

PROFILE OF STATE PREHOSPITAL MOBILE EMERGENCY CARE SERVICE*

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ABSTRACT: The aim of the present study was to identify the epidemiological and health profile of care provided by the Emergency Mobile Care Service of the state of Rio Grande do Norte, Brazil, between January and April 2014. This was a descriptive, exploratory and quantitative study based on retrospective data. Data were gathered between July and September 2014 using a pre-determined instrument. We analyzed 3,186 incidents, of which 1,473 were clinical, 1,454 traumatic, 79 obstetric, and 180 psychiatric. Furthermore, 2,012 (63.2%) consisted of male victims and individuals between 25 and 34 years old represented the most common age group. The day period totaled 58.3% of incidents. Basic Support Units carried out 90.4% of care. The results showed that the characterization of this service is relevant to substantiate the creation of health policies and actions compatible with the identified needs.

DESCRIPTORS: Health profile; Prehospital Care; Emergencies.

PERFIL DE ATENDIMENTO DO SERVIÇO PRÉ-HOSPITALAR MÓVEL DE URGÊNCIA ESTADUAL

RESUMO: O estudo possui como objetivo identificar o perfil epidemiológico e de saúde dos atendimentos realizados pelo Serviço de Atendimento Móvel de Urgência do Rio Grande do Norte, durante os meses de janeiro a abril, do ano de 2014. Trata-se de um estudo descritivo, exploratório, quantitativo e com dados retrospectivos. A coleta dos dados foi realizada nos meses de julho a setembro de 2014, a partir de um instrumento pré-estabelecido. Foram analisadas 3.186 ocorrências, das quais 1.473 eram clínicas, 1.454 traumáticas, 79 obstétricas e 180 psiquiátricas, sendo 2.012 (63,2%) das vítimas do sexo masculino. A faixa etária com maior número de atendimentos foi a de 25 a 34 anos. O período diurno totalizou 58,3% das ocorrências. As Unidades de Suporte Básico realizaram 90,4% dos atendimentos. Os resultados mostraram que é pertinente a caracterização desses atendimentos para fundamentar a elaboração de políticas públicas e ações em saúde condizentes com as necessidades identificadas.

DESCRIPTORES: Perfil de saúde; Assistência Pré-Hospitalar; Emergências.

PERFIL DE ATENCIÓN DEL SERVICIO DE ATENCIÓN PREHOSPITALARIA MÓVIL DE URGENCIAS ESTATAL

RESUMEN: El estudio tiene como objetivo identificar el perfil epidemiológico y sanitario de las atenciones realizadas por el Servicio de Atención Móvil de Urgencias de Rio Grande do Norte, entre enero y abril de 2014. Estudio descriptivo, exploratorio, cuantitativo y con datos retrospectivos. Datos recolectados entre julio y setiembre de 2014 a partir de instrumento preestablecido. Fueron analizadas 3.186 incidencias, de las cuales 1.473 eran clínicas, 1.454 traumáticas, 79 obstétricas y 180 psiquiátricas, resultando que 2.012 (63,2%) de víctimas eran de sexo masculino. La faja etaria con mayor número de atenciones fue la de 25 a 34 años. El 58,3% de las incidencias fueron atendidas en período diurno. Las Unidades de Soporte Básico realizaron el 90,4% de las atenciones. Los resultados demostraron que es pertinente la caracterización de las atenciones, para fundamentar la elaboración de políticas públicas y campañas sanitarias en correspondencia a las necesidades identificadas.

DESCRIPTORES: Perfil de Salud; Atención Prehospitalaria; Urgencias Médicas.

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● INTRODUCTION

Emergencies are defined as health problems that pose an imminent threat to life, requiring immediate and case-resolving medical care. In turn, urgencies are characterized as incidents that cause considerable health damages, with or without potential risk of death, demanding expedient care in the least amount of time possible⁽¹⁻²⁾.

In light of the above, emergency mobile prehospital care plays a relevant role in public health, as urgent and emergency situations are routinely observed in the population at large, whether related to cardiovascular clinical diseases, neoplastic diseases and traumas. It can be defined as care outside of the hospital environment, provided to victims in the initial minutes of the health problem that could lead to physical disability or death. Thus, it is essential that these individuals receive quality care and transportation to an adequate entry point, according to the Unified Health System's (SUS) Care Network, with the purpose of maintaining life and minimizing sequelae⁽¹⁾.

