariat and the 184 municipalities. These data are collected, analyzed, and made available to the population and managers[13].

In this study, for the stage of obtaining the material, the indicators of the mobile pre-hospital care component of the network of attention to urgencies and emergencies were used, which refer to the record of the indicators "total calls" and "average response time". The data survey was carried out by the regulation centers ruled by the state of Ceará.

SAMU 192 Ceará currently has three Urgent Care Regulation Centers (CRU): CRU Eusébio, which regulates the health regions of Fortaleza, East Coast/Jaguaribe and Central Sertão; CRU Juazeiro do Norte, which regulates the Cariri health region; and CRU Sobral, more recently introduced, serving the Sobral health region. In total, the service has 121 support bases and 167 mobile units, being 30 Advanced Support Units (USAs- in Portuguese), 131 Basic Support Units (USBs- in Portuguese), three Air-Medical Rescue Units, and three motor-coaches[14]. There is also SAMU Fortaleza, which serves the city, but it is not regulated by the state, but by the Municipal Health Secretariat of Fortaleza.

Therefore, data were collected from the Juazeiro do Norte and Eusébio CRU (Emergency Regulation Centers). During the collection period, there was no data in the IntegraSUS system regarding the Sobral CRU because it is a more recent service, with management beginning in June 2022, whose data insertion into the platform occurred after the period, justifying its non-use.

For the total number of calls indicator, the following variables were used: period, municipality, type of call, service hypothesis, nature of occurrences (service hypotheses grouped into clinical, traumatic, obstetric, and psychiatric conditions), gender, age group, destination facility. As for the indicator, average response time, the following variables were used: type of vehicle, treatment hypothesis, municipality, and base of the vehicle.

For the stage of analysis and interpretation of the findings, the data obtained were formatted in a Microsoft Office Excel® database, version 2019, analyzed using descriptive statistics. The presentation of quantitative variables occurred through their measures of central tendency and dispersion, and qualitative variables, in absolute and percentage frequencies. Performing the last stage of the research, the report writing of the interpreted data occurred through tables, figures, and graphs with brief descriptive synthesis, which

were later compared with ordinances, policies and studies related to the thematic area.

Since this is data collection of public consultation information on the free digital platform of the government of the state of Ceará, this study did not require the opinion of the Research Ethics Committee; however, it is in accordance with the government open data policy, observing the three "laws" and the eight governing principles of open data[15].

RESULTS

From the *IntegraSUS* tool, it was found that the SAMU regulation centers of the state of Ceará investigated obtained a total of 265,584 completed calls and 15,499 canceled calls in the period from January to September 2020, and, among the completed calls, 243,921 were assigned to CRU Eusébio (91.8%) and 21,663 to CRU Juazeiro (8.2%).

We observed, in relation to the completed regulatory and transfer calls (n=62,229; 23.43%), more than 10 types of attendance hypothesis, with emphasis on motorcycle accident for CRU Eusébio, and Covid-19 for CRU Juazeiro, prevalence of calls for male sex (n = 32,770; 52.66%) and age ≥70 years (n = 13,731; 22.06%). The predominance of calls with uninformed data for the hypotheses of attendance and age group is noteworthy. The characterization of calls by regulatory center is summarized in Table 1.

Table 1 - Characterization of calls to the Mobile Emergency Care Service of Ceará by regulatory centers. Ceará, Brazil, 2020.

CALLS	Juazeiro CRU		Eusébio CRU	
	n	%	n	%
Types (n= 265,584)				
Medical Regulatory	18,019	83.18	30,241	12.40
Transfer/hospitalization	2,805	12.95	11,164	4.58
Information	791	3.65	81,880	33.57
Trot	29	0,13	19,915	8.16
Mistaken	10	0.05	5,575	2.16
Contact with the SAMU team	9	0.04	52,409	21.49
Dropped call	0	0.00	43,037	17.64
Attendance hypothesis (n=62,229)				
Covid-19	1,587	7.62	2,547	6.15
Motorcycle Accident	1,539	7.39	3,288	7.94
Motor vehicle accident	0	0.00	1,263	3.05
Other	817	3.92	2,912	7.03
Fall from own height	722	3.47	1,091	2.63
Seizure	713	3.42	1,376	3.32
Malaise	644	3,09	1,660	4.01
Dyspnea	442	2.12	0	0.00

