● **Original article**

RECEPTION WITH RISK CLASSIFICATION: CHARACTERISTICS OF THE DEMAND IN AN EMERGENCY UNIT

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ABSTRACT: This study aimed to characterize the care of users with the guideline for Reception with Risk Classification in an Emergency Unit of Paraná state. This descriptive, exploratory and quantitative field study used 500 medical records of patients treated between January and May 2014 as the source of information, obtained by simple random sampling. Demographic and clinical data, related to the care network and risk classification, were collected and submitted to descriptive statistics. The majority of the patients were women, from 20 to 29 years of age, of spontaneous demand; referred by nurses and Primary Health Units. Regarding the classification of risk, four (0.8%) were emergency, 175 (35%) more urgent, 245 (49%) less urgent and 68 (13.6%) non-urgent; with the nursing technician mainly performing the triage and discharge being the primary outcome. There is a need to improve the medical records and review the classification process for clarification of specific failures.
DESCRIPTORS: Nursing; Reception; Healthcare; Hospital emergency service; National Health System.

ACOLHIMENTO COM CLASSIFICAÇÃO DE RISCO: CARACTERIZAÇÃO DA DEMANDA EM UNIDADE DE PRONTO ATENDIMENTO

RESUMO: Objetivou-se caracterizar o atendimento dos usuários com a diretriz de Acolhimento com Classificação de Risco, em uma Unidade de Pronto Atendimento do interior do Paraná. Pesquisa de campo, descritivo-exploratória, quantitativa, cuja fonte de informação consistiu em 500 fichas de pacientes atendidos entre janeiro e maio de 2014, obtidas em amostragem aleatória simples. Foram coletados dados demográficos, clínicos, relacionadas à rede de atenção e à classificação de risco; submetidos à estatística descritiva. A maioria era mulher, de 20 a 29 anos, de demanda espontânea; encaminhados por enfermeiros e Unidades Básicas de Saúde. Sobre a classificação de risco, quatro (0,8%) eram de emergência, 175 (35%) de urgência maior, 245 (49%) de urgência menor e 68 (13,6%) não urgentes; sendo o técnico de enfermagem o principal triador e a alta o principal desfecho. Há necessidade de melhoria dos registros e revisão do processo de classificação para esclarecimento de falhas pontuais.
DESCRITORES: Enfermagem; Acolhimento; Assistência à saúde; Serviço hospitalar de emergência; Sistema Único de Saúde.

ACOGIDA CON CLASIFICACIÓN DE RIESGO: CARACTERIZACIÓN DE LA DEMANDA EN UNIDAD DE URGENCIA

RESUMEN: El objetivo del estudio fue caracterizar el atendimiento de los usuarios con la directriz de Acogida con Clasificación de Riesgo, en una Unidad de Urgencia del interior de Paraná. Es una investigación de campo, descriptiva, exploratória y cuantitativa, cuya fuente de información fue compuesta de 500 fichas de pacientes atendidos entre enero y mayo de 2014, y obtenidas en muestra aleatoria simple. Fueron utilizados datos demográficos, clínicos, referentes a la red de atención y a la clasificación de riesgo; sometidos a la estadística descriptiva. La mayor parte era de mujeres, de 20 a 29 años, de demanda espontánea; encaminados por enfermeros y Unidades Básicas de Salud. Acerca de la clasificación de riesgo, cuatro (0,8%) eran de emergencia, 175 (35%) de urgencia mayor, 245 (49%) de urgencia menor y 68 (13,6%) no urgentes; siendo el técnico de enfermería la principal persona a triar y el alta el principal desfecho. Hay necesidad de mejoría de los registros y revisión del proceso de clasificación para aclaramiento de fallas puntuales.
DESCRIPTORES: Enfermería; Acogida; Asistencia a la salud; Servicio hospitalar de urgencia; Sistema Único de Salud.