To create the emergency mobile prehospital care service in Brazil, in 2003, the Ministry of Health published the National Policy for Emergency Care, culminating in the creation of the Emergency Mobile Care Service (SAMU). According to this legislation, SAMU must provide direct and indirect care, according to medical regulations, via the telephone or on location, so that through the speed of the care provided, the number of deaths and major sequelae can be reduced⁽³⁻⁴⁾.

Furthermore, a broader view of the service can indicate the systematization of health services in a given location. This allows for planning solutions and reorganizing existing activities and services, providing alternative means that enable solutions to existing problems⁽⁵⁻⁶⁾.

In this sense, given the SAMU's condition as an observatory for the entire Brazilian healthcare network, studies on the epidemiological and health profiles of incidents should be conducted periodically. Studies of this nature can contribute greatly to the creation of strategies aimed at preventing possible health problems, formulating health policies and programs, and improving the quality of care provided by these services, by executing ongoing education more directed to the actual profile of care needed.

Based on our experiences with the practical activities of a prehospital emergency mobile care service and a review of the scientific literature published on this object of study, the research question was: what are the characteristics of the care provided by prehospital emergency mobile care services in the state of Rio Grande do Norte, Brazil? What is the epidemiological and health profile of the victims?

Based on these questions, the objective of this study was to identify the epidemiological and health profile of care provided by the Urgent Mobile Care Service of the state of Rio Grande do Norte, Brazil, between January and April 2014.

● METHOD

This was a descriptive, exploratory, quantitative study based on retrospective data. In descriptive studies, researchers observe, record, analyze and correlate facts or incidents without manipulating them. They accurately describe the frequency with which a phenomenon occurs and its relationship and connection with others⁽⁷⁾.

A quantitative approach was chosen as it allows for the systematic gathering of numerical data through control conditions, measurements and the careful interpretation of reality⁽⁸⁾.

The data were collected from nursing records used during incidents assisted by SAMU professionals in the state of Rio Grande do Norte (SAMU 192 RN), with reference to the period between January and April 2014. Two nursing graduate students and one professor of a higher education institution were responsible for obtaining these records from the central database.

Founded in November 2006, the studied SAMU is located on the BR 304 interstate highway, the first of its kind in Brazil implemented on a highway, facilitating access to incidents. Currently, SAMU

covers 25 decentralized bases, reaching 69 municipalities, and the main accesses to the federal and state highway network. In 2011, SAMU covered 42% of the population; in 2014, this coverage reached 78% of state territory, corresponding to approximately two million inhabitants⁽¹⁾.

The following variables were selected for categorization: demographic data (gender and age group), type of clinical (neurological, cardiovascular, respiratory and metabolic), traumatic (accidents and violence), obstetric and psychiatric incident, region of the state in which the service was provided, time of the incident, location of patient destination, and type of support vehicle – Basic Support Unit, Advanced Support Unit, Rescue Unit, motorcycle and helicopter. Age groups were stratified according to the Pan American Health Organization's (PAHO) standard model, namely: under 1 year old, 1 to 4 years old; 5 to 14; 15 to 24; 25 to 34; 35 to 44; 45 to 54; 55 to 64; 65 to 74; and 75 and older. Incomplete, illegible records or forms with erasures were excluded from the study.

Data were gathered between July and September 2014 using an instrument structured by the researchers based on information present on care records used at the service. At a later moment, the data were categorized on an Excel spreadsheet and presented in the form of tables and analyzed using descriptive statistics.

The care records included in this study consisted of fully filled in forms with legible handwriting. Records whose forms were inadequately filled out and/or illegible were excluded.

As this study involved human beings, it abided by resolution no. 466, of December 12, 2012, of the Brazilian National Health Council. Furthermore, prior consent was obtained from the institution for data collection, with no access to the victims' identification data. The study was also approved by the Onofre Lopes University Hospital (HUOL) research ethics committee of Natal, Rio Grande do Norte, under protocol no. 437, July 9 2010 and CAAE: 0025.0.294.051-10⁽⁹⁾.