STROKE	433	2.08	1,253	3.03
Alcoholism	367	1.76	0	0.00
Psychomotor agitation	0	0.00	1,289	3.11
Not informed	13,560	65.12	24,726	59.72
Gender (n=62,229)				
Female	8,569	41.15	11,822	28.55
Male	11,814	56.73	20,956	50.61
Not informed	441	2.12	8627	20.84
Age group (n=62,229)				
≥70 years old	5,948	28.56	7,783	18.80
60 to 69 years old	1,952	9.37	3,303	7.98
50 to 59 years old	1,970	9.46	3,940	9.52
40 to 49 years	2,449	11.76	4,042	9.76
30 to 39 years	2,632	12.64	4,593	11.09
19 to 29 years	2,886	13.86	5,257	12.70
10 to 18 years	938	4.50	1,473	3.56
< 10 years	2,049	9.84	2,959	7.15
Not informed	0	0,00	8,055	19.45

Legend: CRU = Emergency Regulation Center
Source: *IntegraSUS* (2021).

Among the calls per municipality, it was found that the regulation centers investigated presented calls for 177 municipalities, having a coverage rate in the period from January to September 2020, of 96.19% in relation to the total number of municipalities in the state (n = 184). In the evaluation by regulation center, for the Juazeiro CRU, there were open calls for 49 (26.63%) municipalities, with Juazeiro do Norte prevailing with 10,047 (34.5%), Crato with 3,853 (13.07%), Iguatu with 3,118 (10.66%), Brejo Santo with 1,181 (3.99%), and Icó with 996 (3.27%). As for the Eusébio CRU, there were calls for 152 (82.60%) municipalities, highlighting the municipalities Caucaia with 6,465 (2.41%), Maracanaú with 4,643 (1.72%), Crateús with 1613 (0.60%) and Itapipoca with 1613 (0.57%). Both centers served 24 concomitant municipalities in the evaluated period. However, it was noted that in 224,290 (82.5%) calls from CRU Eusébio the municipalities of origin were not identified. Figure 1 shows the geographical distribution of the municipalities with the highest number of calls flagged by color gradient.

