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Implementation of the Welcome with Risk Classification in Emergency and Cardiological Emergency Services: Integrative Literature Review

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***Abstract*— Objective:** *Identify the repercussions and impacts of implementing risk classification in urgency and emergency services.* **Methodology:** *Integrative literature review that had its searches in the databases BDENF, LILACS AND PUBMED of articles published 2014 to 2020, with the use of the descriptors: User embracement, risk classification, triage, urgency, emergency, cardiology, nursing, nursing care. Data was systematized using the Content Analysis technique.* **Results:** *Analyzed 16 articles in which positive impacts were identified in the implementation of the risk classification, related to the ability of this device to organize the demand by prioritizing cases by severity, thus decreasing the chances of a prognosis with negative impacts, resulting from delay in treatment. However, users still know little about the logic of ACCR, which is a limiting factor in the process of implementing the instrument.* **Conclusion:** *It is essential to inform the population about the dynamics of using risk classification protocols in emergency services, as well as establishing training and permanent education for health professionals.*

***Keywords*— User Embracement; Triage; Ambulatory care; Cardiology;Nursing Care.**

I. INTRODUCTION

Emergency care services and hospital urgency and emergency services constitute one of the main entry points into the health systems used by users, whether these services are public or private1,2. Configuring themselves as a gateway, these services can most often present overcrowding, which associated with a deficiency in organization and flow processes, result in undesirable clinical outcomes. This fact directly affects users, health professionals and, consequently, health services and systems[1].

In this context, in 2009, the Ministry of Health (MS) implemented the Reception Program with Risk Classification (ACCR), which is a dynamic process of identifying and prioritizing care, aiming to distinguish critical cases from non-critical ones, thus prioritizing, who most needs immediate assistance. Worldwide, there are instruments used for user evaluation, among which the following stand out: the English Manchester Triage System (Manchester Protocol - MST), the Australian Australian Triage Scale (ATS), the Canadian Canadian Triage and Acuity Scale (CTAS) and the American Emergency Severity Index (ESI)[2].

In Brazil, the Manchester protocol is one of the instruments used in urgent and emergency services to assess users2. The Manchester Screening System, stratifies into five levels of severity and assigns, at each level, color and target time for medical care. It is structured in

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flowcharts with discriminators that guide the collection and analysis of information to define the patient's clinical priority3. The Manchester protocol must be applied by the nurse, a professional of the team indicated for the evaluation of the user's clinical condition, as it presents communication and evaluation skills, linked to the knowledge of the ethical-legal and technical-scientific principles that govern the profession[2].

In this context of reception and screening, it is essential that understanding is not limited to an attentive and friendly action by the professional, since welcoming implies the coordination of responsible and resolute care, crucial in urgent and emergency situations. Thus, this process must break down and eliminate barriers that hinder or impede the population's access to services. Through risk classification, equity is sought to be achieved, that is, prioritizing critical cases, regardless of the order of arrival. Welcoming is listening, reorganizing the work process, where the multiprofessional team becomes responsible for the user's demand being on the front line[2].

It is known that many emergency care services live in long lines where people dispute the service without any criteria other than the time of arrival. This lack of distinction of risks or degrees of suffering and severity results in the worsening of cases, often resulting in the death of people who were not attended in a timely manner[4].

In addition, the care of users in overcrowded emergency services can lead to adverse events and deteriorating working conditions, and provides questionable performance for the health system as a whole. In this sense, it is crucial to reorganize urgent and emergency services. The risk classification emerges as a clinical and organizational strategy to mitigate risks and damages arising from the asymmetries generated by access to services guided by order of arrival. The use of risk classification aims to minimize the risks and damages caused by the consequences of overcrowding and absence of pre-defined flows[1].

In this sense, considering the significant demand for urgent and emergency services and the need to continuously evaluate the results of assistance after the implementation of risk classification with the use of the Manchester protocol, the present study aims to identify the repercussions and impacts of the implementation of the risk classification in urgent and emergency services. Having as guiding question: How do the published articles address the implementation of reception with risk classification in urgent and emergency services, the repercussions and impacts?

II. METHODOLOGY

It is an integrative literature review, which consists of building a broad analysis of the literature, evaluating relevant research that supports decision-making and the improvement of clinical practice, thus cooperating for discussions about techniques and research results. , as well as reflections on future studies5. To carry out the integrative review, it is necessary to develop six steps. In the first stage, the guiding question was defined: How do the published articles address the implementation of reception with risk classification in urgent and emergency services, the repercussions and impacts?

