

# Evaluation of satisfaction of users assisted by prehospital mobile emergency care service

## *Avaliação da satisfação dos usuários atendidos por serviço pré-hospitalar móvel de urgência*

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**ABSTRACT** The aim of this study was to evaluate the satisfaction of the users assisted by the Mobile Emergency Care Service of the state of Rio Grande do Norte. It is a transversal, analytical and quantitative research, carried out from January to June of 2016, with 384 users. Satisfaction was obtained in structure and process. The indicator of structure that generated more dissatisfaction was the comfort of ambulances, and of the process was the response time. It is concluded that users are, mostly, satisfied with the state service, however, user satisfaction surveys are always necessary for the constant monitoring of this service.

**KEYWORDS** *Patient satisfaction. Prehospital care. Health evaluation. Patient-centered care.*

**RESUMO** O objetivo deste estudo foi avaliar a satisfação dos usuários atendidos pelo Serviço de Atendimento Móvel de Urgência do estado do Rio Grande do Norte. Trata-se de pesquisa transversal, analítica e quantitativa, realizada de janeiro a junho de 2016, com 384 usuários. Obteve-se satisfação na estrutura e no processo. O indicador de estrutura que gerou mais insatisfação foi o conforto das ambulâncias, e o de processo foi o tempo resposta. Conclui-se que os usuários, em sua maioria, estão satisfeitos com o serviço do estado, porém, pesquisas de satisfação dos usuários são sempre necessárias para o monitoramento constante desse serviço.

**PALAVRAS-CHAVE** *Satisfação do paciente. Assistência pré-hospitalar. Avaliação em saúde. Assistência centrada no paciente.*

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## Introduction

The satisfaction of the user can be conceptualized as a relation between the expectations and perceptions of the user about the care received by a health service, which demonstrates the cognitive and affective evaluation of that according to previous experience<sup>1</sup>.

The practice of evaluating the quality of health services through a survey of users has spread since the 1970s, in Europe and the United States, with the objective of achieving better clinical results through adherence to treatment, in three dimensions: attendance at consultations; acceptance of recommendations and prescriptions; and adequate use of medicines<sup>2</sup>.

With the quality model proposed by Donabedian<sup>3</sup>, the evaluation of user satisfaction was added to the evaluation elements of the quality of health services, along with the evaluation of the doctor and the community. The quality began to be observed from these three angles, in a complementary way and, at the same time, independent. The quality concept developed by Donabedian<sup>3</sup> allowed us to move forward to incorporate non-specialists (users) in the definition of parameters and in the measurement of the quality of the services.

The satisfaction of the users is a way of evaluating the quality of service and care, whose information can be used to analyze the structure offered, the processes performed and the results achieved<sup>1</sup>.

In Brazil, surveys about the satisfaction of the user in the evaluation of health services, as part of planning and evaluation processes, became more common in the second half of the 1990s, with the consolidation of social control in the sphere of the Unified Health System (SUS) and with the participation of the population in the evaluation and planning course<sup>4</sup>.

In this sense, the Country has been presenting advances in policies that attempt to restructure and qualify health services. Among them, the National Program for

the Evaluation of Health Services (PNASS) emerged, which originated in 2004, based on the expansion of the National Program for Evaluation of Hospital Services (PNASH), with the objective of evaluating the totality of health services which benefited from financial resources derived from programs, policies and incentives of the Ministry of Health to invest in the following areas: structure, process, result, care production, risk management and user satisfaction in relation to the care received from health services<sup>5</sup>.

In many countries, especially in developing countries, the urgency and emergency sectors are identified as deficient and problematic areas within the health system, in which the guidelines for decentralization, regionalization and hierarchy are little implemented, attending beyond its installed capacity, which represents a serious and relevant health system problem, especially in developing countries. The progressive worsening of this situation amplifies the discussions about the factors related to the chaotic situation of emergency care in Brazil<sup>6,7</sup>.