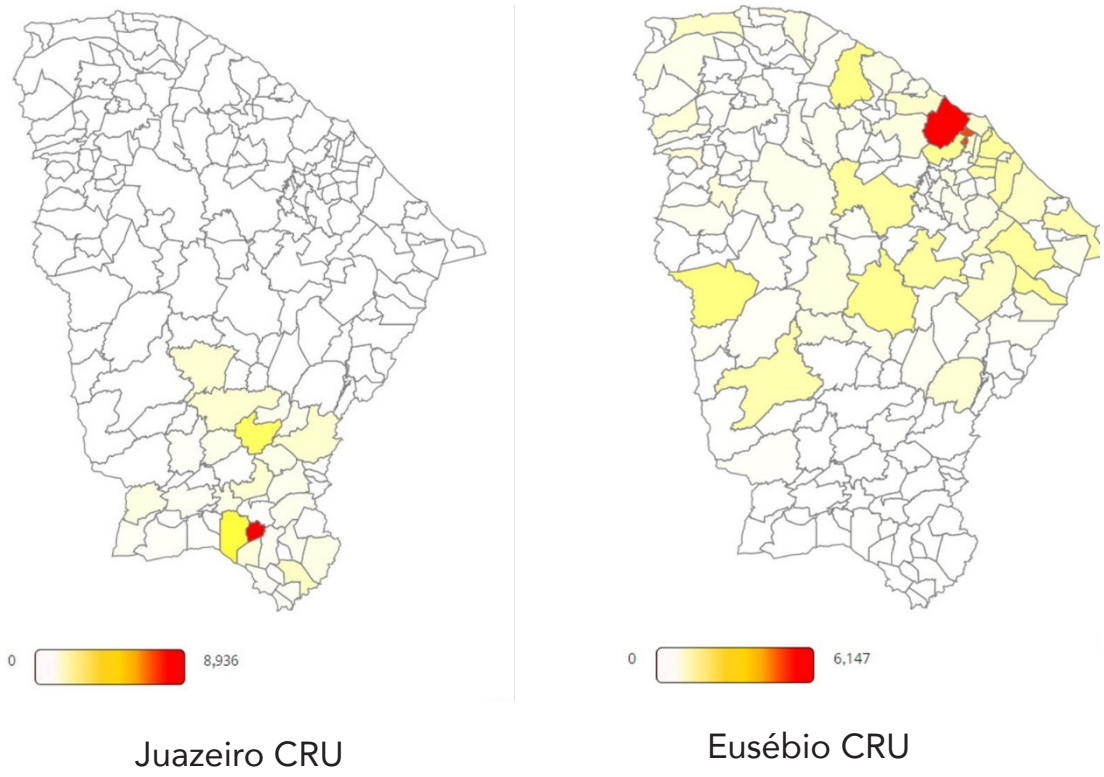

Figure 1 - Telephone calls to SAMU regulation centers investigated by Ceará municipalities, Brazil, 2020.
Source: *IntegraSUS* (2021).

Regarding the calls by destination facilities by the Juazeiro CRU, pre-hospital care was most frequently referred to the emergency care unit (UPA) of Juazeiro do Norte with 2792 (9.27%); Regional Hospital of Cariri with 2,671 (8.86%); São Francisco Maternity Hospital of Crato with 1,301 (4.29%); Regional Hospital of Iguatu with 1,154 (3.87%); and Heart Hospital of Cariri with 740 (2.41%). It was found that in 13,532 (45.84%) calls the destination establishment was not registered. As for the Eusébio CRU, there were more calls to the following destination facilities: Dr. José Frota Institute with 4,076 (1.48%); Messejana Hospital with 2,440 (0.89%); Fortaleza General Hospital with 1,610 (0.59%); Leonardo da Vinci Hospital with 1,238 (0.47%); and Regional Hospital of Sertão Central with 1,191 (0.45%). However, in 241,823 (89%) calls made, the final treatment destination sites were not identified.

As for the response time of the SAMU of Ceará, the mean response time was longer for the Covid-19, Respiratory Failure, and Acute Myocardial Infarction care hypotheses. Considering the priority lines of care of the Emergency and Urgent Care Network (RUE), the average response time was 102 minutes for Acute Myocardial Infarction, 63 minutes for stroke and 59 minutes for trauma situations. An average was calculated for the identified trauma situations. It was verified in the *IntegraSUS* platform that the data were available in general, and not by regulatory center, which is summarized in table 2.

Table 2 - Average response time of the SAMU service linked to the investigated regulatory centers in the state of Ceará, by care hypothesis. Ceará, Brazil, 2020.

	VARIABLE	Time (min.)
Area	**Attendance Chance**	**Total**
Attendance Chance	COVID-19	191
	Respiratory Insufficiency	190
	Dyspnea	37
	Malaise	29
	Syncope	26
Cardiovascular	Acute Myocardial Infarction - AMI	102
Cerebrovascular	Cerebral Vascular Accident - CVA	63
Psychiatric	Psychomotor agitation	40
Trauma	Firearm-related injury (FAP)	87
	Traumatic Brain Injury - TBI	82
	Motorcycle accident	35
	Motor vehicle accident	32
Obstetric	Hypertensive Disease of Pregnancy – DHEG (in Portuguese)	98
	Other	101
	Not informed	52

Source: *IntegraSUS* (2021).

Regarding the mobile units manned by the regulatory centers of the state of Ceará evaluated, the average response time of the vehicles were: motorcycle rescue with, approximately, 26 minutes (25.7 minutes) (max. 30, min.22; SD ±3.0); basic support unit (USB) with 40 minutes (max. 55, min.35 SD ±6.9); intermediate support unit (USI) with 43.2 minutes (max. 93, min.31; SD ±17.8); advanced support unit (USA) with 141 minutes (max. 195, min.114; SD ±29.3); air-medical rescue with 325.8 minutes (max. 532, min.176; SD ±115.1); and federal road police with 31.3 minutes (max. 142, min.140; SD ±58.6). In the period from January to September 2020, shown in Figure 2, the average response time was higher for the units of the air-medical rescue type and lower for those of the motorcycle rescue type, with higher demand of calls occurring in the month of May.