● RESULTS

Between January and April 2014, SAMU 192 RN assisted a total of 3,209 incidents, of which 23 were excluded due to records that were incomplete, insufficient or with illegible handwriting. Therefore, 3,186 met the inclusion criteria. Of these, 1,473 (46.2%) were related to clinical, 1,454 (45.6%) traumatic, 79 (2.5%) obstetric, and 180 (5.6%) psychiatric causes.

In terms of the period of care provided by month, as shown in Table 1, January presented the highest number of incidents, accounting for 1,155 (36.3%) of services, and the highest incidence of clinical incidents, with 536 (16.8%). The same was true for traumatic incidents (507-15.9%), which were more prevalent in January. From February to April, most incidents were trauma-related, 307 (9.6%), 304 (9.5%) and 336 (10.5%), respectively.

Of the 3,186 incidents investigated (Table 2), most involved male victims, 2,012 (63.2%) and 1,140 (35.8%) involved women. Thirty-four (1.1%) records contained no gender identification.

Table 2 correlates the gender of victims with the nature of incidents, showing that male patients stand out among traumatic incidents, with 1,127 (35.4%) cases. In turn, among women, clinical causes prevailed, corresponding to 686 (21.5%) of the incidents assisted.

Patient age ranged (Table 3) from under 1 year old to 75 or older. The greatest percentage of care was provided to individuals between 25 and 34 years old, with 598 (18.8%) of incidents, among which traumatic causes (12.2%) stood out as the main reason for care among this population.

In terms of obstetric causes, the greatest percentage of victims fell between the ages of 15 and 24, with 44 (1.4%) patients assisted. The main age group represented by psychiatric causes was 15 to 34 years, with 51 (1.6%) victims.

During the period of the study, there was a predominance of care provided in the afternoon (12h01min to 18h00min), with 31.5% of total services. The night period (00h00min to 05h59min) presented the lowest percentage, or 14.2% of the total. Clinical urgencies were also more frequent in the afternoon (14.3%), whereas traumatic ones were more common in the afternoon and evening.

Regarding type of support vehicle used (Table 5), of the 3,186 incidents that occurred throughout the studied period, most were Basic Support Units. These assist less severe victims and represented 2,880 (90.4%) of the cases. In turn, Advanced Support Units, used for more severe victims, were used in 234 (7.3%) of the cases.

Among the services to which SAMU patients were transferred, most were public hospitals, with 70.3%. Of these, 36.6% were due to traumatic causes and 26.7% to clinical causes. The presence of more than one support vehicle on location and orientation without patient removal represented 18.3% of the cases, followed by Emergency Care Units, with 5.2% and a lower percentage of private hospitals, with 5.2%.

Table 1 – Incidents assisted by SAMU 192 RN by month. Natal, Rio Grande do Norte, Brazil, 2014

Month	Clinical		Traumatic		Obstetric		Psychiatric		Total	
	n	%	n	%	n	%	n	%	n	%
January	536	16.8	507	15.9	36	1.1	76	2.4	1155	36.3
February	305	9.6	307	9.6	11	0.3	34	1.1	657	20.6
March	299	9.4	304	9.5	14	0.4	31	1.0	648	20.3
April	333	10.5	336	10.5	18	0.6	39	1.2	726	22.8
Total	1473	46.2	1454	45.6	79	2.5	180	5.6	3186	100

Table 2 – Incidents assisted by SAMU 192 RN by gender of victims. Natal, Rio Grande do Norte, Brazil, 2014

Gender	Clinical		Traumatic		Obstetric		Psychiatric		Total	
	n	%	n	%	n	%	n	%	n	%
Male	774	24.3	1127	35.4	0	0	111	3.5	2012	63.2
Female	686	21.5	307	9.6	79	2.5	68	2.1	1140	35.8
Data not available	13	0.4	20	0.6	0	0	1	0	34	1.1
Total	1473	46.2	1454	45.6	79	2.5	180	5.6	3186	100

Table 3 – Incidents assisted by SAMU 192 RN by age group of victims. Natal, Rio Grande do Norte, Brazil, 2014

