

Profile and length of stay of users admitted to the adult emergency department of a public hospital

Perfil e tempo de permanência dos usuários admitidos no pronto-socorro adulto de um hospital público

Perfil y duración de la estancia de los usuarios ingresados en el servicio de urgencias para adultos de un hospital público

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This is a cross-sectional study with a descriptive design and a quantitative analytical approach, carried out in a public teaching hospital, with data from medical records, taking into account the period from November 2017 to January 2018, in order to access the profile and the length of stay of users admitted to the adult emergency room. Descriptive statistical analysis was used to obtain absolute and relative frequency and, subsequently, the binary logistic regression model was performed, through crude analysis, which tested the independent variables and their association with the dependent variable, adopting the value of p<0.20, to carry out the adjusted analysis. 304 subjects were considered, mostly (63.5%) male, coming from pre-hospital care in the municipality, with a lower degree of priority of care and length of stay in the emergency room for more than 24 hours. The results demonstrate that subjects seen by the medical clinic who are referred by spontaneous demand are four times more likely to remain hospitalized for more than 24 hours in the service. The diagnoses attributed to the subjects did not fit into the conditions regarding Primary Care. There is a need to identify the weaknesses of the health care network and to adopt interventions to reduce the length of stay and the saturation of operational capacity.

Descriptors: Health profile; Length of stay; Emergency medical services; Hospitalization.

Trata-se de uma pesquisa transversal com delineamento descritivo e abordagem quantitativa do tipo analítico, realizado em um hospital público de ensino, com dados de prontuários, levando em conta o período de novembro de 2017 a janeiro de 2018, com objetivo de conhecer o perfil e o tempo de permanência dos usuários admitidos no pronto-socorro adulto. Utilizou-se análise estatística descritiva para obtenção de frequência absoluta e relativa e, posteriormente, foi realizado o modelo de regressão logística binária, por meio da análise bruta, que testou as variáveis independentes e sua associação com a variável dependente, adotou-se o valor de p<0,20, para proceder à análise ajustada. Considerou-se 304 sujeitos, em sua maioria (63,5%) do sexo masculino, procedentes do atendimento pré-hospitalar do próprio município, com menor grau de prioridade de atendimento e tempo de permanência no pronto-socorro por período superior a 24 horas. Os resultados demonstram que os sujeitos atendidos pela clínica médica referenciados por demanda espontânea tem quatro vezes mais chance de permanecer internado por mais de 24 horas no serviço. Os diagnósticos atribuídos aos sujeitos não se enquadraram nas condições sensíveis à Atenção Primária. Verifica-se a necessidade de identificação das fragilidades da rede de atenção à saúde e da adoção de intervenções para redução do tempo de permanência e da saturação da capacidade operacional.

Descritores: Perfil de saúde; Tempo de internação; Serviços médicos de emergência; Hospitalização.

Se trata de una investigación transversal con diseño descriptivo y enfoque cuantitativo de tipo analítico, realizada en un hospital escuela público, con datos procedentes de las historias clínicas, teniendo en cuenta el periodo comprendido entre noviembre de 2017 y enero de 2018, con el objetivo de conocer el perfil y el tiempo de estancia de los usuarios ingresados en el servicio de urgencias para adultos. Se utilizó el análisis estadístico descriptivo para obtener la frecuencia absoluta y relativa y, posteriormente, se realizó el modelo de regresión logística binaria, a través del análisis bruto, que probó las variables independientes y su asociación con la variable dependiente, se adoptó el valor de p<0,20, para proceder al análisis ajustado. Se consideraron 304 sujetos, mayoritariamente (63,5%) de sexo masculino, procedentes de la atención prehospitalaria de la ciudad, con menor prioridad asistencial y duración de la estancia en servicios de urgencias por un periodo superior a 24 horas. Los resultados muestran que los sujetos atendidos por la clínica médica remitidos por demanda espontánea tienen cuatro veces más probabilidades de permanecer hospitalizados más de 24 horas en el servicio. Los diagnósticos atribuidos a los sujetos no se ajustaron a las condiciones sensibles a la Atención Primaria. Es necesario identificar los puntos débiles de la red de atención a la salud y adoptar intervenciones para reducir la duración de la estancia y la saturación de la capacidad operativa.

Descriptores: Perfil de salud; Tiempo de internación; Servicios médicos de urgencia; Hospitalización.