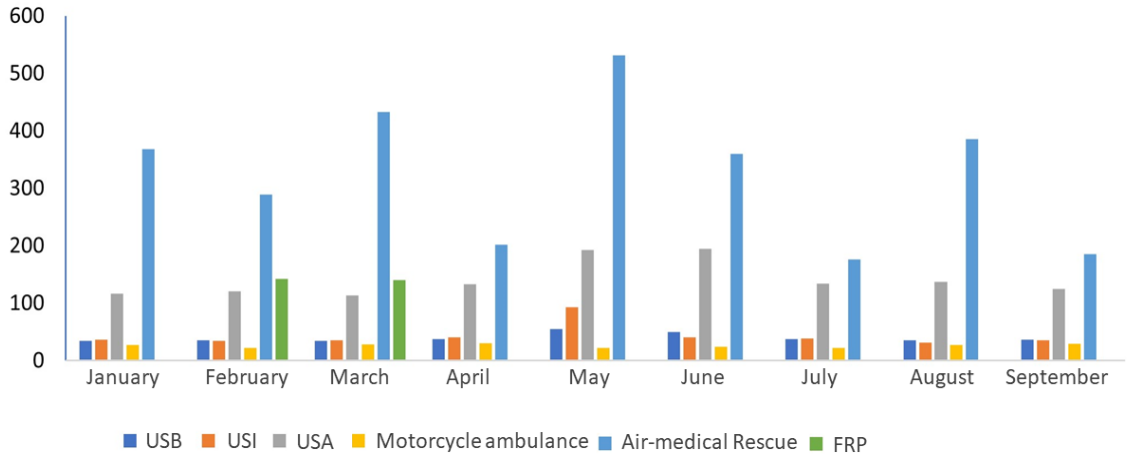

Figure 2- Average response time (min) by type of SAMU vehicle in the period from January to December 2020. CE, Brazil, 2020

Source: Own elaboration based on IntegraSUS data (2021).

Regarding the average response time in minutes per municipality, the municipalities with the longest response time were Crato (543 minutes), Sobral (464 minutes), Barbalha (399 minutes), Iguatu (386 minutes), and Brejo santo (331 minutes). The municipalities that presented the shortest average response time were Santana do Acaraú (24 minutes), Forquilha (25 minutes), Graça (25 minutes), Massapê (26 minutes), and Nova Jaguaribara (27 minutes). Regarding the type of base, the aeromedical rescue base of Juazeiro and Fortaleza had the highest average response time with 440 minutes and 300 minutes respectively.

DISCUSSION

The health indicators analyzed, available on the digital platform, are in accordance with Ordinance No. 1,010 of May 21, 2012[12] on the guidelines for implementation of SAMU and its regulation centers, except in relation to medical advice provided; identification of days of the week, peak hours of care; location of occurrences; and percentage and absolute frequency of patients referred to other components of the urgent and emergency care network. It is noteworthy that the expansion of the database to include the profile of care, response time and results of patients treated strengthens the evidence in the delineation of indicators and standards of care, becoming a successful strategy already indicated in the literature[16].

Based on the data obtained, it was found that the coverage rate of total calls to Ceará municipalities in the period from January to September 2020 was higher compared to the previous year in a study conducted in the state of Ceará, which was present in 136 municipalities (73.9%)[17] and higher than the coverage of the Northeast region (83.2%) and Brazil (85%) in 2019[16]. The data show that Ceará has advanced and may stem from improvements in its organizational, budgetary, and political arrangements in the implementation of SAMU 192. However, to achieve the coverage of 100% of the population in a universal, equitable, and timely manner, management must be attentive to the smaller municipalities and/or those with greater economic, social, and health service vulnerability.

Regarding the characterization of the investigated calls, the findings of this study corroborate other surveys on the profile of SAMU occurrences in other locations of the country, also verifying the prevalence of calls to the male gender, of clinical nature[18-23], Covid-19 care hypothesis[24-25], except in the age range, since the studies identified prevalence of young people in the age group 21 to 30 years old (17.18%)[23], 25 to 34 years old (18.8%)[21] and 50 to 59 years old[17, 20].

The higher number of consultations for males is because men seek health services less often, especially primary care, to monitor chronic diseases or to perform preventive care and health promotion, which results in a tendency to delay the search for care. For most of the acute or chronic-acute clinical conditions presented, the mobile emergency service is requested[18].