In the second stage, the inclusion and exclusion criteria were established and a search was started in the databases to select the studies. The data sources for the research were the Latin American and Caribbean Literature in Health Sciences (LILACS), National Library of Medicine (PUBMED) and Database in Nursing (BDENF). Articles published in Portuguese, English and Spanish were selected, the search was carried out in the months of September and October 2020, using the following Health Sciences Descriptors (DECS): "Reception", "Risk Classification", "Screening" , "Urgency", "Emergency", "Cardiology", 'Nursing "," Nursing Care ". During the search, the Boolean operator “AND” was used, as it favors the intersection during the search.

The following inclusion criteria were adopted: original and complete articles that addressed the theme under study, in the period from 2014 to 2020. Theses, dissertations, books, materials not available in full free of charge, duplicate articles that did not address the topic of the review. In the third stage, the information to be extracted was defined. For data collection, an instrument constructed by the authors was used, containing the following variables: year of publication, journal, title, authors, language, type of study, objectives, level of evidence.

The fourth stage corresponded to the analysis, evaluation, inclusion and exclusion phase of the studies through a critical analysis of the selected articles. The fifth stage consisted of the interpretation and discussion of the results found. The sixth and final stage consisted of presenting the review and synthesis of knowledge.

Using the search strategy, 348 scientific articles were found, being: LILACS (119), PUBMED (127) and BDENF (102). The abstract was read, of which 190 were excluded, as they were out of the study period, because they were not available in full free of charge and because they did not address the topic of study, with 45 articles left

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for reading, 29 of which were excluded. after reading in full, with 16 articles included in the review. The Flowchart in (Figure 1) summarizes the construction of the corpus of this review.

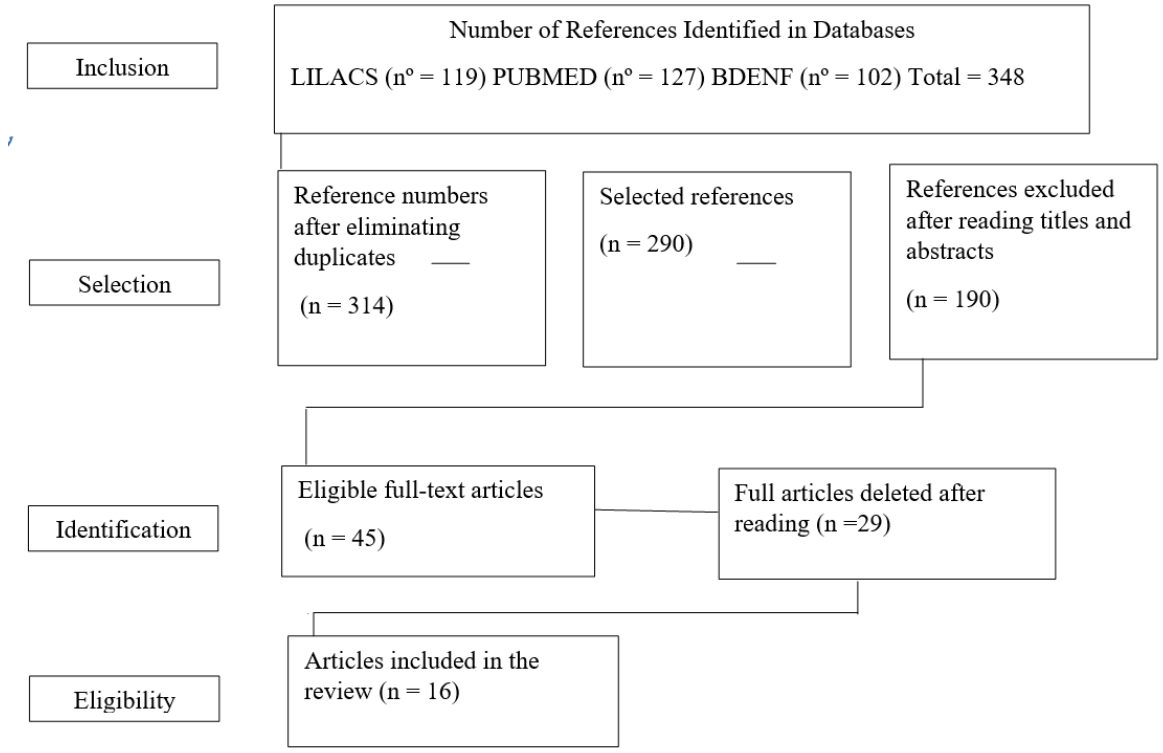

Fig.1: Flowchart of study selection

Source: Research data, 2020.