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INTRODUCTION

vercrowding and an average stay of more than 24 hours in emergency rooms directly impact the quality of services, as they affect bed turnover, increase costs, contribute to the occurrence of adverse events and increase workload of professionals¹.

Among the most controversial aspects regarding the care provided in emergency care units, the spontaneous demand by users and the criteria adopted for referral to these units stand out. It is still common to see people in queues for long periods in these environments, with care being provided by order of patient arrival in the unit and not by clinical priorities, which worries health authorities².

In this context, an association was established between the Brazilian National Emergency Care Policy and the Brazilian National Humanization Policy, with a view to directing the user to care for acute conditions at any gateway to the network, establishing reception criteria based on classification of risk³.

In tertiary level institutions, aiming to improve service time and prioritize serious conditions, the risk classification based on the Manchester Triage System (MTS) has been implemented. Created in 1997 in the United Kingdom, the MTS works with flowcharts according to the patient's clinical condition, with five main classifications distributed in colors: emergency (red), very urgent (orange), urgent (yellow), standard (green) and non urgent (blue), these criteria can be reassessed and reclassified⁴⁻⁶.

The possibility that inappropriate use of the hospital component of emergency care is happening can be investigated through the application of an indirect indicator of quality of primary care, called Hospitalizations for Sensitive Conditions to Primary Care (HPCSC). It is a list of diagnoses and morbidities that can be timely and effectively attended to by primary care, without the need for hospitalization. HPCSC rates reflect access, coverage, quality and performance of primary care and may explain the existing burden elsewhere in the network, especially in emergency care units⁷. Thus, this study aimed to access the profile and length of stay of users admitted to the adult emergency room.

METHODS

This is a cross-sectional study with a descriptive design and a quantitative analytical approach, carried out through the active search for information in the medical records about care that took place in the adult emergency room (AER) of a public teaching hospital in the city of Uberaba, in the state of Minas Gerais (MG).

The institution is part of the network of federal university hospitals and is considered a large and highly complex reference center for 27 municipalities in the Triângulo Sul macroregion of Minas Gerais. It currently has 292 active inpatient beds. The adult emergency room is the main entrance to the service and has 22 inpatient beds, distributed between three wards and an isolation room⁸. According to the service's internal data, the unit had an average occupancy of 38.18 users/day, 450 admissions/month and approximately 1,100 assistances/month, in 2018⁹. Users' access to the AER occurs in two ways: through online regulation, through the use of an information system provided by the Ministry of Health, called SISREG II or directly from the municipal pre-hospital care network, when it comes to urgent and emergency situations.

The sample was chosen for convenience. All users were over 18 years of age, hospitalized in the AER during the time of data collection, between November 2017 and January 2018. Users who were in the observation modality while attending the unit were excluded.

Data were analyzed using the Statistical Package Social Science (SPSS) version 17.0 for Windows. Previously, the data underwent the double entry process for analysis and internal consistency reinforcement. The dependent variable used was length of stay of the patient in the AER, divided into categories greater than 24 hours or less than 24 hours. The independent

variables were: gender, age, city of origin, unit of origin, place of admission, responsible practice, International Classification of Diseases Related to Health (ICD-10), risk classification according to the Manchester Triage System and waiting time for service.

The variables were separated as follows: gender (male and female) and age (18 to 59 years and over 60 years). As for the city of origin, it was divided between Uberaba and others, since there are 27 municipalities in the macro-region that are served by the institution. The units of origin were categorized into mobile and fixed pre-hospital care services, represented respectively by the Mobile Emergency Care Service (*Serviço de Atendimento Móvel de Urgência* - SAMU) and the Emergency Care Units (*Unidades de Pronto Atendimento* - UPA); municipal and inter-municipal inter-hospital units; spontaneous demand and specialized outpatient clinic linked to the institution.

The places of admission to the emergency room were categorized into the emergency room and corridor. The medical specialties responsible for care were divided into mdical clinic and surgical/orthopedics. As for diagnoses, these were divided according to the ICD-10, into two groups: those belonging to the HPCSC list and those belonging to conditions considered "non-sensitive", as they are not part of the HPCSC list. The risk classification was divided into categories: emergency (red), very urgent (orange) and others (yellow, green and blue). The waiting time for care, corresponding to the period between the time of inclusion of the user in the hospital system, called AGHU, and the initial time of care recorded in the nursing report, was divided into: up to 10 minutes, from 11 to 60 minutes, more than 60 minutes, in accordance with the MTS.