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● INTRODUCTION

Emergency services, such as the Emergency Unit (EU) and the Hospital Emergency Services (HES), are configured as healthcare access points for those who present acute clinical or surgical requirements. Therefore, there is a variable number of patients who resort to this type of care and that present illnesses or injury that differ in severity, some of which can be life threatening and require immediate intervention to increase or ensure the chances of survival and therapeutic success. When the incoming demand in emergency services exceeds the active operational capacity and queues are caused, seriously ill patients with critical therapeutic response times should be identified and prioritized by the health team. In this context, all those who seek emergency care need to be assessed and classified according to risk[1], since patients can have a threat of imminent death and still present normal vital signs[2].

Triage for risk classification is therefore the first stage of the care of the emergency services. This aims to optimize the waiting time of patients according to the severity of their condition and reduce the negative impact of the delay on the care, through the designation of adequate resources to address the problem, giving priority to those who cannot safely wait for the therapeutic intervention[2-4]. Since the early 1990s, several scales have been developed and implemented in the emergency services of various countries to support the complex process of decision-making inherent to triage for risk classification. These include: Australasian Triage Scale (ATS, Australasia), Manchester Triage System (MTS, UK), Canadian Triage and Acuity Scale (CTAS, Canada), and the Emergency Severity Index (ESI, USA) [2-3]. In Brazil, from 2004, the Ministry of Health has advocated the Reception with Risk Classification (ACCR) as a guideline for the reorganization of the care process and reduction of long queues in EUs and HESs[5]; an alternative to overcome the exclusionary care paradigm given to the term triage that was used by the care model previously in force.

The EU is one of the components of an organized network for emergency care in Brazil, consisting of structures of intermediate complexity that should work continuously and provide a link between primary care and the hospital network, in accordance with the logic of reception and risk classification according to recognized national and/or international standards[6]. As well as other emergency services, both nationally[7] and internationally[8], the EU lacks infrastructural resources - mainly inadequate infrastructure and insufficient professionals - and suffers from overcrowding[9-11]. Furthermore, disagreements in the prioritization of cases between physicians and nurses and a lack of discussion about the protocol and flowchart[7,9,12] in the practice of the ACCR, continue to negatively influence the quality of care in the EU and its counterparts.

Overcrowding is one of the problems most detrimental to the management of emergency services. A study carried out in a large Italian hospital found that the use of a robust risk classification triage system provides a positive correlation between overcrowding and the waiting time of non-urgent patients, with no influence on the care time for urgent cases[13]. Despite the normative advances for improved management and care in the EU, as well as the development of studies inherent to the systems of triage risk classification, including ones about the ACCR, the expected changes in the care practice are still far short of the explicit knowledge. Therefore, studies aimed at understanding the dynamic of the ACCR and continuous monitoring of the profile of the care can contribute to identifying gaps in the implementation process of this guideline in place and also support the direct actions of managers and professionals for the configuration of a truly integrated care network strengthened by legitimated agreements and flows.

Given the above, this study aimed to characterize the care of users with the ACCR guideline in an EU of the state of Parana, Brazil.

● METHOD

This descriptive and quantitative documentary study was carried out in June and July 2014.

Regarding the public health context, the municipality under study is a reference center for 30 neighboring municipalities and has two EUs and a University Hospital that exclusively serves the public service.

The place of study was an EU of a city in the state of Parana, Brazil, inaugurated in March 2012, chosen for convenience and because it is characterized as Size 1, and performs a greater number of consultations. It provides 24 hours emergency care services in pediatrics, internal medicine and less complex surgical procedures, with clinical analysis and radiological diagnostic support. Since its inauguration, the ACCR has been carried out in line with the municipal protocol, in which the classification is based on four axis of severity by colors (blue = non-urgent, green = less urgent, yellow = more urgent and red = emergency)[5].

The EU investigated had 400 users per day, a monthly mean of 12,000 users, totaling around 60,000 consultations in a period of five months. Thus, the calculation of the sample was estimated at 458 records, considering a 95% degree of reliability and a sample error of 5%, plus 20% for replacement of losses. To increase the reliability, 500 records of patients treated between January and May 2014 were analyzed, through simple random sampling.

For data collection, the information from the ACCR, (risk classification and professional responsible for the classification) and from the Record of Standard Care of all EUs of the city, which contained demographic characterization data (gender, age and origin) and clinical variables (main complaint and outcome), was used as the source.

