

CHARACTERISTICS OF THE SERVICE PROVIDED BY THE MOBILE URGENCY SERVICE IN DIFFERENT BRAZILIAN REGIONS

Características do atendimento prestado pelo serviço de atendimento móvel de urgência em diferentes regiões brasileiras

Características del atendimento prestado por el servicio de atención móvil de urgencia en diferentes regiones brasileñas

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How to quote this article:

Zucatti PB, Lima MADS, Pai DD, *et al.* CHARACTERISTICS OF THE SERVICE PROVIDED BY THE MOBILE URGENCY SERVICE IN DIFFERENT BRAZILIAN REGIONS. *Rev Fun Care Online*.2021. Jan./Dec.; 13:790-795. DOI: <http://dx.doi.org/10.9789/2175-5361.rpcfo.v13.8818>

ABSTRACT

Objective: To characterize the care provided by the Mobile Emergency Care Service to the users' demands in different Brazilian municipalities. **Methods:** a cross-sectional study, using systematic observation of 49 visits performed in different Brazilian regions, between July and August 2015. Descriptive and inferential statistics were used. **Results:** clinical demands (42,9%) and Basic Life Support services (65,3%) were predominant to residences (40,8%); 71,4% of the users were transferred and 51% were referred to emergency units, with 89,8% of the visits. The response time was 12 minutes, with no differences between regions, but it was lower in transfers to Emergency Care Units ($p < 0,05$). Hands' hygiene was non-existent in 54,3% of cases. **Conclusion:** the analysis of the care provided to the users requires reorientation of care planning for quality and safety improvement.

Descriptors: Emergency medical services, Prehospital care, Emergency care, Health services needs and demand, Nursing.

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RESUMO

Objetivo: Caracterizar o atendimento do Serviço de Atendimento Móvel de Urgência às demandas dos usuários em diferentes municípios brasileiros.

Métodos: pesquisa transversal, que utilizou observação sistemática de 49 atendimentos realizados em diferentes regiões brasileiras, entre julho e agosto de 2015. Aplicou-se estatística descritiva e inferencial. **Resultados:** predominaram demandas clínicas (42,9%) e atendimentos de Suporte Básico de Vida despachado (65,3%) às residências (40,8%); 71,4% dos usuários foram transportados e 51% encaminhados a unidades de emergência, com registro de 89,8% dos atendimentos. O tempo resposta foi de 12 minutos, sem diferenças entre as regiões, mas menor nas transferências para Unidades de Pronto Atendimento ($p < 0,05$). A higienização das mãos pelos profissionais foi inexistente em 54,3% atendimentos. **Conclusão:** a análise dos atendimentos às demandas dos usuários suscita planejamento da assistência para reorientação da atenção e melhoria da qualidade e segurança.

Descritores: Serviços médicos de emergência, Assistência pré-hospitalar, Socorro de urgência, Necessidades e demandas de serviços de saúde, Enfermagem.

RESUMEN

Objetivo: Caracterizar la atención del Servicio de Atención Móvil de Urgencia a las demandas de los usuarios en diferentes municipios brasileños.

Métodos: investigación transversal, con observación sistemática de 49 atendimientos en diferentes regiones brasileñas, entre julio y agosto de 2015. Se aplicó estadística descriptiva e inferencial. **Resultados:** predominaron demandas clínicas (42,9%) y atendimientos de Soporte Básico de Vida despachado (65,3%) a las residencias (40,8%); 71,4% de los usuarios fueron transportados y 51% encaminhados a unidades de emergencia, con registro de 89,8% de los atendimientos. El tiempo de respuesta fue de 12 minutos, sin diferencias entre regiones, inferior en las transferencias a Unidades de Pronto Atención ($p < 0,05$). La higienización de las manos por los profesionales fue inexistente en 54,3% de atendimientos. **Conclusión:** el análisis de las atenciones a las demandas de los usuarios suscita planificación de la asistencia para reorientación de la atención y mejora de calidad y seguridad.

Descriptorios: Servicios médicos de urgencia, Atención prehospitalaria, Socorro de urgencia, Necesidades y demandas de servicios de salud, Enfermería.