The Emergency Mobile Care Service (Samu), as an authorizing service of assistance in emergency cases, is not outside this reality. The professionals working in these services experience lack of materials, lack of safety, financial limitations, insufficient provision of training for the teams, and stressful factors during the process of assisting victims in different situations, whether clinical or traumatic<sup>2</sup>.

Among the various components of the health system in the world, urgency and emergency services were considered as a priority in the qualification process, as they were recognized as one of the main sources of complaints by the population. International studies bring the implementation of a structured network of emergency and use of ambulances with remote medical regulation as axes that can minimize this phenomenon<sup>8,9</sup>.

In this way, this study is relevant, since it is believed that this evaluation may contribute



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to the creation of managerial strategies in order to enhance the quality of care. Moreover, the fact that, so far, few published studies that deal with this subject in the Country have been found to have stimulated its execution. Therefore, this study aims to: evaluate the satisfaction of users served by a Pre-hospital Emergency Mobile Service in the state of Rio Grande do Norte.

## Methods

This is a cross-sectional research, analytical, with quantitative approach. Data were collected at the Monsenhor Walfredo Gurgel Hospital Complex (HMWG), specifically, at the Clóvis Sarinho Emergency Room (PSCS), after the service and stabilization of the users by the Samu and HMWG/PSCS professionals.

Samu serves about 800 users per month, therefore, it is estimated that this service makes about 9600 attendances per year. For the calculation of the sample<sup>10</sup>, a sampling

error of 5% was considered. The sample consisted of 384 users served by Samu, according to the following eligibility criteria: age equal to or greater than 18 years old; and, in the case of coma, mental confusion, impossibility of verbal communication or death, be with legally responsible companions to sign the Informed Consent Term (ICF). Users and/or companions who did not have the cognitive conditions to answer the questionnaire were excluded.

For data collection, the instrument already validated by specialists was used, entitled Instrument of Evaluation of Satisfaction of users attended by Prehospital Care (AS-APH)<sup>11</sup>. The instrument used contains personal data (gender, age, origin and level of education), type of occurrence (traumatic or clinical) and 12 indicators of user satisfaction, of which 4 are structure (ambulance maintenance status, user comfort (access, privacy, humanization, guidelines on procedures, relationship between user and team, response time, multi-professional articulation and resolving service), as shown in *chart 1*.

Chart 1. Evaluation Instrument for Satisfaction of users attended by Prehospital Assistance (AS-APH). Natal (RN), Brazil, 2016

<b>A. USER IDENTIFICATION</b>				
A2.	Sex	1( ) Male	2( ) Female	( )
A3.	Age	_____years		( )
A4.	Origin (city/town)	_____		
A5.	Color/Race	1( ) White	4( ) Yellow	( )
		2( ) African American	5( ) Indigenous	
		3( ) Brown		
A6.	Degree of schooling	1( ) Non-literate	6( ) Incomplete high school	( )
		2( ) Incomplete Elementary School I	7( ) Complete high school	
		3( ) Complete Elementary School II	8( ) Incomplete higher education	
		4( ) Incomplete Elementary School II	9( ) Complete higher education	
		5( ) Complete Elementary School II	10( ) Post-graduation	
A7.	Religion	1( ) Catholic	4( ) Agnostic	( )
		2( ) Evangelical	5( ) Other (specify)	
		3( ) Spiritist		
A8.	Marital status	1( ) Married/Consensual Union	4( ) Widower	( )
		2( ) Single	5( ) Divorced	
		3( ) Separate		
A9.	Occupation	_____		
A10.	Income in minimum salaries	1( ) < 1 salary	3( ) 3 a 5 salaries	( )
			4( ) 6 a 10 salaries	
<b>B. DADOS SOBRE O EVENTO</b>				
B1.	Date of the event	___/___/___	Time:_____	( )
B2.	Date of service	___/___/___	Time:_____	( )
B3.	Day of the week in which the event occurred	1( ) Sunday	5( ) Thursday	( )
		2( ) Monday	6( ) Friday	
		3( ) Tuesday	7( ) Saturday	
		4( ) Wednesday		
B4.	Who transported the victim to the hospital?	1( ) BHU	3( ) Rescue Unit (RU)	( )
		2( ) USA	4( ) Helicopter	
B5.	Place of occurrence (city/neighborhood)	_____		
B6.	Time of occurrence	_____		
B7.	Classification of the event suffered	1( ) Traumatic	3( ) Gynecologist-obstetrician	( )
		Which:_____	Which:_____	
		2( ) Clinical	4( ) Psychiatric	
		Which:_____	Which:_____	
B8.	Body region (s) reached on occurrence	1( ) Head/neck	3( ) Abdomen	
		2( ) Chest	4( ) MMSS/II and pelvic girdle	