The prevalence of calls for the elderly may have occurred because they are people who present, in their majority, chronic-degenerative diseases, reduced functional capacity, higher risk of trauma and violence, greater exposure to biological pathogens, increasing the need for emergency services and high complexity care[26]. Elderly patients account for 12% to 21% of emergency room visits and use emergency services more often than young people; therefore, they are more likely to reach the emergency room by ambulance[18]. Moreover, the Brazilian population has kept the aging trend recently, with an 18% growth of elderly people[27], and in Ceará, the proportion of elderly people in 2020 will approach 10% of the state population[28].

It is noteworthy that the study investigation period occurred during the Covid-19 pandemic, in which the elderly was part of the risk group and were more affected by

the disease, presenting respiratory failure and requiring emergency services more often[29], which may be related to the prevalence of care for the age group and clinical nature, with a diagnosis hypothesis of the Covid-19 type in the current investigation.

Considering the findings, studies conducted in municipalities of the state of Ceará during the pandemic indicate a profile of elderly people with low education, income considered the main breadwinner of the family and difficulty of access to health services[30], important vulnerabilities for increased exposure to the disease, whose lethality has been higher in the age group over 60 years due to the presence of comorbidities[31].

The Covid-19 pandemic, declared in March 2020, which is ongoing until the moment of this study, is caused by the infection of the new coronavirus Sars-Cov-2 and, due to its high transmissibility and mortality, has required changes with strong impact on the routine of health professionals and services. A significant proportion of affected patients can evolve to emergencies in the out-of-hospital environment or require inter-hospital transfers to more complex health care institutions, which has required the reorganization of the Mobile Emergency Care Service (SAMU) worldwide[32-33] However, research on the influence of Covid-19 on pre-hospital emergency medical services is limited[33].

The SAMU, as a means of entry of the user to the health system, has been essential in the care of suspected or confirmed cases of the disease, providing assistance with immediate transport to the different levels of care, making it essential to implement broad preventive measures before, during and after all care performed[25], which may have influenced the response time of ambulances in additional time, and especially regarding calls for hypothetical care for Covid-19 and respiratory failure in this investigation.

On the international scene, in the period studied that coincides with the pandemic by Covid-19, there were studies with prevalence of requests for mobile emergency units for Covid-19[34] and for external causes[35], corroborating the data of this research. Since for both regulation centers evaluated, external causes were significant, the literature justifies this occurrence by the fact that, currently, the impacts caused by population increase, technological advances, and more frequent access of people to transport vehicles favor the occurrence of traumas[19].

The prevalence of motorcycle traffic accidents seen in this study has been observed in Brazil since before the pandemic, being considered an important public health problem with high morbidity and mortality rates and costs to the Brazilian National Health System, besides leaving a significant number of people with sequelae[36,20].

The literature shows a prevalence associated with the male population, young, with a tendency to use at excessive speed, under risky maneuvers in traffic, with excessive self-confidence, aggressiveness, or negligence in traffic while consuming alcohol and other drugs[20]. This signals to health authorities and managers to strengthen public health policies, especially those of prevention, health promotion, and traffic education, and to be more rigorous in the measures of inspection and punishment of offenders.

Regarding the average response time of the Ceará SAMU service, it is longer when compared to the average time of other international pre-hospital services[35,37]; however, it is similar to a national service investigated in the state of Rio Grande do Sul, with a prevalence of time interval between thirty minutes and one hour[18], and differs from a service in Piauí with a time of 14.7 minutes for the USA and 9.7 minutes for USB in urban areas, and 39.6 minutes and 50.3 minutes respectively in rural areas, even so, showing time durations greater than the ideal[38]. It is noteworthy that, even before the pandemic, the literature had already pointed to long response times in different Brazilian states, with the possibility of being related to the road network, population density, the uneven implementation process in the Brazilian regions, and structural deficiencies, with the North and Northeast regions being the most affected[39].

It is valid to infer that the atypical pandemic period implied changes in the routines

of the teams' and vehicles' dressing protocols, in addition to the care, costing more time to the service. International studies[33,35] have found that the response-time rates of pre-hospital emergency medical services were prolonged during the pandemic by Covid-19, requiring updating of pre-hospital information management systems, ambulances, and health equipment, as well as permanent training of the pre-hospital care team[35].