III. RESULTS

As a result of the search application, 348 articles were found. After applying the inclusion and exclusion criteria, 16 texts were selected for analysis. Of these, 1 article is in Spanish, 4 in English and 11 in Portuguese.

The distribution of information regarding the number of articles published per year and journal shows that in 2017 and 2019 there was an increase in the publication of articles related to the subject. It is noticed that the most used methodology was the quantitative study, covering 63% (10) of the total of analyzed articles. Afterwards, the qualitative study methodology is followed, with 37% (6).

The classification of six levels was used to rank evidence: Level I: evidence resulting from the meta-analysis of multiple controlled and randomized clinical studies; Level II: evidence obtained in individual studies with experimental design; Level III: evidence from quasi-experimental studies; Level IV evidence from descriptive studies (non-experimental) or with a qualitative approach; Level V: evidence from case reports or experience; Level VI: evidence based on expert opinions[6].

The systematization of the data occurred using the technique of content analysis of the theme following the following steps: pre-analysis; exhaustiveness rule; exploration of the material and treatment of data, inferences and interpretations and final presentation was made by the record according to analysis and presentation of the discussion[7].

The following is a list of articles selected and organized according to the title, authors, journals, objectives, type of study, level of evidence, language and year.

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Chart 1 - Articles selected according to: Title, authors, journals, objectives, type of study, level of evidence, language and year. Belém - Pará, 2020

TITLE	AUTHORS / PERIODIC	GOALS	KIND OF STUDY/ EVIDENCE LEVEL	LANGUAGE	YEAR
Reception with risk classification in urgent and emergency services: applicability in nursing	WEYKAMP, J.M; PICKERSGILL, C.S; CECAGNO, D; VIEIRA, F.P; SIQUEIRA, H.C.H BDENF	Identify the knowledge of nurses about the implementation of the Welcome with Risk Classification proposal, in an urgency and emergency service.	Qualitative, descriptive, exploratory study IV	Portuguese	2018
Reception and risk classification in urgent and emergency services: limits and possibilities an issue for nurses	ARAUJO, Y.B; FERREIRA, L.B.A; SANTOS, C.M; SILVA, A.T.M.F; GOMES, M.S.M BDENF	Analyze limits andpossibilities that permeate the reception and risk classification at the emergency door of a hospitalpublic in the city of Campos dos Goytacazes	Descriptive exploratory study with a qualitative approach IV	Portuguese	2015
Clinical demand for an emergency care unit, according to the Manchester protocol	DINIZ, A.S; SILVA, A.P; S, C.C; CHIANCA, T.C.M BDENF	Identify the clinical demand of patients attended by nurses in the classification ofrisk of an Emergency Care Unit, according to the Manchester protocol.	Quantitative descriptive study IV	Portuguese	2014
Implementation of the host with risk classification in an emergency care unit	SERRA, H.H.N; SANTANA, T.S; S,A.R; SANTOS, J.S; PAZ, J.S BDENF	Analyze the process of implementing welcoming with risk classification in the emergency department of a city in the regionrecôncavo da Bahia, Brazil.	Qualitative descriptive study IV	Portuguese	2019
Reception with risk assessment and classification in an emergency room: a comparative study	DEUS, G.A; FERREIRA, J.H; MONTANDON, D. S; GODOY, S. LILACS	Identify whether the risk classification carried out at the reception with risk assessment and classification of the emergency room is in accordance with the institutional protocol	Quantitative, retrospective, correlational, descriptive and cross-sectional study IV	Portuguese	2018
Reception and risk classification: perception of health professionals and users	CAMPOS, T.S; ARBOIT, E.L; MISTURA, C; THUM, C; ARBOIT, J; CAMPONOGARA, S LILACS	To know the perception of health professionals and users in relation to the reception with risk classificationin an urgency / emergency service	Descriptive exploratory study with a qualitative approach IV	Portuguese	2020

