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RESEARCH

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## PROFILE OF OCCURRENCE IN THE SERVICE TO ELDERLY PEOPLE BY THE MOBILE PRE-HOSPITAL CARE SERVICE

Perfil de ocorrência no atendimento aos idosos pelo serviço de atendimento pré-hospitalar móvel

Perfil de ocorrência en el servicio a personas mayores por el servicio móvil de atención prehospitalaria

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### ABSTRACT

Objective: to analyze the profile of clinical and traumatological occurrences in elderly assisted by the Mobile Emergency Care Service. Methods: descriptive, cross-sectional, retrospective documentary study, carried out on 359 records of the Mobile Emergency Care Service in a municipality in Paraíba, between July 2017 and July 2018. It was used an instrument involving sociodemographic questions, nature of the occurrence and interventions performed. Data were analyzed using descriptive and inferential statistics. Results: most occurrences involved men aged 80 years or more. Clinical problems predominated in both genders (79.9%), followed by traumatic events (19.4%). Among these, 84.2% were falls, 14.3% accidents and 1.5% drowning. The Advanced Life Support Unit was used in 77.2% of the cases. The prevalent interventions were the installation of peripheral venous access and oxygen therapy. Conclusion: it emphasizes the need to recognize vulnerable groups to understand the aspects related to the occurrences and implement preventive measures.

DESCRIPTORS: Nursing; Emergency Medical Services; Wounds and Injuries; Aged.

### RESUMO

**Objetivo:** analisar o perfil das ocorrências clínicas e traumatológicas em idosos atendidos pelo Serviço de Atendimento Móvel de Urgências. **Métodos:** estudo descritivo, transversal, documental retrospectivo, realizado em 359 registros do Serviço de Atendimento Móvel de Urgência em um município da Paraíba, entre julho de 2017 e julho de 2018. Utilizou-se um instrumento com questões sociodemográfica, natureza da ocorrência e intervenções realizadas. Analisou-se os dados com estatística descritiva e inferencial. **Resultados:** a maioria das ocorrências acometeram homens de 80 anos ou mais. Os agravos clínicos predominaram em ambos os sexos (79,9%), seguido pelas

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ocorrências traumáticas (19,4%). Destas, 84,2% foram quedas, 14,3% acidentes e 1,5% afogamento. A Unidade de Suporte Avançado de Vida foi utilizada em 77,2% das ocorrências. As intervenções prevalentes foram a instalação do acesso venoso periférico e a oxigenoterapia. **Conclusão:** enfatiza-se a necessidade do reconhecimento dos grupos vulneráveis para compreender os aspectos relacionados as ocorrências e implementar medidas preventivas.

**DESCRITORES:** Enfermagem; Assistência Pré-hospitalar; Ferimentos e lesões; Idoso.

## RESUMEN

Objetivo: analizar el perfil de las ocurrencias clínicas y traumatológicas en ancianos atendidos por el Servicio de Atención móvil de Urgencia. Métodos: estudio descriptivo, transversal, documental retrospectivo, realizado en 359 registros del Servicio de Atención móvil de Urgencia en una ciudad de Paraíba, entre junio del 2017 y julio del 2018. Se utilizó un instrumento con preguntas sociodemográficas, naturaleza de la ocurrencia e intervenciones realizadas. Los datos se analizaron con estadística descriptiva e inferencial. Resultados: la mayoría de las ocurrencias acometieron hombres de 80 años o más. Los agravios clínicos predominaron en ambos sexos (79,9%), seguido por las ocurrencias traumáticas (19,4%). De estas, 84,2% fueron caídas, 14,3% accidentes y 1,5% ahogamiento. La Unidad Avanzada de Soporte de Vida fue utilizada en 77,2% de las ocurrencias. Las intervenciones predominantes fueron la instalación de acceso venoso periférico y la oxigenoterapia. Conclusión: Se enfatiza la necesidad de reconocer los grupos vulnerables para comprender los aspectos relacionados con las ocurrencias e implementar medidas preventivas.

Descriptores: Enfermería; Servicios Médicos de Urgencia; Heridas y Traumatismos; Anciano.