Age group	Clinical		Traumatic		Obstetric		Psychiatric		Total	
	n	%	n	%	n	%	n	%	n	%
<1	14	0.4	1	0	0	0	0	0	15	0.5
1-4	35	1.1	12	0.4	0	0	0	0	47	1.5
5-14	35	1.1	57	1.8	1	0	1	0	94	3.0
15-24	97	3	372	11.7	44	1.4	27	0.8	539	16.9
25-34	134	4.2	388	12.2	25	0.8	51	1.6	598	18.8
35-44	162	5.1	235	7.4	7	0.2	47	1.5	451	14.2
45-54	198	6.2	162	5.1	0	0	27	0.8	387	12.1
55-64	178	5.6	74	2.3	0	0	16	0.5	268	8.4
65-74	197	6.2	55	1.7	0	0	2	0.1	255	8
≥75	394	12.4	57	1.8	0	0	2	0.1	453	14.2
Data not available	29	0.9	41	1.3	2	0.1	7	0.2	79	2.5
Total	1473	46.2	1454	45.6	79	2.5	180	5.6	3186	100

Table 4 – Incidents assisted by SAMU 192/RN, by time of day. Natal, Rio Grande do Norte, Brazil, 2014

Time	Clinical		Traumatic		Obstetric		Psychiatric		Total	
	n	%	n	%	n	%	n	%	n	%
Between 00:00 and 05:59	226	7.1	182	5.7	19	0.6	27	0.8	454	14.2
Between 06:00 and 12:00	439	13.8	346	10.9	20	0.6	48	1.5	853	26.8
Between 12:01 and 18:00	456	14.3	457	14.3	24	0.8	66	2.1	1003	31.5
Between 18:01 and 23:59	352	11	469	14.7	16	0.5	39	1.2	876	27.5
Total	1473	46.2	1454	45.6	79	2.5	180	5.6	3186	100

Table 5 – Incidents assisted by SAMU 192 RN by type of support vehicle. Natal, Rio Grande do Norte, Brazil, 2014

Type of support vehicle	Clinical		Traumatic		Obstetric		Psychiatric		Total	
	n	%	n	%	n	%	n	%	n	%
Basic support units	1319	41.4	1321	41.5	66	2.1	174	5.5	2880	90.4
Advanced support units	132	4.1	85	2.7	12	0.4	5	0.2	234	7.3
Rescue units	21	0.7	47	1.5	1	0	1	0	70	2.2
Aeromedical transport	0	0	0	0	0	0	0	0	0	0
Motorcycle	1	0	1	0	0	0	0	0	2	0.1
Total	1473	46.2	1454	45.6	79	2.5	180	5.6	3186	100

● DISCUSSION

A similar⁽¹⁰⁾ study conducted in the same Brazilian state in 2009 analyzed incidents assisted by the service and revealed similar proportions, with 53.6% of cases due to clinical causes. This study shows that the population of Rio Grande do Norte still presents repressed demands that are not being met by the health network and are thus cared for by prehospital services, resulting in a prevalence of clinical incidents. In another study conducted in a city in the state of São Paulo, in 2010, 50.7% of services were due to clinical causes⁽³⁾.

The search for emergency prehospital and hospital care services is influenced by social and epidemiological facts and aspects relative to the organization of the health system and insufficient structuring of services. For many users, these services represent a viable care alternative and are a point of entry into the health system, allowing them access to higher-technology care and case-resolving capacity. Thus, the frequent search for emergency services can indicate both barriers to the use of the health network and the vulnerability of people who need sudden care⁽¹¹⁾.

Other researchers have confirmed these findings, stating that such frequent use is also an issue for emergency services in developed countries, such as the United States, Canada and England. These types of services are in constant growth, both in terms of quantity of users and the number of reoccurrences, thus being a matter of interest and concern for healthcare managers. However, existing research is limited to describing sociodemographic characteristics, without analyzing the reasons for such repeated search for emergency care. In Brazil, there are still few studies on the theme, demonstrating a gap in knowledge⁽¹²⁻¹⁴⁾.

Regarding the gender of victims, a similar study conducted about the SAMU in the city of Cuiabá, Mato Grosso, Brazil, produced similar results. Of the 1,893 victims assisted, 62.3% were male and 32.3% were female⁽¹⁵⁾.

Traumatic causes were four times more prevalent among men than women. This can be attributed to the fact that men tend to be more exposed to violent incidents, making them more vulnerable to health

problems due to external causes, such as speeding and the use of alcohol and other substances⁽¹⁵⁾.

A study conducted with traffic accident victims in the city of Picos, Piauí, Brazil, showed that of the 80 individuals that composed the sample, 71 (88.7%) were male and 9 (11.2%) were female. Furthermore, the most predominant age group of victims was between 18 and 29 years old, with 40%⁽¹⁶⁾.