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Reception Analysis with risk classification in an emergency care unit	GOUVEIA, M.T; MELO, S.R; COSTA, M.W.S; SOUZA, J.M.M; SÁ, L.R; PIMENTA, C.J.L; FREITAS, K.N; COSTA, M; COSTA, T.F LILACS	Evaluate risk-rated host services performed in emergency care units	Cross-sectional and quantitative study IV	Portuguese	2019
Characterization of the attendance of a public emergency room according to the Manchester Screening system	SILVA, A.D.C; CHIANCA, T.C.M; PÁDUA, D.R; GUIMARÃES, G.L; MANZO, B.F; CORREA, A.R LILACS	To characterize the attendance of patients classified by the Manchester Screening System (MTS) in a large public hospital.	Descriptive study with a quantitative approach IV	Portuguese	2019
Implementation of the Manchester risk classification system in a municipal emergency network	SACOMAN, T.M; BELTRAMMI, D.G.M; ANDREZZA, R; CECÍLIO, C.O; REIS, A.A.C LILACS	Narratethe technology deployment experience of risk classification in the municipality of SBC	Experience report V	Portuguese	2019
Nurses' opinion on risk classification in emergency services	DURO, C.L.M; LIMA, M.A.D.S; WEBER, L.A.F LILACS	Assess nurses' opinion on risk classification in emergency services	Exploratory, quantitative study IV	Portuguese	2017
Users' perception of screening with risk classification in an emergency service in Cape Verde	SPAGNUOLO, R.S; SILVA, M.N.L; MENEGUIN, S; BASSETTO, J.G.B; FERNANDES, LILACS	Unveil users' conceptions about screening with risk classification in an emergency service	Qualitative research, based on the method “case study V	Portuguese	2017
Saturation of emergency services: Analysis of four hospitals in Medellín and strategy simulation	RESTREPO-ZEA, J.H; JAÉN-POSADA, J.S; PIEDRAHITA, J.J.E; FLÓREZ, P.A.Z LILACS	Identify and simulate strategiesto manage medical emergencies, seeking to mitigate saturation	Exploratory and analytical research IV	Español	2018

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Chest pain in emergent department risk stratification with Manchester triage System and heart score	LEITE, L; BAPTISTA, R; LEITÃO, J; COCHICHO, J; BREDA, F; ELVAS, L; FONSECA, I; CARVALHO, A; COSTA, J.N PUBMED	Describe the population with chest pain, to characterize the subgroup of patients with acute coronary syndrome (ACS) and to assess the prognostic value of Manchester triage system and of HEART score.	Retrospective observational study IV	English	2015
Evaluation of the Manchester triage system for patients with acute coronary symdrome	KIBLBOECK, D; STEINREUCK, K; NITSCHE, C; LANG, W; KELLERMAIR, J; BLESSBERGER, H; STEINWENDER, C; SIOSTRZONER, P PUBMED	Defined as the distribution of different MTS levels in patients with ACS; defined as a prespecified subgroup analysis of the MTS level distribution for gender, diabetic patients, different types of ACS (STEMI, N-STEMI and UAP) and age younger and older than 80 years.	Retrospective analysis IV	English	2019
Outcome assessment of patients classified through the Manchester Triage System in Emergency units in Brazil and Portugual	GUEDES, H.M; ARAÚJO, F.A; JÚNIOR, D. P; MARTINS, J.C.A; CHIANCA, T.C.M PUBMED	Evaluate the outcomes of patients' treatment classified according to the Manchester Triage System (MTS) in two large hospitals	Historical cohort study IV	English	2017
Validity of the Manchester Triage System in emergency care: A prospective observacional study	ZACHARIASSE, J.M; SEIGER, N; ROODS, P.P.M; ALVES, C.F; FREITAS, P; SMIT, F.J; ROUKEMA, G.R; MOLL, H.A PUBMED	To determine the validity of the Manchester Triage System (MTS) in emergency care for the general population of patients attending the emergency department, for children and elderly, and for commonly used MTS flowcharts and discriminators across three different emergency care settings.	Prospective observational study IV	English	2017

Source: Own research in the database BDENF, LILACS and PUBMED (2014 - 2020)

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IV. DISCUSSION

The theme of health care in urgent and emergency services permeates several discussions, among which the growing search for these services over the years stands out, this is due to numerous reasons, which may highlight socioeconomic, cultural issues, as well as the difficulty resolution of health demands in other parts of the health care network, which results in overcrowding of urgencies and emergencies[8]. According to national and international literature, emergencies are one of the doors of entry to health services [2,4,8,9]. These services constantly live in long lines, where people compete for care without any criteria at all. not be the arrival time[8].