Regarding the national pre-hospital service, a study conducted in a capital city in southern Brazil shows that there were negative impacts on the response time of SAMU due to the insertion of new infection control measures on ambulances and the process of paramentation and deparamentation[25]. However, there is a lack of national studies that discuss the impact of the pandemic on the service performance indicators, especially in the measurement of response time, making it difficult to validate the data from this research.

The response time of the pre-hospital mobile care service is crucial for a good prognosis of diseases, whether they are of clinical or traumatic nature; therefore, it is an important indicator in assessing the quality of the service[25]. A cohort study of poly-trauma patients treated by an aero-medical service in Texas showed a strong positive linear correlation between the response time of the service and the length of hospital stay and mortality. Patients with response times longer than 20 minutes had a significant increase in in-hospital mortality[6].

The average response time varied according to the mobile units, highlighting the motorcycle rescue with the shortest response time, integrated into the service by the ordinance No. 2971 in 2008, for the rapid care of time-dependent acute diseases (such as acute myocardial infarction, stroke, traumatic brain injury). This is related to the better speed performance in traffic to the scene of the event. The motorcycle ambulance has medicine and basic support equipment, has greater feasibility of interventions in places with geographical characteristics and road network unfavorable to ambulances, and provides support for interventions that require an additional nursing technician at the scene[40].

According to the IntegraSUS platform of the Ceará state government, there was a higher average response time of the vehicles in the month of May 2020, possibly associated with the peak period of the epidemic curve of the number of cases and deaths from Covid-19 in Ceará, with higher demand for the mobile emergency service[13].

The destination facilities ranged from emergency care units to referral hospitals for cardiovascular, cerebrovascular, and trauma care. Considering the priority lines of care of the RUE, it was found that the response time was higher than the international services for acute myocardial infarction[41], stroke[42] and trauma[43]. At the same time, studies published (inter) nationally have signaled the impact of the pandemic[25] on the response time of mobile units for other clinical[44] and traumatic[45] disorders.

Another fact worth mentioning is the significant incompleteness of the observed data, especially in relation to the CRU Eusébio, which may have occurred due to underreporting or partial completion of administrative and service forms at the operational bases. This fact was also observed in a study conducted in Curitiba, Paraná, Brazil, in 2020[46]. The incompleteness of the information directly implies the quality and continuity of care, as well as the evaluation of the service management indicators, making it necessary to have continuous training of the regulation and assistance teams, and the strengthening of technological strategies that enable fast and quality filling.

The study presents as limitations the analysis of indicators related to the location of the occurrences, the structure and conservation of the fleet, the health team, the outcomes of patients treated, and the priority lines of care of the care network. It is noteworthy that the significant number of undefined records may result in an unreliable analysis of the service indicators in the state of Ceará.

On the other hand, it presents contributions to the health management of the state and society, since, together, the epidemiological variables and the indicators evaluated can

reflect on the productivity and responsiveness of mobile resources, enable subsidies for investments in infrastructure, such as transportation, communication, and information, so that it can benefit the development of new poles, with a better offer of services, reduced costs, and increased technical and operational capacity of the regulation centers.

FINAL CONSIDERATIONS

The analysis of the computerized indicators for the management of the mobile pre-hospital component of the state of Ceará reveals that it is according to the national guidelines listed, with a profile of calls for males, in advanced age, with hypotheses of care for Covid-19 and motorcycle traffic accidents, with good coverage rate, however the response time is above the international services. This requires the need to adjust strategies to improve the performance of the response time of the service, especially in relation to the priority lines of care of the RUE, to achieve effective operation in line with public health policies. The organizational system of the mobile pre-hospital service needs improvements, including the publication of data by the IntegraSUS digital platform, since the prevalence of incomplete or uninformed data was high. Given the findings, the need for experimental studies to evaluate the impact of the Covid-19 pandemic on the response time of the mobile emergency service for time-dependent acute diseases is reinforced.

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Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work - **Formiga NPF**. Drafting the work or revising it critically for important intellectual content - **Formiga NPF, Silva LMS da, Matos JHF de, Gomes EB, Santana KFS, Ferreira FE, Queiroz MVO.** Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved - **Formiga NPF**. All authors approved the final version of the text.

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