Chart 1. (cont.)

<b>C. EVALUATION OF SATISFACTION OF THE CARE RECEIVED BY SAMU 192</b>				
<b>Below, are listed aspects about the structure and process for the evaluation of Samu 192. This item must be completed according to the qualification of the service, in accordance with the parameter below:</b>				
<b>1. Terrible</b>	<b>2. Bad</b>	<b>3. Regular</b>	<b>4. Good</b>	<b>5. Excellent</b>
C1.	The state of conservation of ambulances is?			( )
C2.	Was the ambulance comfortable, according to your health needs?			( )
C3.	Has the access to the Samu, by the number 192, been carried out properly?			( )
C4.	Did the ambulance arrive in considerable time to where you were?			( )
C5.	Was the reception provided by the professionals of the Samu 192?			( )
C6.	Do you think the Samu 192 team has transported you to the most appropriate place, according to the nature of your occurrence?			( )
C7.	The safety demonstrated by the staff during your service was?			( )
C8.	During the care, has your privacy been preserved?			( )
C9.	The humanization during the care provided by the team is?			( )
C10.	Have the guidelines on the procedures performed and your health status been provided by the Samu 192 team?			( )
C11.	Your relationship with the professionals of Samu was?			( )
C12.	In your opinion, have you obtained resolution with the service of the Samu 192?			( )
<b>D. YOUR SATISFACTION WITH THE CARE RECEIVED BY SAMU 192 FROM 0 (ZERO) TO 10 (TEN)</b>				
GRADE: _____				

Data collection was performed from January to June 2016. The approach of the patients was based on convenience, in the morning, afternoon and evening shifts, every day of the week. For this data collection, it was necessary the contribution of 12 students of scientific initiation, members of the Research Group Nucleus of Studies and Research in Urgency, Emergency and Intensive Therapy (Nepet), under the guidance of the researchers. Training was conducted for guidance on user approach and collection itself.

For the performance of the descriptive and inferential statistical treatment, it was necessary to categorize the variables in two ways. Firstly, the responses for each indicator were presented as a Likert type scale, in five levels: terrible; bad; regular; good; and excellent. In the analysis of the data, the answers: terrible, bad and regular were considered as a new

qualitative variable for 'unsatisfied', while good and excellent, for 'satisfied', referring to the assessment of the quality of care provided, in the vision of users.

In addition, the new variables were classified into quantitative categories for the structure and process indicators. For each item considered appropriate, a point was assigned. As the instrument contained 4 structural items and 8 process items, the total structure dimension ranged from 0 to 4, and the total process dimension ranged from 0 to 8. The total scale varied from 0 to 12. In this configuration, it was considered that cases of the structure dimension would be considered 'satisfied' if they obtained score  $\geq 3$ ; the cases with punctuation  $< 3$  were considered 'unsatisfied'; in the process dimension, would be considered 'satisfied' if they scored  $\geq 6$ ; and cases with a score  $< 6$  were

considered 'unsatisfied'. When analyzing the structure and process dimensions together, it was considered that the user would

be 'satisfied' for scores  $\geq 9$  and 'unsatisfied' for scores  $< 9$ , based on the National Health Services Assessment Program<sup>5</sup> (*chart 2*).