The records that met the following criteria were included in the sample: to legibly present the name of the patient, medical record registration number, main complaint of the patient at the time of risk classification, general or specific discriminator of the classification, and risk classification obtained at the end of the evaluation by the nurse. The study excluded the records of patients who did not have the risk classification and those who were treated outside the delimited data collection period.

Following the current ethical and legal procedures, this study is registered under authorization No. 629.383 and Certificate for Ethical Assessment Presentation (CAAE) No. 30541614.6.0000.5220.

● **RESULTS**

Of the total users attended, 275 (55%) were female and 225 (45%) male. Among the women, five (1.81%) were pregnant. The other characterization data are listed in Table 1.

It is highlighted that the spontaneous demand totaled 327 (65.4%) consultations. Thus, 173 (34.6%) users were referred to the EU by another health service. The data concerning these referrals are shown in Table 2.

Table 1 - Characterization of the population attended in the EU. Maringá, PR, Brazil, 2014

CARACTERISTIC (n = 500)	n	%
Age group (years)		
< 1	14	2.8
1 – 9	83	16.6
10 – 19	60	12.0
20 – 29	98	19.6
30 – 39	55	11.0
40 – 49	55	11.0
50 – 59	46	9.2
≥ 60	89	17.8
Origin		
15th Health Region	491	98.2
Other Health Region of Paraná	4	0.8
Other State	5	1.0

Table 2 – Those responsible for the referrals made to the EU. Maringá, PR, Brazil, 2014

Responsible for the referral (n = 173)	n	%
Health Professional		
Nurse	101	58.4
Physician	68	39.3
Nursing Assistant	2	1.1
Nursing Technician	1	0.6
Unknown	1	0.6
Health Establishment		
Ambulance*	34	19.7
Primary Health Unit (UBS)	121	70.0
Private Doctor's Office	9	5.2
Public Hospital	7	4.0
Private Hospital	2	1.1

* Includes Mobile Emergency Service (SAMU) and private ambulance.

Among the 500 consultations of the EU, four (0.8%) were classified as emergency, 175 (35%) as more urgent, 245 (49%) as less urgent, 68 (13.6%) as non-urgent cases and eight (1.6%) did not have this information. Table 3 contains data related to the risk classification in the EU.

Table 3 - Characterization of consultation in the EU, according to risk classification by color. Maringá, PR, Brazil, 2014

Axis	Red	Yellow	Green	Blue	Unknown
Variable	**n (%)**	**n (%)**	**n (%)**	**n (%)**	**n (%)**
Responsible for RC					
Nurse (n = 100)	-	33 (18.9)	47 (19.2)	19 (27.9)	1 (12.5)
Nursing technician (n=291)	2 (50.0)	89 (50.9)	156 (63.7)	39 (57.4)	5 (62.5)
No identification (n=109)	2 (50.0)	53 (30.2)	42 (17.1)	10 (14.7)	2 (25.0)
Main bodily complaint					
Skin and musculoskeletal (n = 104)	3 (75.0)	44 (25.1)	41 (16.7)	14 (20.6)	2 (25.0)
Head, neck and attachments (n=65)	-	17 (9.7)	35 (14.3)	13 (19.1)	-
Neurological * (n=20)	1 (25.0)	9 (5.1)	10 (4.1)	-	-
Respiratory (n=21)	-	8 (4.6)	9 (3.7)	4 (5.9)	-
Cardiovascular and hematological (n=26)	-	17 (9.7)	7 (2.9)	2 (2.9)	-
Gastrointestinal (n=62)	-	13 (7.4)	41 (16.7)	7 (10.3)	1 (12.5)
Genitourinary (n=22)	-	7 (4.0)	13 (5.3)	2 (2.9)	-
Infections (n =68)	-	20 (11.4)	40 (16.3)	8 (11.8)	-
Non-specific signs and symptoms (n=62)	-	27 (15.4)	28 (11.4)	7 (10.3)	-
Unknown** (n=26)	-	8 (4.6)	8 (3.3)	6 (8.8)	4 (50)
Others*** (n=24)	-	5 (2.9)	13 (5.3)	5 (7.4)	1 (12.5)
Observation in the EU					
Yes (n=183)	4 (100.0)	84 (48.0)	80 (32.7)	11 (16.2)	4 (50.0)
No (n=317)	-	91 (52.0)	165 (67.3)	57 (83.8)	4 (50.0)
Outcome					
Home discharge (n = 434)	-	151 (86.3)	221 (90.2)	58 (85.3)	4 (50.0)
External transfer (n=40)	3 (75.0)	14 (8.0)	15 (6.1)	6 (8.8)	2 (25.0)
Abandonment of treatment (n=17)	1 (25.0)	8 (4.6)	3 (1.2)	4 (5.9)	1 (12.5)
No record (n=9)	-	2 (1.1)	6 (2.4)	-	1 (12.5)