## INTRODUCTION

Despite the technological innovations in the health sector, developing countries, like Brazil, struggle for universal assistance in the face of epidemiological changes resulting from population aging. The demands coming from the increased incidence of non transmissible diseases, among which the chronic-degenerative conditions stand out, require the adequacy of health services.<sup>1</sup>

It is evident that the progression of age is accompanied by predictable organic changes, with a tendency to decrease the physiological reserve. Aging contributes to decreased visual acuity, hearing, increased use of medication and changes in gait. Moreover, the elderly person may present restriction in renal, pulmonary, cardiovascular, osteomuscular and endocrine functions.<sup>2</sup> Such alterations favor the occurrence of aggravations to the health of the elderly person, such as the incidence of trauma and aggravation of chronic diseases, thus requiring agile and resolute care.

Among the diseases treated by the Emergency Care Network, trauma is evident, which consists of a lesion of varying extent and intensity, which can be caused by chemical, physical and/or psychic agents, in an intentional or accidental manner, instantaneous or prolonged, producing somatic or psychic disturbances.<sup>3</sup> In the Brazilian scenario, the third largest cause of death in the population in all age groups is trauma due to accidents, losing only to cardiovascular diseases

and malignant neoplasms. Although trauma is more frequent among young people, the elderly, when affected, present important aggravations and consume more resources during treatment, when compared to the individual in adulthood.<sup>4</sup>

As explained in the literature, the most frequent causes of physical trauma in the elderly are falls, burns and traffic accidents, caused by physiological changes in aging such as decreased cognitive responses, memory, motor coordination, as well as decreased visual and auditory acuity, loss of muscle mass with weakness and reduced bone mineral content.<sup>1-3</sup>

Trauma, which can be accidental or an act of violence, is responsible for the high rates of hospitalization in the elderly population and contributes directly to reducing the quality of life, constituting the fifth cause of mortality among individuals over 75 years old.<sup>1</sup>

In addition, elderly people with chronic non-communicable diseases can present acute aggravations, which destabilize the functional balance of the body, requiring early and qualified intervention being one of the reasons for demand for health services. Knowing the epidemiology of these illnesses is fundamental to define prevention policies and reduce early mortality rates.<sup>5</sup>

In view of these needs, the Atendimento Pré-Hospitalar Móvel (APHM) arises, which is used as a gateway to the emergency and emergency network according to the National Policy for Emergency Care. Responsible for receiving this demand, the APHM is an important marker of the quality of the population's health condition. It is also used to identify unusual diseases and their recurrence, such as, for example, a high incidence of car crashes, repeated asthmatic crises, among others.<sup>6</sup>

It is important to emphasize that pre-hospital care must be differentiated when dealing with elderly people, since sudden manifestations of diseases and traumas are more frequent. Besides the severity of the injury, the elderly have specific characteristics, such as: decrease of physiological reserves, associated chronic diseases and drugs of continuous use, which demand a differentiated care in relation to their needs.<sup>7</sup>

In the face of accelerated demographic aging, there is a need to understand the demands for care required by the elderly population in the context of emergency and pre-hospital services. Through the design of the main characteristics of the event, it becomes possible to subsidize preventive health actions that seek to minimize the occurrence of such incidents among the elderly population, since these have a reduced capacity for recovery, high rates of morbidity, mortality and institutionalization, culminating in high financial and social cost. Thus, the objective of this work is to analyze the profile of clinical and traumatological occurrences in elderly people attended by the Serviço de Atendimento Móvel de Urgências (SAMU).

## METHOD

Descriptive study with transversal delineation, of the retrospective documental type, carried through from secondary sources proceeding from the services rendered

by the Mobile Urgent Care Service of the city of João Pessoa, Paraíba.

We analyzed the records that came from the occurrences involving elderly people attended in the period from July 2017 to July 2018, totaling a population of 4,331. The sample determination was of the probabilistic type, through the simple sampling technique. The sample was delimited considering the following formula:  $n = Z^2 PQ/d^2$ , being  $n$  = minimum sample size;  $Z$  = reduced variable;  $P$  = probability of finding the studied phenomenon;  $Q = 1 - P$ ;  $d$  = desired precision. We adopted  $p = 50\%$ , because it is a multidimensional evaluation, and 5% sample error parameter.