INTRODUCTION

The Mobile Emergency Care Service (SAMU), established by National Emergency Care Policy, has been working with the Single Health System with emergencies and prehospital care for the last 15 years. On its first years, municipal-wide services prevailed, later regional ones, with an estimated coverage of 53.9% of population, besides implementation having differences between states.¹

Clinical conditions, vulnerability, and risk decide what is prioritized by SAMU's Medical Priority Dispatch Centrals.² There are more than a hundred centrals in all country.

Recent researches emphasize the importance of SAMU when consolidating the Emergency Care Network.³⁻⁴ However, some problems are still seen regarding the care of serious cases, even this being SAMU's primary service.

On the international scene, studies show the growth of mobile prehospital care, with a 23% increase from 2007 to

2011 in Australia.⁵ In the United Kingdom, rising patient demand in emergency services from 2001 to 2011 exceeded the available resources and made the units overcrowded. As a strategy to solve this problem, two new professionals started working in the mobile services - *Emergency Care Practitioners* and *Paramedic Practitioners* - and they seemed to be more prone to solve the occurrences in the prehospital environment than the conventional ambulance crews.⁶ Studies also showed that the decrease in the number of referrals to the emergency services, supporting patient satisfaction and safety, is statistically linked to resolutivity and to the type of professional in prehospital care.

The Brazilian studies that analyzed SAMU agree that clinical occurrences are the most demanding, followed by external causes.^{2,8-9} It was also shown the incomplete records regarding clinical, social and user characterization that go beyond the main complaint.²⁻³

So, studies focused on broader analysis regarding national territory and mobile prehospital care characteristics, as well as not restricted to record evaluation only, represent gaps in the literature regarding care provided by SAMU. Furthermore, the lack of a regional and national unified information system interferes in an analysis of services organizations regarding teams, working conditions, and care.¹⁰ Given the above, the question was: Which are the characteristics of the care provided by SAMU according to the needs of the users in different Brazilian municipalities? This study aims to characterize the care provided by SAMU according to the needs of the users in different Brazilian municipalities.

METHODS

This study used secondary data from the non-participant systematic observation step, of the research "Techno-assistential modeling and production of care in emergencies and critically ill patients: integrated studies on Intensive Care Unit and SAMU from the perspective of integrality".

The research strategy was observational, cross-sectional and with a quantitative approach. The sample from the primary study consisted of 43 Medical Priority Dispatch Centrals and 79 Decentralized Bases. In these, pondering their peculiarities and in order to track the whole user course in the service, just the first ones were considered to the non-participant systematic observation step, and through sortition 15 Medical Priority Dispatch Centrals were selected.

For this study, the sample used was the non-participant systematic observation step from the primary study, defined by time sampling: the most non-participant systematic observation in eight hours at the selected Medical Priority Dispatch Centrals.

Based on this criterion, the sample consisted of care

provided by SAMU in national territory, of which 13 (26,5%) in the North of the country, in Altamira, Manaus and Palmas; 13 (26,5%) in the Northeast, in Aracaju, Juazeiro, São Luís and Teresina; 8 (16,3%) in the Southeast, in Embu das Artes, Fernandópolis, Ribeirão Preto and Vitória; 8 (16,3%) in the South, in Apucarana and Florianópolis; and 7 (14,3%) in the Middle West, in Goiânia and Cuiabá.

Data collect was guided through open and closed questions made by the researchers, aiming to broach the quantitative variables from the research: reason, vehicle, place, record, outcome, interaction between the Medical Priority Dispatch Central and the care team, SAMU's actions regarding the care patients will undergo, facilities and difficulties related to the care patients will undergo, use of Personal Protective Equipment by SAMU's teams, patient safety goals, time elapsed between the call and the arrival of the team, time elapsed between the arrival of the team and the outcome, and time elapsed between the arrival of the ambulance and the care patients will undergo.

Researchers went to the field on a randomly chosen day, between July and August 2015 to follow the care which was initiated with the call, then the place, watching the care provided, and ending with the team going back to the base.

That said, for this study, after selecting the variables, information was put in a new database created on *Microsoft Excel*[®].

Quantitative data analysis as based on descriptive statistics. Quantitative variables were described through measures of central tendency and dispersion, being the continuous asymmetric described by median and interquartile range. Categorical variables were described with absolute and relative frequency. The *Kruskal-Wallis* and *Mann-Whitney* tests were used at the 5% significance level ($p < 0,05$) through the software *Statistical Package for the Social Sciences* version 17.0.