Chart 2. Variables of the study and statistical analysis. Natal (RN), Brazil, 2016

STUDY VARIABLES	CLASSIFICATION	
	QUANTITATIVE	QUALITATIVE
Structure	0 a 4	$\geq 3$ Satisfied $< 3$ Unsatisfied
Process	0 a 8	$\geq 6$ Satisfied $< 6$ Unsatisfied
Structure and Process	0 a 12	$\geq 9$ Satisfied $< 9$ Unsatisfied
STATISTICAL ANALYSIS		
Descriptive	Average and Standard Deviation (SD)	Absolute and relative frequency
Inferential	Mann-Whitney Test	Chi-Square Test

The data collected were double-typed in the Microsoft Excel program and, then, imported into the SPSS program (version 20.0 for Windows), in which they were tabulated and analyzed from descriptive and inferential statistics and presented as tables.

Assuming that the research involved human beings, it followed Resolution nº 466/2012 of the National Health Council<sup>12</sup>. In addition, it was pointed out that prior authorization was obtained from the institution for data collection, and that the study was approved by the Research Ethics Committee of the Onofre Lopes University Hospital (HUOL), in Natal (RN), obtaining a favorable opinion, CAAE: 0025.0.294.051-10.

## Results

With regard to personal characterization, the majority of users were male: 249; the age of users ranged from 18 to 101 years

old, with an average of 52.14 (23.4%); as to origin, 219 (57%) lived in the state capital, and 158 (41.1%) in the interior of the state; and in relation to the level of schooling, the complete high school reached the highest percentage, with 82 (21.4%) of the users.

Regarding the type of occurrence of the visits performed by Samu, in the period from January to June 2016, there was a higher prevalence of traumatic events, 225 (58.6%), and 159 (41.4%) of clinical causes.

The evaluation of the quality indicators showed that the comfort item inside the ambulance had satisfaction of 85.2%, which differs from the other indicators, that present a satisfaction of more than 90%. The process items show that two indicators, multi-professional articulation and time response, had satisfaction lower than 86%, which also differs from other indicators, that present a satisfaction of more than 90% (*chart 3*).

Chart 3. Evaluation of the satisfaction of the user with aspects of care structure and process. Natal (RN), Brazil, 2016

SATISFACTION INDICATORS	UNSATISFACTORY n (%)	SATISFACTORY n (%)	p-value*
<b>STRUCTURE</b>			
Security demonstrated by professional staff	9 (2,3)	375 (97,7)	0,794
Reception	14 (3,6)	370 (96,4)	0,711
Ambulance conservation status	36 (9,4)	348 (90,6)	0,676
Comfort inside the ambulance	57 (14,8)	327 (85,2)	0,109
<b>PROCESS</b>			
User privacy	7 (1,8)	377 (98,2)	0,795
Service resolutivity	19 (4,9)	365 (95,1)	0,700
Humanization	25 (6,5)	359 (93,5)	0,805
Relationship between professional and user	25 (6,5)	359 (93,5)	0,805
Guidance on procedure	34 (8,9)	350 (91,1)	0,783
Access to service	37 (9,6)	347 (90,4)	0,824
Multi-professional articulation	54 (14,1)	330 (85,9)	0,832
Response time	75 (19,5)	309 (80,5)	0,847

\*Chi-Square Test.

There was no statistically significant difference between the event suffered in the evaluation of the quality of the indicators of satisfaction of structure and process, that is, the majority of users who suffered traumatic and clinical events were satisfied with the structure. Regarding the process, there

was also no significant difference. The joint analysis of structure and process also did not indicate a significant statistical difference between the event occurred. For the most part, users were satisfied with the service provided by Samu (*table 1*).