For this purpose, it was established as criteria for inclusion of the study individuals of both sexes aged 60 years or more. The survey excluded from the study those forms that contained a high number of underreported information and those in which the information was illegible. Finally, the sample consisted of 359 forms, which corresponded to the minimum sample size.

The data collection was performed in October 2018 by nursing students through the analysis of medical regulation forms, which were collected at the Serviço de Arquivo Médico e Estatística (SAME) of SAMU 192 Regional João Pessoa. For this purpose, it was adopted a data collection instrument contemplating questions pertinent to the objectives proposed for the study, considering the socio-demographic data of the victim as well as the nature of the occurrence and the interventions performed in the pre-hospital environment. The variables considered in this cutout of the research were: gender and age of victims, mechanism of trauma, unit for care, actions taken by the team and fate of the victim.

The analysis of the data was carried out in a quantitative approach using descriptive statistics of a univariate nature for all variables, including measures of frequency, position and dispersion. For comparison of the main categorical variables, the Chi-square Test was used, according to the objectives proposed for the study. The data were analyzed through the Statistical Package for the Social Sciences (SPSS) version 20.0 computational system, for being adequate to the achievement of the study objectives and for enabling the accuracy and generalization of its results.

It is important to highlight that during the whole research process, especially in the information collection phase, the ethical aspects that rule the research were observed and approved by the Ethics and Research Committee of the University Center of João Pessoa, with opinion number: 2.891.023 of September 12, 2018 involving human beings disposed in the Resolution 466/2012 of the CNS/MS/BRASIL, especially the secrecy and confidentiality of information.

## RESULTS

When analyzing the care provided by SAMU, the predominance of (190; 52.9%) male elders, aged 80 or more (138; 38.4%), was observed. Regarding the type of occurrence,

it was highlighted those of clinical nature (287; 79.9%), followed by traumatic occurrence (70; 19.4%), in which it is highlighted (302; 84.2%) falls and accidents (51; 14.3%). Regarding the fate of the victim, most were not informed (201; 56%), followed by hospital unit (85; 22.7%). Regarding the destination pre-hospital unit and the shift in which the care occurred, the prevalence of the Basic Support Unit (277; 77.2%) and day shift (257; 71.6%) was observed, as shown in Table 1.

**Table 1** - Characteristics of the services provided by SAMU to the elderly population. João Pessoa, PB, Brazil, 2018

Variable	Categories	n	%
Sex	Male	190	52,9
	Female	169	47,1
Age Group	60-69	119	33,1
	70-79	102	28,4
	80 or more	138	38,4
Type of occurrence	Clinic	287	79,9
	Traumatic	70	19,4
	Psychiatric	02	0,7
Destination	Hospital Unit	85	23,7
	Attended on site and released	63	17,5
	Death on site	10	2,8
	Not informed	201	56,0
Unidade destinada	BHU	277	77,2
	USA	57	15,9
	Motolance	25	7,0
Turno	Daytime	257	71,6
	Evening	102	28,4

In Table 2 it is possible to identify the characteristics of the services provided according to sex. The predominant age bracket for females was 60 to 69 years (74; 43.8%), while for males it was 80 years or older (87; 45.8%). As for the type of occurrence, in both sexes the clinical nature was predominant.

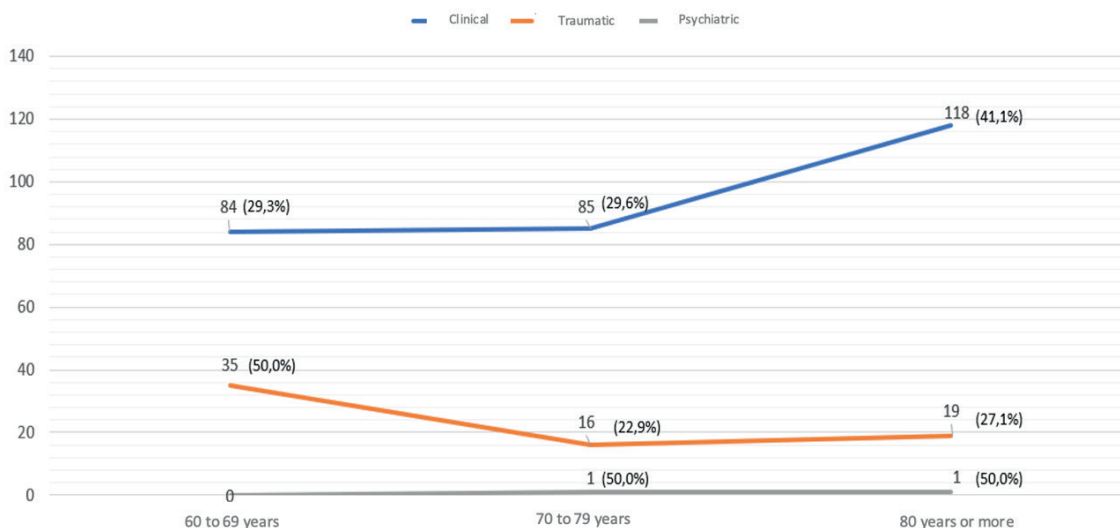
**Table 2** - Characteristics of SAMU services according to sex according to the Chi-square Test. João Pessoa, PB, Brazil, 2018