Due to the imbalance between the supply and demand of emergency services, saturation is inevitable, which reflects in long waits, occupation of inadequate areas, use of chairs and even the floor for user care, high level of stress of health professionals and users[9]. Due to the lack of risk stratification or degree of suffering, as a result there is a clinical worsening of those who wait for care, causing in some cases the death of people due to the lack of assistance in a timely manner.[4].

In view of this reality, there was a need to incorporate new technologies in order to organize the flow of care in urgent and emergency services [4,8]. There is a need to adopt devices with the ability to contribute to the prioritization of care, organization of flow, optimization of resources and mainly relief of suffering and maintenance of life.[4].

Thus, the Ministry of Health (MS), through the National Humanization Policy (PNH), with the interest of exercising the principles of the Unified Health System (SUS) in the daily life of health services and thus improving health care of the population, points out the use of risk classification systems in users who seek care in urgent and emergency services [1,4,8,10]. The reception with risk classification (ACCR), consists of a PNH guideline, presented as an instrument that must be present in health practices, based on qualified listening and the ability to agree between the user's demand and the possibility of service response , that is, user embracement allows the active participation of the user as part of the health production process, aiming to promote the humanization of care, in order to face the deficiency in resolvability and quality of health services [8,10].

The reception to users must be based on the assessment with risk classification [10]. The ACCR consists of a dynamic process of identification and prioritization of care, which aims to identify the critical cases of non-critics. The process is based on the identification and consequent prioritization of users who need immediate / brief care and, subsequently, of cases with less clinical severity, by logic, care prioritizes according to the degree of complexity of the user, and not in order of arrival[1,2,8].

Studies indicate that the risk classification must be performed by a nursing professional with a higher education level, through consensus established jointly with the medical team in order to assess the potential for worsening the case and the degree of suffering of the user. The nurse has the skills and competences to explore the patient's complaint without the presumption of medical diagnosis, so this professional has been the most recommended, being legally supported to perform the ACCR in urgencies and emergencies[2,8,11,12,13,19].

It is essential to highlight that the ACCR occurs through protocols, are instruments that systematize the evaluation and offer legal support for the safe practice of nurses8. Among the instruments used worldwide for user evaluation, the following stand out: the English Manchester Triage System (Manchester Protocol - MTS), the Australian Australasian Triage Scale (ATS), the Canadian Canadian Triage and Acuity Scale (CTAS) and the American Emergency Severity Index (ESI)[2].

Among the models highlighted above, the most widespread is the Manchester Screening System4. The Manchester protocol was initially implemented at the Manchester Royal Infirmary, in the city of Manchester (1997), and is adopted as a standard protocol in several hospitals in Europe. It consists of 52 predefined clinical conditions linked to their respective guidelines or flow lines, from each of the risk classification levels. The classifications are divided into colors organized by level of severity and risk of clinical presentation, where: the red color (emergent) determines immediate care; the orange (very urgent) provides assistance in ten minutes; yellow (urgent), 60 minutes; green (not urgent), 120 minutes and blue (not urgent), 240 minutes[1,4,14, 15,16].

It is noteworthy that national studies that compare the MTS with an institutional protocol showed that it is more inclusive, increases the level of clinical priority in the occurrence of divergences between classifications and is able to predict which patients are more likely to have an unfavorable outcome[13]. A study carried out in order to analyze the organization and workflow in an emergency unit in an interior of the state of Rio Grande do Sul, which does not use a risk classification system, showed difficulties related to human resources, materials and flow users' disorder, highlighting the dissatisfaction of health professionals due to the large volume of non-urgent demand [10]. This finding corroborates the importance of

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establishing protocols to screen clinical cases in emergency rooms in order to prioritize critical cases, improve the flow , enhance the work of the multidisciplinary team and avoid worsening the patients' clinic.

A study showed the importance of using the Manchester protocol to screen for chest pain, where managing this emergency is one of the greatest challenges in the emergency room. Chest pain is responsible for 5 to 20% of all admissions to the emergency room. Accurate and rapid risk stratification is essential in the acute management of users with these symptoms, especially to identify those at immediate risk of complications, such as Acute Coronary Syndromes. It is difficult to discriminate against this group of patients, as there are a variety of clinical manifestations. Thus, to minimize this problem, several risk stratification tools have been developed in recent years, such as the Manchester screening system. The study concluded that patients with chest pain have very different levels of severity and the discriminatory power of the Manchester screening system should be used to assess this population[17].

