

# Main signs and symptoms for the classification of risk in the emergency room

## Principais sinais e sintomas para a classificação de risco no acolhimento em pronto-socorro

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### RESUMO

Objetivou-se identificar por meio de revisão sistemática da literatura os sinais e sintomas que caracterizam as principais urgências e emergências atendidas em pronto-socorro. Trata-se de uma Pesquisa de Revisão Sistemática da Literatura (RSL) de caráter descritivo e exploratório. Os termos utilizados para a busca, selecionados a partir dos Descritores em Ciências da Saúde (DeCS) e do Medical Subject Heading Terms (MeSH), foram “relações enfermeiro-paciente”, “medição de risco” e “acolhimento”, além de seus correspondentes no idioma inglês “nurse-patient relations”, “risk assessment” e “user embracement”. O total de referências utilizadas somou 38: 30 artigos encontrados nas bases de dados nacionais e internacionais, dois livros, dois sites específicos sobre a temática classificação de risco e quatro apostilas do Ministério da Saúde que tratam especificamente da CR. Sinais e sintomas são características sentidas, relatadas e/ou demonstradas por uma pessoa, que pode ou não estar sob consulta com um profissional da saúde. Tornam-se subsídios para investigação do problema apresentado e parâmetros para sugerir uma possível solução. O acolhimento com a classificação de risco constitui-se de uma estratégia no atendimento no pronto-socorro, em que é possível seguir critérios e estratégias para a prioridade no atendimento dos casos mais graves. Para tal, é preciso que o enfermeiro responsável por esta triagem esteja apto e capacitado o suficiente para reconhecer os sinais e sintomas do paciente a fim de classificar seu caso de acordo com sua prioridade, possibilitando assim, um atendimento adequado às necessidades dos pacientes que chegam no pronto-socorro.

**Palavras-chave:** Sinais e Sintomas; Pronto-Socorro; Emergência

### ABSTRACT

The aim of this study was to identify, through a systematic review of the literature, the signs and symptoms that characterize the main emergencies and emergencies attended in the emergency room. It is a descriptive and exploratory Systematic Review of Literature (RSL). The terms used for the search, selected from the Health Sciences Descriptors (DeCS) and the Medical Subject Heading Terms (MeSH), were “nurse-patient relations”, “risk measurement” and “host”, in addition to their corresponding in the English language “nurse-patient relations”, “risk assessment” and “user embracement”. The total number of references used was 38: 30 articles found in the national and international databases, two books, two specific websites on the topic of risk classification and four Ministry of Health handbooks dealing specifically with the RC. Signs and symptoms are characteristics that are felt, reported and / or demonstrated by a person, who may or may not be under consultation with a health professional. They become subsidies for investigation of the presented problem and parameters to suggest a possible solution. Reception with risk classification is a strategy in the emergency room, where it is possible to follow criteria and strategies to prioritize the most serious cases. To do this, it is necessary that the nurse responsible for this screening be apt and trained enough to recognize the signs and symptoms of the patient in order to classify their case according to their priority, thus enabling an adequate attendance to the needs of arriving patients in the emergency room.

**Keywords:** Signals and Symptoms; Emergency Room; Emergency

### NOTA

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## INTRODUCTION

In Brazil, the first concrete experience of humanized care took place at the Mario Gatti Hospital, Campinas, in 2001. Previously, however, other institutions used experiences from other countries, but did not go forward. This proposal was evaluated and approved by the technicians of the Ministry of Health of Brazil and gave rise to the Primer on Assessment and Risk Classification (AACR) in 2004. After the realization of the experience and consequently the implementation of the humanized care practice at Hospital Mario Gatti, the hospitals Nossa Senhora da Conceição in Porto Alegre and Ernesto Ramalho Hospital in João Pessoa were pioneers in the use of this action in their realities. In 2005, in the state of Minas Gerais, with the assistance of QualiSUS of MS and taking into account local academic discussions, the Odilon Behrens Municipal Hospital, in Belo Horizonte, implemented the AACR protocol, based on the experience of the Mario Gatti Hospital in Campinas, in the Canadian, the Australian and the Advanced Trauma Life Support - ATLS<sup>(1)</sup> protocols.

The AACR proposes that: there be an organization of access of the users to the emergency services, abolishing the usual way of entry by queues and / or order of arrival; the relationship between health professionals and users is improved, as regards the way professionals listen to their problems and demands; improving integration with the team and improving group work, with responsibilities shared by professionals in relation to users and increasing the link between professionals and users of the system, creating trust between the actors in the process; address the user beyond the disease and its complaints; if one has a bio-psycho-socio-spiritual and cultural approach, respecting the capacity of the service and the demand<sup>(2,3)</sup>.

The reception is understood as an action that permeates any relationship between the health professional and the user. All staff should be welcoming, humanized, receptive and, above all, resolute. Reception is a technical action in the provision of assistance in which there must be changes in the behavior of professionals towards users and their social network, based on technical, ethical, humanitarian and solidarity parameters, recognizing the user as the participant and active subject in the process of producing their health<sup>(4)</sup>.