Descriptive statistical analysis was used to obtain absolute and relative frequency and, later, the binary logistic regression model was performed through crude analysis, which tested the independent variables and their association with the dependent variable, adopting the p value. <0.20, to carry out the adjusted analysis.

The project was approved by the Research Ethics Committee of the Universidade Federa do Triângulo Mineiro, Opinion No. 1.781.682.

RESULTS

304 hospitalized people were considered. Regarding length of stay in the adult emergency room, the majority (74%) of users stayed more than 24 hours (Table 1).

Most were male, aged between 18 and 59 years, from the city of Uberaba (MG). They entered the service through transport linked to pre-hospital care in the city, most of them admitted to the emergency room, with medical clinic as theresponsible for the care (Table 1).

As for the risk classification, most were classified in the category "others", corresponding to a lower level of priority (yellow, green, blue or white), and the waiting time for the beginning of care was up to 10 minutes (Table 1). Most visits did not regard Primary Health Care (PHC).

Table 1. Sociodemographic and care characteristics, according to the length of stay in the adult emergency room. Uberaba, November 2017 to January 2018.

Variable	Total	(%)
Time of permanence		
Up to 24 hours	79	26.0
>24 hours	225	74.0
Gender		
Female	111	36.5
Male	193	63.5
Responsible practice		
Medical clinic	180	59.2
Surgical/Ortophedics	124	40.8
City		
Uberaba	190	62.5
Outras	114	37.5
Age		
18 to 59 years	169	55.6
>60 years	135	44.4
Unit of origin		
Pre-hospital	129	42.4
Intercity transfer	73	24.0
Spontaneous demand	55	18.1
Specialty clinic	47	15.5
MTS		
Urgent and emergent	118	38.8
Others	186	61.2
Time of wait for care		
Up to 10 minutes	172	56.6
11 to 60 minutes	52	17.1
60 minuters	80	26.3
Place of admission		
Emergency room	171	56.3
Corridor	133	43.8
ICD-10		
HPCSC	72	23.7
Others (not regarding PHC)	232	76.3

In the crude analysis, subjects attended by the medical clinic (OR=3.04; 95%CI=1.78-5.15), referenced by pre-hospital care (OR=3.99; 95%CI=1.84-8.19), by spontaneous demand OR=4.31; 95%CI: 1.77-10.53) and intercity transfer (OR=2.37; 95%CI: 1.10-5.09), admitted to the emergency room (OR=1.46; 95%CI: 0.87-2.44) and classified according to ICD by conditions not regarding primary care (OR=1.75; 95%CI: 0.99-3.10) were significantly associated with length of stay in the adult emergency room of over 24 hours (Table 2).

In the adjusted analysis, users assisted by the medical clinic (OR=2.97; 95%CI: 1.69-5.20), referred to service by pre-hospital care (OR=4,) remained associated with the length of stay. 27; 95%CI: 2.00-9.11), intercity transfer (OR=3.04; 95%CI: 1.34-6.85) or coming by spontaneous demand (OR=4.57; 95%CI:1.79-11.60), in addition to those admitted to the emergency room (OR=1.22; 95%CI: 0.67-2.15), and classified in the ICD-10 in other groups that do not fit the list of conditions of primary care (OR=2.02; 95%CI: 1.09-3.75) (Table 2).

The results showed that subjects assisted by medical clinic and referred by spontaneous demand are four times more likely to remain hospitalized for more than 24 hours.

Table 2. Crude and adjusted prevalence ratio between length of stay in the adult emergency room and demographic and care characteristics. Uberaba, November 2017 to January 2018.