Table 1. Evaluation of the satisfaction of the user with aspects of structure and care process, according to type of event occurred. Natal (RN), Brazil, 2016

VARIABLES		USERS AFFECTED BY TRAUMATIC EVENTS n (%)	USERS AFFECTED BY CLINICAL EVENTS n (%)	p-value*
Structure	Satisfied	208 (92,4)	146 (91,8)	0,795
	Dissatisfied	17 (7,6)	13 (8,2)	
Process	Satisfied	209 (92,9)	148 (93,1)	0,621
	Dissatisfied	16 (7,1)	11 (6,9)	
Structure/Process	Satisfied	212 (94,2)	148 (93,1)	0,883
	Dissatisfied	13 (5,8)	11 (6,9)	
Total		225 (58,6)	159 (41,4)	

\*Chi-Square Test.

In the evaluation of the average scores, it is noticed that the users are satisfied with the structure, since the averages were superior to three, regardless of the event suffered. In relation to the process, the averages

were above seven, indicating satisfaction of the users. In the joint evaluation of structure and process, the averages were above nine, regardless of the event occurred (*chart 4*).

Chart 4. Evaluation of the quality of the assistance, according to the averages of the structure and process indicators, according to the event. Natal (RN), Brazil, 2016

VARIABLES	USERS AFFECTED BY TRAUMATIC EVENT AVERAGE (SD)	USERS AFFECTED BY CLINICAL EVENT AVERAGE (SD)	p-value*	AVERAGE (SD)
Structure	3,66 (0,70)	3,74 (0,71)	0,947	3,69 (0,70)
Process	7,24 (1,09)	7,33 (1,37)	0,128	7,28 (1,21)
Structure/ Process	10,91 (1,50)	11,07 (1,96)	0,093	10,97 (1,70)

\*Mann-Whitney test.

## Discussion

The personal characteristics of the users served by Samu reinforce another research conducted in Brazil, regarding the sex of the users served. A study carried out in Samu found that, of the 3.186 occurrences, there was a predominance of males. They were 2.012 (63.2%), while the female sex presented 1.140, that is, 35.8% of the cases attended<sup>13</sup>.

Regarding the age group, in a survey about the epidemiological clinical profile of the users of the Emergency Network in the interior of Pernambuco, it can be seen that the age ranged from 30 to 39 years old, the latter being the most representative, with 31% of the entire population sample. Immediately afterwards the interval between 40 and 49 years appears, with 26%<sup>14</sup>.

Regarding the level of education of users, in the investigation of the epidemiological clinical profile of the users of the Emergency Network in the interior of Pernambuco, carried out with 119 users, most had a complete high school education (67%)<sup>14</sup>.

When analyzing the type of occurrence, a study carried out in the same state, in 2014, which analyzed 3.186 occurrences of the mobile prehospital emergency service, showed that 1.473 (46.2%) occurrences attended by the service referred to clinical causes, and 1.454 (45.6%) to traumatic<sup>13</sup>. These numbers differ from the data found in this research. Data collection occurred at a referral hospital for trauma in the state, and this finding was expected.

Analyzing, descriptively, the results related to the structure, it is stressed the positive evaluation of the users, regardless of the type of event suffered, in relation to the safety demonstrated by the professionals, the reception and the state of conservation of the ambulances.

The safety demonstrated by the professional team is a factor that determines the satisfaction of the user assisted by the emergency service, being related to the emotional, technical and social skills of the professionals, who, in emergency situations, will provide a decrease in the level of anxiety patient who is

in a context of strong emotional impact due to the fragility of their situation<sup>15</sup>.

The state of preservation of the ambulance helps in the care provided by the professionals to the patients, and may lead to inadequate assistance to the user, which may reflect their degree of satisfaction<sup>16</sup>.