The project was approved by the Health Research Ethics Committee on March 4th, 2015 (document n° 973.066), having Certificate of Presentation for Ethical Consideration 39013314.1.0000.5327. The study was conducted according to the guidelines and regulatory standards for research involving human subjects described in Resolution 466/12 from the Brazilian National Health Council.¹²

RESULTS

Among the 49 calls, we can highlight the clinical demands and external causes, 21 (42,9%) and 18 (36,7%) respectively. Regarding the symptoms, the main complaints are in **Chart 1**.

Chart 1 – Care according to the main complaints.

Symptoms	N	%
Clinicals		
Syncope	7	33,3
Convulsion	3	14,3
Alteration of consciousness	2	9,5
Chest pain	2	9,5
Cardiac arrest	2	9,5
External causes		
Transport Accidents	7	38,9
Poisoning by intentional drug exposure	4	22,2
Falls	3	16,7

Considering the resource sent to the place, the Basic Life Support team was sent to 32 (65,3%) of them. In 8 (16,3%) situations, a second vehicle was sent to the place – 6 (75%) patients had care by professionals of technical level or higher in nursing and 2 (25%) had care by the Basic Life Support team, and them by the Advanced Life Support team. It was also evidenced that in the Northeast part of the country, 3 (75%) situations with the Advanced Life Support team also had the professional of technical level in nursing, and in Florianópolis the Advanced Life Support team is always sent, regardless the case.

The main places where care happens are the residence and public highway, with 20 (40,8%) and 14 (28,6%) calls, respectively. SAMU worked with other services, such as the municipal guard, the military police and / or the fire department in 5 (10,2%) calls.

There was a record of the care in 44 (89,8%) of the situations. All records were made manually, 38 (86,4%) in form / report / occurrence report pre-established. It was evidenced there is no standard to make the records along the national territory.

The care outcome regarding user transfer can be seen in **Chart 2**.

Chart 2 – Care distribution according to the outcome

Outcome	N	%
User transferred		
Emergency hospital care	25	51,0
Emergency Care Unit	7	14,3
Others	3	6,1
User not transferred		
User stable	5	10,2
Decease	4	8,2
Care not performed	4	8,2
User refuses to be transferred	1	2,0
TOTAL	49	100

35 (71,4%) users were transferred and 14 (28,6%) weren't. Most users were transferred to emergency hospital services. Among them, there were patients who were stable, at-risk and out of risk. Six (17,1%) of them were out of

risk. Among the patients not transferred, 4 (28,6%) were configured as on-site incidents - user removed prior to SAMU's arrival calls canceled.

Among the patients who were transferred, in 26 (74,3%) the reference service was predetermined – confirmed by the Medical Priority Dispatch Central prior to the transfer – and in 12 (34,2%) availability was confirmed. Therefore, the team responsible for continuing the care wasn't informed about the patient's arrival and conditions in 23 (65,7%) situations.

We could identify the unit responsible for continuing the care overcrowded, resistance in receiving the user, and interaction difficulties between SAMU and the reference service teams in 15 (42,8%), 10 (28,6%) and 7 (20,0%) situations, respectively. These aspects were strongly evidenced when emergency hospital services were chosen.

In 4 (11,4%) situations, the reference service suggested by the Medical Priority Dispatch Central did not receive the user because of a lack of equipment or professionals capable of solving the situation and/or difficulty of access, delaying the outcome.

The facilities related to the referral were the predetermined reference service, the responsiveness of the service and the agility in transferring, in 14 (40%), 9 (25,7%) e 3 (8,6%) situations, respectively. However, difficulties could also be seen: in 10 (28,6%) situations availability was not confirmed, in 3 (8,6%) the unit was overcrowded, and in 2 (5,7%) transfer of non-urgent patients.

In 2 (4,1%) situations it was identified risks to the safety of the professional, who delayed the care. During care, professionals wore Personal Protective Equipment such as gloves, uniforms and masks correctly, in 45 (91,8%), 44 (89,8%), and 18 (36,7%) situations, respectively. They also had signaling cones in 17 (34,7%) situations, kneepads in 3 (6,1%), glasses in 1 (2,0%), and helmets with flashlight in 1 (2,0%) as Personal Protective Equipments.