Variable	Sex				Significance
	Female		Male		
	n	%	n	%	
<b>Age group</b>					p < 0,005
60 to 69 years	74	43,8	45	23,7	
70 to 79 years	44	26,0	58	30,5	
80 years or more	51	30,2	87	45,8	
<b>Total</b>	<b>169</b>	<b>100</b>	<b>190</b>	<b>100</b>	
<b>Occurrence</b>					p = 0,247
Clinical	137	81,1	150	78,9	
Trauma	30	17,8	40	21,1	
Psychiatric	02	1,2	0	-	
<b>Total</b>	<b>169</b>	<b>100</b>	<b>190</b>	<b>100</b>	

Regarding the characteristics of the services provided according to the occurrences, those of clinical nature predominated in elderly people aged 80 years or more (118;

41.1%), traumatic patients aged 60 to 69 years (35; 50%) and psychiatric patients aged 70 to 79 and 80 years or more scored both with 50%, as shown in Figure 1.

**Figure 1** - Characteristics of the services provided by SAMU to the elderly person according to occurrence. João Pessoa, PB, Brazil, 2018



The actions performed by the teams that were observed were: airway opening and cervical control, ventilation, preservation of circulation, evaluation of neurological dysfunction and immobilization. Of these, the ones that stood out the most were those destined to preservation of circulation, especially peripheral venous access, performed (165; 90.7%) of the attendances. Another outstanding action

was the evaluation of neurological dysfunction, in which most of the elderly (266; 74.1%), were aware at the time of arrival of the team to the place of care. It is also opportune to highlight the actions for the maintenance of ventilation, with emphasis on oxygen therapy (76; 80.8%), with the purpose of correcting and attenuating oxygen deficiency or hypoxia, as shown in table 3.

**Table 3** - Distribution of the actions carried out by the SAMU team to the elderly population. João Pessoa, PB, Brazil, 2018

Actions	Categories	n	%
Airway opening and cervical control	Cervical collar	11	45,8
	Orotracheal intubation	07	29,2
	VAS Clearance	03	12,5
	Cricothyroidostomy	02	8,3
	Oropharyngeal cannula	01	4,2
	Total	24	100
Ventilation	Oxygen therapy	76	80,8
	Non-invasive mechanical ventilation	13	13,8
	Invasive mechanical ventilation	05	5,4
	Total	94	100
Preservation of circulation	Peripheral venous access	165	90,7
	DEA	07	3,8
	RCP	05	2,7
	Compressive care	03	1,6
	Manual defibrillator	02	1,2
	Total	182	100
Evaluation of neurological dysfunction	Aware	266	74,1
	Unconscious	19	5,3
	Sleepy	08	2,2
	Oriented	05	1,4
	Something disoriented	03	0,8
	Disoriented	01	0,3
	Not realized	57	15,9
	Total	359	100
Immobilization	Long board	16	39,1
	Immobilization of members	14	33,3
	Dressing	11	26,2
	Use of KED	01	1,4
	Total	42	100

## DISCUSSION

Aging is the result of a natural process that, over the years, imposes structural and functional changes, which can impact on the biopsychosocial context as well as on their quality of life. The numerous morphofunctional changes predispose to various health problems, as well as the occurrence of accidents, which culminate in the need for urgent and emergency care provided by SAMU.