Despite the satisfaction of the users with structural aspects in general, the user comfort indicator within the ambulance was less satisfactory (85%). Research in New Zealand confirms this finding, demonstrating that 83% of the users served by the prehospital service are satisfied with the comfort offered, as it provides a sensation of relaxation and reduces anxiety<sup>17</sup>.

In the analysis of process indicators, the users of this study, in general, are also satisfied with the service offered. The process indicators that obtained the best evaluation were: privacy, resolution in service, humanization, relationship between user and team, orientation about procedure and access to the service.

Research carried out in Austria reveals that the users attended by the prehospital care service are satisfied with the privacy during the execution of the procedures performed by the team<sup>15</sup>.

In a study with patients suspected of fracture, the procedures performed at the event site were very significant for the users; the dialogue and the relationship between professionals and users has created a relationship of well-being in the vision of the users; humanization was well evaluated<sup>18</sup>.

According to investigation, 50% of the general satisfaction of the user with the service provided is dependent on the relationship of the patient with the team that attends to him/her<sup>19</sup>. The relationship between professional and user refers to the recognition of the subject in an integral and holistic way, where the user is taken into account in their biological aspects, beliefs and values, with consequent benefit to the establishment of a relation of respect, as well

as in the taking of care decisions, between professionals and users<sup>20</sup>.

The process indicators with less satisfactory evaluation were: response time (80.9) and multi-professional articulation.

A study by Shankar, Bhatia and Schuur<sup>21</sup> on the satisfaction of elderly patients with mobile emergency service found that the shorter waiting time, the better the service is evaluated by the users. Users value the rapid response of an ambulance in the scene, whether they are in an emergency or not. Even if the waiting time is short, for the user, it is a long time because he/she is in a state of panic<sup>22,23</sup>.

Researches affirm that the transportation of the patient to the appropriate service directly influences his/her satisfaction with the service, thus providing continuity of care and its resolution<sup>24,25</sup>. The transport of the patient to a hospital that presents problems of overcrowding may have influenced the negative evaluation of this indicator.

In the joint evaluation of the structure and the process, it was noticed that the users are satisfied with the service offered by Samu of the state of Rio Grande do Norte, with a general average of 10.97.

According to the study, it is possible to highlight the social and welfare function of Samu, since its intervention guides and informs the user, anticipates care by the rescue teams and establishes diagnosis early, having resolution at the scene or removing the user to a door of urgency in a secure and agile way, which is recognized by users. The choice of the patient by the emergency services is based on the expectation of fast, safe and more reliable care<sup>26-28</sup>.

## Conclusions

It was verified that the users are satisfied with the assistance provided by Samu of the state of Rio Grande do Norte in the structure and process dimension. With regard to the

overall average of the structure and process evaluation, together, users, regardless of the event suffered, are also satisfied.

Despite the overall satisfaction, the structure indicator that generated the most dissatisfaction was the comfort of the ambulances, and the process was the response time, showing fragile items, that need to be better restructured in the service under analysis.

Given this analysis, it can be observed that, despite all the challenges and difficulties experienced by Samu, the professionals are managing to provide adequate assistance to the population. It is a service that has come to standardize and regulate a fundamental life-saving service, with proven effectiveness.

As a limitation of this study, it is stressed the need to elaborate almost experimental studies on this subject, when a non-participant observer should analyze in real time the structure and process indicators inside the

ambulance, in the act of urgent assistance. However, this experience has not yet been possible due to the reduced internal space of the ambulances, which may make it difficult to carry out emergency care for the users.

Despite this limitation, it is believed that the study can be replicated in other Brazilian cities and states, since the AS-APH instrument used was validated by experts in the field.

It is evident the need for more studies that address this issue, so that the opinion of the user about the service being offered can be known, enabling a better understanding of their needs and demands by the health services.

## Collaborators

The authors state that they have also participated in the design, analysis and interpretation of data of the article. ■

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