* Includes psychiatric disorders.
** Includes absence of registration and illegible writing.
*** Includes metabolic, gynecological-obstetrical and external cause impairments.

● **DISCUSSION**

The characterization data of the population of the EU investigated were similar to the results of a study[14] performed in an intermediate complexity district health unit, located in a municipality within São Paulo state, which evaluated the profile of 477 adult users of the service and found that 53.7% were female, with a higher frequency between the ages of 20 and 29 years (23.9%) years, followed by older adults (23.1%). In contrast, in other Brazilian studies focused on the analysis of demand for emergency services with risk classification, such as one performed in Diamantina, Minas Gerais[15] and one in Londrina, Paraná[16], the majority of the patients (56.4%) were male. Furthermore, a study carried out in Pelotas, Rio Grande do Sul[17], found an oscillation in the predominance of the gender variable in relation to the risk classification of the demand analyzed; with a higher frequency of men in the emergency and more urgent axes, while women constituted the majority of less urgent and non-urgent cases. However, international studies show that this percentage is not maintained, and that in other countries the higher proportion of consultations are for men[18]. It should also be noted

that it is difficult to compare data regarding the age of patients with other studies[15-17,19], also related to this issue, due to the high frequency of missing data, the adoption of different categories in the presentation of tabular data or due to the use of position measurements; which implies the need for uniformity in the disclosure of results and improvements in completing the medical records so that they can be used as quality indicators.

The users of the EU were residents of the municipality or region, which is explained by the fact that this service is characterized as a university center and reference for specialized care in an inter-municipal health consortium. In this study, there was a higher frequency of spontaneous demand compared to referrals by other health facilities, as evidenced in other Brazilian studies[14,16]. This type of information is not always present in the care records[15], however, it constitutes important data for the analysis of integration between the different components of the care network and the urgency services in the country, as well as indicating the degree of orientation of the population regarding the accessibility and aims of each service included in this type of configuration.

In addition, the referrals to the EU were performed predominantly by nurses and doctors, respectively, with the majority originating in Primary Health Units. These results may indicate that health actions in this municipality are directed toward the construction and consolidation of an integrated care network. However, it is important to highlight the need to recognize the context in which the referrals were made by mid-level health professionals, because, as well as in the emergency services, the adoption of the ACCR is recommended in primary care, where the assessment procedure and risk classification is the responsibility of the higher-level health professional trained for this type of procedure[5].

This problem was more important in the EU investigated, where the main professional designated to perform the risk classification was the nursing technician. This result is alarming, since, from the perspective of the nursing team, risk classification and prioritization of care in emergency departments is the particular responsibility of the Nurse[20]. This was reinforced by the Federal Council of Medicine[11], when it declared the mandatory risk classification in EUs to be the responsibility of trained doctors or nurses; not absolving the doctor of the responsibility to evaluate every patient, even when classified by the nurse, before being discharged or sent to another location. When considering the risk classification axes, there was a predominance of less urgent (green) and more urgent (yellow) cases, a fact that is consistent with the objectives of the EU, considered an intermediate complexity service, which is similar to the findings of a study conducted in Londrina, Paraná, Brazil[16].