Based on the results achieved in this study, it was found that there was a predominance of care among the elderly males, where 52.9% were men. This was different from a survey conducted in the municipality of Natal, where the majority of the victims assisted by SAMU were women.<sup>8</sup> Studies explain the findings of this study, since the male population is exposed

to various diseases, whether through economic or recreational activities as well as exposure to violence and drugs. In addition, they are not in the habit of attending doctor's offices and performing routine examinations to prevent health problems, among other things, and are therefore more affected by chronic worsening conditions.<sup>6-9</sup>

With respect to the age group, the present study showed a predominance of care among individuals aged 80 years or older (38.4%). These findings are in line with research conducted in the emergency services, which showed that the victims had an average age of 74.2 years with a standard deviation of 9.3 years.<sup>4</sup> It is worth noting that with age, the individual is often unable to respond to the increase in physiological demands, given the small functional reserve of various organs and systems. Structural and functional changes, as well as the coexistence of systemic diseases predispose the elderly to various accidents, especially when compared to those with large physiological reserves, common in other age groups.<sup>4,6,9</sup>

In the analysis of the nature of the occurrences attended by SAMU, it was found that the majority of the attendances were of clinical order, in which 81.1% were related to the female gender. In this context, it is evident that the analysis prevalent in females may be related to greater physical fragility of women, lower amount of lean mass and muscle strength in relation to men of the same age, in addition to the fact that chronic non-communicable diseases, such as cardiovascular, chronic respiratory, cancer and diabetes, are responsible for about 70% of all deaths in the world, as well as high rates of hospitalization among elderly people.<sup>10</sup> In addition, the elderly can present a significant loss of bone mass due to the reduction of estrogen, greater occurrence of chronic diseases such as diabetes, hypertension, stroke, as well as their longer life expectancy, which can favor the appearance of diseases of clinical origin.<sup>11</sup>

Among the occurrences of a traumatic nature (19.5%), falls stand out, corroborating other studies already developed.<sup>6,12</sup> Falls occur as a result of a complex interaction of risk factors that can be classified into biological, such as age, gender and race, fragility, associated diseases such as Alzheimer's, sequelae of stroke, hypertensive peak; and into behavioral, emotional risk factors as well as daily activities. It is worth mentioning that most falls occur in the residence itself or in its surroundings, during the performance of daily activities such as performing domestic activities, walking and going to the bathroom.<sup>12</sup>

Considered as a geriatric syndrome, falls have a significant impact on the lives of elderly people, since they can involve costly and prolonged treatments as well as high mortality rates due to the injuries resulting from the event. The most common injury is the fracture, where the most prevalent trauma is the femur, followed by radio and clavicle injury. In addition to the physical damage, the elderly person who has suffered a fall may be afraid to fall again, which culminates in the decrease or restriction of their daily life activities, directly influencing social isolation and decreased muscle strength. Therefore, the fall is considered an important marker independent of fragility, institutionalization, decline in health and mortality.<sup>13</sup>

Of the characteristics of the services, the present study showed that the majority of the clinical services were destined to victims 80 years old or more (41.1%) while the traumatics affected individuals 60 to 69 years old (50%). In similar studies, it was seen that this age group from 60 to 69 years old, was of significant predominance in trauma care, that is, a profile with independence and autonomy, which provides them active life with participation in social activities, work, leisure, among others that may expose them to trauma situations.<sup>14</sup>

It is noteworthy that men in the younger age groups are more exposed to trauma because they routinely move around the urban perimeter, while the elderly mostly restrict their activities to places closer to their homes. In addition, risky practices are strongly associated with the male gender, which makes men the greatest victims of violence, exacerbated by social inequalities and other adverse conditions.<sup>14</sup>

Although it presents itself as a small part of the occurrences, it is opportune to point out that psychiatric care was concentrated, with 50% of the findings, among the elderly aged 70 years or more. This fact may be directly linked to the consumption of psychoactive substances and diseases such as Alzheimer's. Urgent situations usually affect people with psychiatric disorders who abandon treatment or who do not receive the necessary family and social support, which enables the development of acute psychic illness crises that require fast and effective care.<sup>15</sup>