The nurses who carry out this work in Brazil expressed positive feelings about their practice, because they feel more autonomous and freer in decision making; determining the severity of a patient's responsibility increases, and with this is added values to the profession<sup>(5)</sup>. The host consists of a stage of work. It is carried out from the moment of receipt of the user

until the evaluation of its possibilities of response to the intervention, resulting in the complementation of the specific knowledge and practices of the different professional categories<sup>(4)</sup>.

The classification of risk presupposes the determination of agility in the service from the analysis under the perspective of pre-established protocol, with a view to the level of user need, providing attention focused on the level of complexity, not on the order of arrival<sup>(6)</sup>.

To achieve the objectives of the National Humanization Policy (HNP), there are some standard prerequisites of the Ministry of Health, which are: to establish the protocols for care and risk classification; qualify staff members to welcome the patients; have an information system, schedule outpatient visits and specific referrals; to quantify daily the attendances, as well as the profile of the clientele in the peak hours and also to adapt to the physical and logistic structure of the areas of emergency attendance. Thus, it is necessary to divide these service locations by level of complexity, optimizing the technological resources and the teamwork force according to the needs of the patient. Thus, the risk classification can be defined by the color of the area<sup>(6)</sup>:

**Red:** aimed at the care of patients of greater complexity, equipped with the objective of evaluation and stabilization of urgencies and clinical and traumatic emergencies. These patients should be referred directly to the red room (emergency room) due to the need for immediate care;

**Yellow:** for the care of critical and semi-critical patients who are already stabilized. These patients need medical and nursing care as quickly as possible, but are not at immediate risk. They should be referred to the nursing consultation room for risk classification - priority one, care in a maximum of 15 minutes;

**Green:** receives non-critical patients who are observing or waiting for vacancies in the hospitalization units or even removals to other hospitals. Patients in acute conditions (relative urgency) or not acute, attended with priority on simple consultations, and the care must occur in a maximum of 30 minutes;

**Blue:** receives patients for low and medium complexity consults. Must have reception area with mandatory flow upon arrival. It encompasses the other conditions not framed in the above situations, in which the attendance will be according to the time of arrival. The waiting time can vary in up to 3 hours, according to the demand of these calls, urgencies and emergencies;

Priority identification is done using a colored sticker placed in the upper right corner of Emergency Bulletin<sup>(6)</sup>.

Thus, when the individual searches for urgency and emergency services, they should be accepted, since this is considered the initial phase of the service, based on the patient's complaint or on the team observation, which will refer the cases to the risk classification with the nurse <sup>(7)</sup>.

The process of risk classification begins with the presentation of the complaint, which directs the specific flow chart to be followed. Successive questions are asked regarding discriminators until a positive response is obtained. We then reach the clinical priority, defining the level of urgency with the corresponding color and the probable time of care. Therefore, the priority decision is no longer random, subjective or in order of arrival, as in the early stages of this care, and is based on well-founded criteria. The evaluation of clinical parameters and the visual perception of signs of severity also make up the evaluation process <sup>(8)</sup>.

In this way, to identify through a systematic review of the literature the signs and symptoms that characterize the main urgencies and emergencies attended in the emergency room.

## METHOD

The Systematic Review of Literature (RSL) was descriptive and exploratory. This research method is defined as a planned review, with the purpose of answering a specific question, being carried out by explicit and systematic methods in order to identify, select and critically evaluate the studies, thus reducing the bias in their selection, synthesizing studies of relevant problems objectively and reproducibly by means of a scientific method <sup>(9)</sup>.

RSL is a summary of the evidence from primary studies to answer a specific question, determining any flaws or inconsistencies in the body of the research during the analysis and whether there will be a need to replicate a study already undertaken with distinct populations or otherwise, in addition to identify theoretical frameworks or concepts for the research problem of relevance, assist in the interpretation of study results and in the development of implications and recommendations. To that end, RSL is a crucial task to support quantitative research <sup>(10)</sup>.

This literature review was comprehensive, unbiased and reproducible since it located, evaluated and synthesized a set of evidences among the scientific studies, in order to obtain a general and reliable estimate of the effect of the intervention.

The research evidenced, in a clear and objective way, the information extracted from the synthesis of the published studies on the subject matter to replicate this knowledge with the objective of applicability and

scientific reproducibility, allowing the reader a broad and enlightened theoretical vision directed to clinical practice <sup>(11)</sup>.

RSL was developed respecting the following methodological steps: Definition of the problem / object of the study: What are the signs and symptoms of the main diseases treated and classified as urgencies and emergencies in emergency services?; Criteria for inclusion of the studies: articles were selected that contained one or more descriptors in their title. When there was none, the study should contemplate in the abstract the proposed subject, in order to contribute with clinical data and / or clinical evaluation of the patient, and should be present in national or international indexed electronic databases; Study search: independently done by two reviewers. Among the criteria for the selection of papers, the aforementioned materials that were used, however, when the title or abstract was very pertinent to one of the researchers, but was difficult to access, there was a meeting among the researchers to obtain a consensus between including or not study (given its relevance to eligibility); Critical evaluation of the studies: the studies were read independently by the two reviewers and then grouped successively into categories A, B and C. They were classified by relevance, and class A consisted of articles that fully eligibility criteria and obtained everything the reviewers needed; those in category B had one or more descriptors in the title and / or in their abstract and were of the utmost importance; those of category C contemplated other topics related to the descriptors or items on the methodology or statistical analysis, among others; Data collection: a clinical record containing data on the dependent variables (Manchester classification colors, being red, orange, yellow, green and blue), and independent variables (signs and symptoms), bias risks in primary studies (which the authors themselves often pointed to as limitations), other relevant information described in the studies, quantitative numerical data (such as morbidity and mortality statistics); Synthesis of the data: paraphrases were made of the relevant excerpts selected for the literature review and directed to their respective chapters <sup>(12)</sup>.