With regard to the complaints of the users, the vast majority had more than a sign and/or symptom associated with the main bodily complaint (data not shown), with those related to the skin and musculoskeletal being most frequently cited, followed by infections. Acute complaints of low severity or even considered non-urgent, have also been reported in other Brazilian studies as the main reason for the patient using the EU[14,17,19]. Non-urgent cases seeking emergency services is due to a wide range of reasons, which include, with limited evidence, personal experience in other healthcare points, self-perception of the disease severity, belief in better treatment compared to primary care, as well as factors related to access, convenience and costs for using these services[21].

There is a variable range of clinical conditions that lead patients to seek emergency services. The evaluation of manifested signs or symptoms reported during the risk classification should be guided by institutional protocols and analyzed using critical thinking and the clinical judgment of the professional performing the triage. This is because patients at risk of death may present normal vital signs[2] or present clinical deterioration after the risk classification upon admission[22], which implies the need for a systematic periodic review of all patients during their stay in the emergency service[5,7].

Although the majority of the patients were classified as urgent cases, a large portion of these were discharged after the medical consultation, without requiring initial treatment under observation in the EU or admission to hospital. Therefore, there is a lack of logic between the risk classification and the need for observation or patient outcome. As well as non-urgent patients being kept under observation or transferred to hospital care services, those who were classified as less urgent were referred to other services more than the more urgent cases. This result may be related to lack of risk classification training, often performed by non-qualified professionals, or due to the conditions of the patient for transportation and institutional support for observation and emergency care for the cases that deteriorate quickly. Added to the previous statement, a record of counter-referral of the cases

to primary health care was not observed. Failures like this can prevent the continuation of care and invalidate the prevention of reoccurrences, especially among those with chronic comorbidities.

Interestingly, abandonment of the treatment was found more often among those patients classified as more urgent and non-urgent, respectively. Furthermore, one user classified as an emergency case also abandoned the treatment. When considering systematic performance of the risk classification guided by protocol, it can be inferred that the abandonment of treatment by users classified in red and yellow axes constitutes a high risk to the health and safety of the patient and should not be overlooked by the professionals of the institution. In contrast, the abandonment of treatment by users of the blue axis denotes lack of guidance and counter-referral to primary care points.

When dealing with non-urgent cases, it is important to remember that these are mainly responsible for the strangulation of emergency services worldwide. In this context, a literature review highlighted that the use of emergency services for non-urgent conditions may result in overspending in health care, unnecessary testing and treatment, as well as weakening the relationship between the primary care professionals and the patient[21]. In general, the problems arising from the records (absence and illegibility) evidenced in the data collection of this study, occurred in the classification of users, the main complaints, the referral of users to the EU, the main organ systems compromised, and the outcome of the patient. Thus, this imprecision in the information impairs the analysis of the real scenario investigated.

● **CONCLUSION**

The population served in EUs presents similarities and differences considering different geographical areas, with the comprehension of its characteristics possibly being limited due to the lack of uniformity in the disclosure of data. Furthermore, in each service, the epidemiological, geographical and institutional characteristics are important to better understand the profile of their respective clientele. Although in the Primary Health Units the nurses were particularly responsible for the referral of patients to the EU, the majority of the users were characterized as spontaneous demand. This indicates the need to increase awareness among professionals and users regarding the flows and aims of each component of the care network proposed in Brazil. In this sense, more attention should be directed toward counter-referrals, which was not observed in this study.

Mid-level professionals are not qualified to perform the risk classification procedure, however, this occurred in both the Primary Health Unit and the EU. Thus, it is considered important to review the staff dimensioning and the duties of each member of the multidisciplinary team, so that the service can become more efficient and effective, preventing losses and damages resulting from malpractice. The predominance of cases of lesser and greater urgency are in line with the aims of the EU, however, the lack of logic between the risk classification and patient outcomes requires attention to identify whether the problem is in the classification procedure, in the protocol used or is inherent in the clinical condition of the patient.

Failures in the records regarding the ACCR in EUs are reported in scientific studies and, in this study, were represented by the failure to complete the form and illegible writing. An alternative to this problem would be the computerization of the data input, which could be monitored as quality of service indicators. In general, the healthcare actions of the municipality appear to be partially directed toward the network care model proposition, however, the use of the ACCR and infrastructural aspects related to it need to be reviewed as there are gaps that can be improved through the planning and implementation of specific actions identified here.

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