Regarding the victim's fate, most were not informed, followed by a hospital unit (23.7%). According to the authors, these findings confirm the lack of adherence to pre-defined protocols regarding medical regulation and the entrance doors of the integrated health network where there is a tendency of referral to a reference hospital.<sup>8-9</sup> It is reinforced that these data demonstrate the occurrence of underreporting, in which files were incomplete, making it difficult to register many variables or the reduction of information linked to them. Therefore, it is considered essential to complete the forms, since they can be used by managers with the purpose of preventing health problems. The factors that may justify not filling out this information are the lack of knowledge of the importance of filling out the forms and the seriousness of the occurrence, in which the professional may not have enough time to fill them out.<sup>6</sup>

The advanced support unit (USA) was much less requested when compared to the basic support unit (USB), a result similar to other studies.<sup>9,12</sup> In the present study, in all types of occurrence, the majority of the units intended for the sites were USBs, being predominant in psychiatric care followed by traumatic situations. This result is expected due to the fact that this unit performs less serious care, linked to the type of occurrence, since the USA is only activated in many cases after the evaluation of the victim by the basic support team or in more complex situations.<sup>9</sup>

Although SAMU is a service for victims in emergency and emergency situations, 74.1% of the patients attended were conscious at the time of the team's arrival at the scene. Besides transportation, the APHM performs the first actions at the site with the purpose of stabilizing the victim before his removal.<sup>16-17</sup> Regarding the initial behaviors of care, it

was observed that there was a predominance of actions of circulatory control (90.7%), through peripheral venous access and maintenance of ventilation through oxygen therapy, in 80.8% of cases.

It is important to emphasize that respiratory assistance maintains the oxygenation of patients so that gas exchanges are corrected, preventing hypoxemia and respiratory acidosis, relieving the work of the respiratory muscles, reducing discomfort and allowing the application of specific therapeutic measures. Another important conduct is the establishment of a peripheral venous access, in which it is possible to reestablish volemia and administer medications that make life viable.<sup>18</sup> Such actions performed at the pre-hospital level are fundamental to reduce the risks of death in the so-called Golden hour, which refers to the period after a traumatic injury in which there is greater effectiveness in medical and surgical treatment.<sup>8</sup>

The nursing professionals, for being inserted in certain stages of assistance in the APHM, need to establish a specific care plan for the elderly person, thus contributing to the reduction of sequels. It is important to emphasize that the initial care can define the prognosis of the trauma victim, for this, the importance of nursing care planning based on the specific needs of the elderly population. Therefore, to know the main characteristics of the occurrences destined to SAMU is fundamental for the professional to trace strategies that can solve iatrogenic during the assistance as well as to guarantee an attendance based on the precepts of universality, equality and equity, as the Sistema Único de Saúde (SUS) recommends.

## CONCLUSION

From the results, we identified the prevalence of care in elderly males and those aged 80 years or more. It is also important to highlight the occurrences of a clinical nature in relation to traumatic situations, although the expressive number of falls from their own height among the investigated population was evidenced.

In addition, it was found that most of the services were provided by USB and the therapeutic conducts were aimed at assessing the level of consciousness, circulatory control and ventilation. Regarding access to the health system, most victims were referred to the reference hospital for traumatic emergency care, demonstrating the greater concentration of care provided by the SUS network.

The evaluation of the characteristics of the type of care and its consequences can be useful in identifying the main events that affect the elderly population. It is important that health professionals involved in the care recognize the seriousness of the high frequency of episodes, especially traumatic ones, which should not be treated as normal events of the human aging process, but rather be preventable.

Some limitations were perceived during the development of this work, such as the difficulty in data collection, mainly concerning occurrence forms and identification of these elderly, where it was possible to verify the lack of filling out and legible letter, thus indicating the high rate of sub-notifications. It is necessary the training of the professionals

for the importance of the correct filling out of the forms of attendance, in order to subsidize investigations and the decision making in the services. Another important factor is that there are still few surveys with similar objectives, which made it difficult to compare and discuss the information obtained in this study.

It is also worth mentioning that the findings of this research may serve as a basis for other studies and reflections on the topic, besides providing subsidies for planning, implementing and evaluating public health actions and policies, aiming at preventing such events.

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