Regarding the age of victims, our data corroborate the statistics of the Rio Grande do Norte State Health Plan (2013), which show that external causes correspond to the third most common cause of morbidity and mortality in the state. Of these, 48.9% of deaths were caused by accidents and 37.5% by assaults. The percentage of assaults confirms the growth of violence over the last few decades, investigated by researchers in the areas of epidemiology and demography^(10,17).

Analyzed separately, the number of clinical urgencies increased with age, while traumas decreased. Proof of this were patients over the age of 75, among which clinical causes corresponded to 14.2%, while traumas corresponded to only 1.3%.

According to the Brazilian Institute of Geography and Statistics (IBGE), Brazil's population pyramid has presented relevant changes in the last few years, indicating population ageing reflected by reduced fertility rates. This can be observed in the greater number of clinical occurrences among the population aged 75 years and older⁽¹⁸⁾.

In terms of the time of day of services, other studies have presented similar findings. The amount of traumas was more prevalent at the end of the afternoon and evening, when there is a greater circulation of vehicles due to work-home or school-home commutes⁽¹⁵⁾.

These results are explained due to the great flow of people coming and going from their regular work and study daytime activities, while at night, such movement is related to parties and incidents, in addition to the consequential ingestion of alcoholic beverages associated with driving⁽¹⁹⁾.

With regards to type of support vehicle, our findings were similar to those of a study conducted in Catanduva, São Paulo, Brazil, in which Basic Support Units accounted for 90% of the care provided⁽³⁾.

These results indicate that a great part of prehospital emergency mobile care is related to less severe cases. Researchers in the area state that, according to the perception of health professionals who work in these emergency services, frequent users present diffuse complaints that do not warrant the service and that should have been resolved at other levels of care, generally primary care. These users tend to be stigmatized, as their care is considered a waste of time and an inadequate use of emergency service resources⁽²⁰⁾.

In addition to these Basic Support Vehicles, others were also activated. In 2.2% of incidents, Rescue Units were used, a vehicle composed of teams trained to handle situations in which victims are trapped in the wreckage and need to be rescued with specific techniques.

Among the services to which SAMU patients were transferred, public hospitals accounted for 70.3% of the cases, of which 36.6% were due to traumatic causes and 26.7% to clinical causes. The presence of more than one support vehicle on location and orientation without patient removal represented 18.3% of the cases, followed by Emergency Care Units, with 5.2% and a lower percentage of private hospitals, with 5.2%.

These findings are not in line with the structuring of the Brazilian emergency care network, as according to the Ministry of Health, Emergency Care Units should function as intermediary units between Basic Health Units and hospitals, working together with the SAMU to conduct early stabilization of victims. Considering that 74.6% of the cases were transferred to hospitals, we can infer that the structuring of the network is flawed, which leads to impossibility of continuity of care, ratifying a hospital-centric tendency⁽⁹⁾.

According to researchers⁽¹⁰⁾, these results are due to the fragmentation of the healthcare system, which is focused on acute conditions and the exacerbation of chronic conditions. This is not coherent with the current health scenario in which acute problems are declining and chronic conditions are rising.

● CONCLUSION

Epidemiological data and the characterization of incidents demonstrated that of the 3,186 incidents analyzed, there was a predominance of clinical urgencies; with a greater incidence in January; with male victims; individuals aged 25 to 34; assisted by Basic Support Unit and transferred to public hospitals.

Despite the significant number of incidents of traumatic nature, clinical causes accounted for the greatest number of solicitations in the analyzed period, pointing to the need for new health planning and surveillance strategies, ranging from primary care to high complexity health services.

In terms of the incidents assisted by the SAMU, special mention goes to the numerous records filled in inadequately or with illegible handwriting during the period of this study, reflecting one of its limitations.

Therefore, studies of this nature help facilitate the development of public policies directed at the local reality. Such research also contributes to the formulation of health promotion and health damage prevention actions that meet the actual needs of the population, in accordance with the principles of the SUS. Lastly, it represents important input to the planning of team-qualifying actions in this service.

This study may also serve as an instrument to aid in the resource management of the SAMU and other services and to show paths to develop actions directed at the care of urgencies in the state and its municipalities.

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