The 35 transfers were evaluated emphasizing the patient's safety: 32 (91,4%) users were correctly identified; communication between health staff was effective in 30 (85,7%) situations; prescription, use, and administration of medication were observed in 17 (48,6%) situations and, in general, in a proper way; hands' hygiene was non-existent in 19 (54,3%) situations, and when it was done, it was in a poor way; equipment and ambulance-related cleaning and asepsis were not performed in 17 (48,6%) situations, and in 13 (37,1%) situations there were falls.

The time elapsed between the call and the arrival of the team was an average of 12 minutes (3 - 45 minutes), and the differences between care times were not statistically significant between regions ($p > 0,10$), but the time elapsed between the call and the outcome and between the arrival of the ambulance and the outcome was shorter, $p = 0,024$ and $p = 0,045$ respectively when the place responsible for continuing the care was the Emergency Care Unit because the emergency hospital services were not available.

DISCUSSION

The predominance of clinical demands was also identified in other studies with numbers between 41,1% and 56,25%.¹³⁻¹⁵ However, in a study made in Cuiabá, it was observed that the occurrence profile obtained a higher index of traumatic causes, 47%.¹⁶

Among the external causes, the highest incidence of traffic accidents was similar, in which car and motorcycle collisions represented 48,3% and motorcycle falls 17%.¹⁶ The results of this study also reinforce the predominance of Basic Life Support, with 87,1% and 90,4% of the situations.^{13,15}

Similarly, the findings allow corroboration with the transfer of 70,5% patients to a reference service.¹⁶ However, a study made in Santa Catarina identified failures on up-to-date information about available beds and vehicles. The same study mentions resistance in receiving the user because the unit responsible for continuing the care was overcrowded.⁴

Regarding the outcome, the results showed that ambulances are sent to situations where the Mobile Emergency Care Service is not needed, questioning the use of this resource and the need for investments to orientate the population about the truthfulness of the information passed on in the call. Facing the finding that a little over a quarter of the patients were not transferred, a study in the Northeast of Brazil observed more than one vehicle in the situation and orientation without transferring in 18,3% situations.¹⁵ Barriers generated by ignorance about the real function of the Mobile Emergency Care Service were pointed out by nurses from Piauí, where people call the service because they want efficient and resolute care capable of transferring them to the healthcare system.¹⁷

Still regarding the outcome, an international study discusses the effectiveness of the mobile prehospital care in solving all the problems without transferring the patient to the emergency services, because as in this study, the international scene also shows the emergency hospital services as the main units that receive the patients from mobile emergencies.

Regarding patient safety, hands' hygiene is essential, preventing and controlling infections.¹⁸ However, a study made in northwestern Paraná observed that 86,52% of nursing professionals did not have effective knowledge about hands' hygiene, this practice in prehospital care being less appreciated because of the professionals' concern with time.

Research in the Brazilian regions showed that some of them have a high response time, more than 20 minutes.⁴ In Porto Alegre, the response time was an average of 31 minutes.²⁰ The lack of ambulances is one of the factors making the response time high and unsatisfactory.²¹

However, there is no scientific evidence regarding the standard time for prehospital care. Studies show deconstruction of the golden hour in trauma, given the

importance of cautious transfer, reducing the risk of traffic accidents.²²

CONCLUSIONS

Based on the above, this study characterized the care provided by the Mobile Emergency Care Service to the users' demands in different Brazilian municipalities. The study confirms researches about care profile and use of ambulances, adding that the difficulties of the Mobile Emergency Care Service with the unit responsible for continuing the care are a problem in all Brazilian regions, as well as the need for continuing education of the professionals involved since their performance is related to the deficiencies found.

The Mobile Emergency Care Service response was an average of 12 minutes and the differences between care times were not statistically significant between regions, but it was shorter when the place responsible for continuing the care was the Emergency Care Unit because the emergency hospital services were not available.

Special attention is paid to the purpose of the service and patient safety. The findings regarding patient safety in the Mobile Emergency Care Service show the urgency of investments in records, identification, communication, fall prevention and infection prevention. Specific studies on the subject are indicated.

The limitations related to the representativeness of the sample are highlighted, however, the findings bring important implications about the reorientation of care planning for quality and safety improvement.

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Received on: 01/04/2019
Required Reviews: 13/08/2019
Approved on: 14/10/2019
Published on: 27/04/2021

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The authors claim to have no conflict of interest.