Finally, studies have shown that the implementation of a screening instrument such as the ACCR is related to its ability to organize the demand by prioritizing cases by severity, thus decreasing the chances of a prognosis with negative impacts, resulting from treatment delay [8 , 18.19]. ACCR is based on one of the principles of SUS, equity, which consists of guaranteeing immediate assistance to those who need it most, in this sense one of the impacts to users, related to the use of screening in urgency and emergency, is to assist the client in a more humane and precise, reducing inequalities, that is, although all people have direct access to care, they are not equal in their health demands, thus, they have different needs, and must be treated according to their needs[18].

As a management tool, the implementation of the ACCR, proves to be effective for the bureaucratic issues existing between professionals and users, in which it is structured, a protocol that directs the functioning of the screening of users. Thus, the Ministry of Health chooses the risk classification as a strategy for changing the work of care, management and production of health care, aiming to meet the different degrees of need of users 18. A study pointed out that nurses judge the ACCR as an important device to qualify emergency care. Also highlighting that the Manchester System is organized as an ordering tool in emergency services and values the opportunity for care for patients who have more complex and risky clinical conditions[18].

The risk classification has an impact on support for assistance, admission and discharge from the hospital emergency department, being indicated as an instrument for ordering the flow of patients, according to the severity criterion. In addition, the risk classification is an instrument that organizes the work of the emergency service, with reference to the work of nurses in the risk classification, these professionals perform the clinical management of patients, organize the nursing team, the resources and materials of the service [19].

It is worth noting that despite the repercussions and positive impacts on the implementation of ACCR in urgent and emergency services, the studies indicate challenges, limitations and difficulties. The physical structure of many urgent and emergency services is still not adequate to the ACCR's proposal [18,19]. The adequacy of the environment and interventions focused on the structure and organization of the emergency service are necessary for efficient patient care in the risk classification[19].

In addition, many users do not understand the logic of the ACCR, which can contribute to users' dissatisfaction and questioning, as well as overcrowding of services, impairing the care of cases considered critical1[8,20]. A study also points out the question of the dimensioning of nurses to perform the risk classification. Nurses face an excess of demand to prioritize care for patients who seek urgency. The inadequacy of the number of nurses and other professionals in the emergency services in view of the excessive demand and conflicts resulting from the prioritization of care have been considered as factors that generate wear and emotional overload of the emergency professionals [19].

The studies also highlight the need for training professionals, especially nurses, for the proper use of the screening instrument. Periodic training is necessary to use classificatory protocols, since the training aims at the knowledge and identification of patients' needs in carrying out the risk classification[18,19].

V. FINAL CONSIDERATIONS

The RIL showed that many emergency care services live in long queues, overloaded, where the failure to distinguish the degree of risk of users generates several consequences, among them, the most damaging is the one that evolves to the worsening of the clinical condition of the user or even death, due to lack of assistance in a timely manner. In this sense, the Ministry of Health has been investing in devices such as the ACCR to enhance health care, the management of human and material resources.

The Reception with Risk Classification emerges as a device of the PNH in order to strengthen the principles of SUS, especially equity. Through institutionalized protocols, such as the Manchester protocol, it is intended to welcome, decide and resolve user demands in an emergency to avoid as little as possible the aggravation of their clinical condition, establish goals, organize the flow, enhance the work of the team multiprofessional, generating user, team and institution satisfaction.

It is known that the use of a triage system in emergency services generates positive results, as studies have well explained, but this process presents challenges and limiting factors that need to be considered in order to establish strategies to mitigate negative repercussions or to prevent the achievement of established goals. Studies have shown that users have insufficient knowledge about the logic of risk classification, in this sense it is essential to develop health education strategies in the various points of the network, be it primary, secondary and in the emergency room in order to make the user active in the process, this can mean a more informed population, reflecting on a respectful relationship between professionals and users, searching for other points of health care, with repercussions on reducing the lines of highly complex services.

It also highlights the need for permanent education of health professionals, for the appropriation of screening protocols, the essential scientific and technical knowledge in clinical judgment, as well as the constant reflection of the work processes that involve welcoming in urgency and emergency. The implementation of the ACCR is a constant construction and what is expected is that this device will enhance health care, broaden the scope of possibilities within the multiprofessional team, strengthen the principles of SUS and contribute to the resolution of the various impasses within health services. urgency and emergency.

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