Variables	Raw analysis	p ^a	Adjusted analysis	p ^b
	OR (CI 95%)		OR (CI 95%)	
Gender		0.818		
Male	1			
Female	1.06 (0.62-1.82)			
City		0.237		
Outras	1			
Uberaba	1.41 (0.84-2.37)			
Responsible practice		< 0.001		< 0.001
Medical clinic	1		1	
Surgical/Ortophedics	3.04 (1.78-5.15)		2.97 (1.69-5.20)	
Age		0.809		
18 to 59 years	1			
>60 years	1.06 (0.64-1.78)			
Unit of origin		< 0.001		0.001
Pre-hospital	1		1	
Intercity transfer	3.99 (1.84-8.19)		4.27(2.00-9.11)	
Spontaneous demand	2.37(1.10-5.09)		3.04 (1.34-6.85)	
Specialty clinic	4.31 (1.77-10.53)		4.57 (1.79-11.60)	
STM	,	0.655		
Urgent and emergent	1			
Others	1.13 (0.66-1.91)			
Time of wait for care	,	0.392		
Up to 10 minutes	1			
11 to 60 minutes	1.69 (0.75-3.83)			
60 minuters	1.36 (0.76-2.45)			
Place of admission		0.152		0.486
Emergency room	1		1	
Corridor	1.46 (0.87-2.44)		1.22 (0.67-2.15)	
IDC-10		0.055		0.026
HPCSC	1		1	
Others (not regarding PHC)	1.75 (0.99-3.10)		2.02 (1.09-3.75)	
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pa - raw/pb - adjusted

DISCUSSION

Most users were male. The consultations were carried out mostly through assistance regulation, in which there is a predominance of clinical conditions considered lower risk according to the MTS, since hemodynamic stability is one of the criteria for medical-hospital transport. Other studies also confirmed the frequent attendance of men in emergency rooms, mainly associated with trauma, as there is a greater correlation between men and traffic accidents and urban violence, which increases death rates^{5,10,11}.

The medical clinic was responsible for the largest number of visits, a result that corroborates the study carried out in an adult emergency room in the city of Belo Horizonte $(MG)^{10}$. This finding may be related to the high prevalence and exacerbation of noncommunicable chronic diseases.

The length of stay of users was greater than 24 hours, a result that differs from other studies, in which most users were discharged from hospita^{4,13,14}. For patients assisted by the medical clinic, which were the majority, the hospital stay was longer. A study carried out in the city of São Paulo also found similar data between medical clinic care associated with longer hospital stay¹³. The unit in question is a reference in highly complex care, and mostly admits serious cases, who need clinical investigation to establish procedures, which can lead to delays in intra-hospital transfer.

In the risk classification, according to the MTS, the predominant colors were yellow, green and blue, considered as lower priority of care. Two studies in the city of Belo Horizonte

(MG), one of which was classified as a large hospital, showed the predominant classification by priority level in yellow and green, similar data to this study^{4,11}.

An investigation that analyzed the demand attended to in an emergency unit also showed a high frequency of cases classified as green and blue, and cited the lack of technologies and human resources at the primary and secondary levels, effectiveness of available procedures, as well as the valuation of urgency/emergency services as contributing factors to excess demand in emergency care units⁵.

A study carried out in Portugal evaluated the impact of chronic diseases on conditions regarding primary care and found a higher prevalence (58.3%) of hospitalizations for conditions not regarding PHC, and of these, most were assisted by a specialty of internal medicine (97.6%) and admitted on an emergency basis (87.2%)¹⁶.

The percentage of hospitalizations due to primary care-sensitive conditions (HPCSC), identified in this research, is in line with work carried out in large municipalities in Brazil, which evaluated the evolution of HPCSC, and found a decline in their proportion of approximately 15%, which can be explained by the growth in coverage of the Family Health Strategy (FHS) in the different contexts of Brazilian municipalities¹⁵.

CONCLUSION

Most of the hospitalized patients were male, with clinical pathologies, coming from the pre-hospital care of the city itself, assisted by the medical clinic team, with clinical conditions considered lower risk according to the MTS.

In short, the results of this study suggest that there were few hospitalizations for conditions regarding primary care and people referred by spontaneous demand are four times more likely to remain hospitalized for more than 24 hours in the service.

The fact that it is the only hospital in the Triângulo Sul Health Macroregion, accredited for high complexity by the Unified Health System (SUS), generates a demand for hospitalization regardless of availability of beds, leading to hospitalizations in corridors, saturation of operational capacity and permanence of users in the unit for a period exceeding 24 hours.

As this is a prospective study, the difficulty in accessing medical records was the main limitation, leading to delays in data collection. At the time of the study, the institution did not have an electronic medical record.

Research in the institution itself is necessary, for a greater period of time and in association with other points of care in the municipal and macro-regional health network, regarding flow and demand of services, enabling the identification of weaknesses of the network and the adoption of interventions that can reduce time of permanence and operational capacity saturation.

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