At this stage, the researchers exhausted all the possibilities of descriptors in the Portuguese and English languages, as well as their synonyms, and divided the similar descriptors by search relevance. Manual and electronic identification of possible references. Articles that were not available online for free were manually annotated and searched locally at libraries of the Federal University of São Paulo (UNIFESP) and University of São Paulo (USP). After reading the abstracts, all the

promising references were saved on researchers' computers and on flash drives.

The studies were screened for relevance and properties (the most relevant were validation studies) or were those that described the disease clinic. References initially considered relevant were discarded but, with a complete reading of the text, they were irrelevant because they did not present pertinent information to the research. Next, the relevant references and annotations of the most important passages (tabulation) were read. New references, identified through the citations of the articles analyzed, were investigated to compose the reference database. Finally, the materials were analyzed and integrated into the writing and the review was written.

The research strategy for these studies was long. In the months of June 2014 to June 2015, the literature was searched in the Nursing Databases (BDENF), Latin American and Caribbean Literature in Health Sciences (LILACS), Spanish Bibliographical Index in Health Sciences (IBECs), Medical Literature Analysis and Retrieval System Online (MEDLINE). The searches were carried out in the following ways: Electronic Database of the Virtual Health Library (VHL), Latin American and Caribbean database of Health Sciences Information (better known by its original name Regional Medicine Library (BIREME), Nursing journals, Medlars Online (PUBMED), and digital libraries of theses and dissertations of the Coordination for the Improvement of Higher Education Personnel (CAPES).

The terms used for the search, selected from the Health Sciences Descriptors (DeCS) and the Medical Subject Heading Terms (MeSH), were "nurse-patient relations", "risk measurement" and "reception", in addition to their corresponding in the English language "nurse-patient relations", "risk assessment" and "user embracement".

These descriptors were combined in different ways for database consults. They were first combined and separated by "quotation marks"; Then, only two descriptors were combined, such as: nurse-patient relations and risk measurement, separated by quotation marks, which did not return any results, but, when the same terms were combined by the AND boolean connector, 226 publications were found, which were subdivided into 217 publications in PUBMED and nine in Central-Controlled Clinical Trials; of these, 27 articles were used, due to the inclusion criteria according to which at least one descriptor or synonym of the investigator should be included or to contain in the abstract the subject selected for the search.

New searches were made using only the AND boolean connector with the descriptors: Relations

nurse-patient AND host, which returned 31 articles, of which 15 were in LILACS, ten in BDENF and six in PUBMED. An article was used, present in the databases PUBMED, LILACS and BDENF, that met the inclusion criteria.

The last combination, between the descriptors Reception AND Risk Measurement, returned 11 publications, five in LILACS, four in BDENF and two in PUBMED. Two publications were used, one of which was duplicated in the LILACS and MEDLINE databases and the other was in MEDLINE only.

It was necessary to combine the same terms in English in order to find as many indications as possible. In addition, it was necessary to refine the search in the PUBMED database using the terms described above, but with the descriptors separated by quotation marks, which returned with the first combination the same amount of articles investigated in the VHL, being 226 in total. Of these, 27 previously described articles were used.

In the second search, only two articles were found, and only one was used, the same found by the Portuguese search in the BVS.

In the third search, only one article was found, which had already been found in the BVS with the Portuguese search.

The total number of references used was 38: 30 articles found in the national and international databases, two books, two specific websites on the topic of risk classification and four Ministry of Health handbooks dealing specifically with the CR.

## RESULTS

Signs and symptoms are characteristics that are felt, reported and / or demonstrated by a person, who may or may not be under consultation with a health professional. They become subsidies for investigation of the presented problem and parameters to suggest a possible solution. These signs and symptoms will be presented further through scientific research done with published data on the subject.

Table I summarizes the main results presented in the articles contained in this chapter:

## DISCUSSION

Many diseases are accompanied by signs and / or symptoms. Some may be silent, called asymptomatic. In this perspective, a sign is defined as everything perceived in others, and once there is an evaluation, we can notice and / or evaluate objectively what happened, for example, a hypertensive crisis, which, in addition to other characteristics, presents as the main sign the increased systemic blood pressure at levels greater than

**TABLE 1 – Main results of the RSL according to the publications. São Paulo, SP, Brazil, 2014-2015.**

AUTHOR / YEAR	TITLE	JOURNAL	COUNTRY	MAIN RESULTS
André, C. 2009	Arterial hypertension in the acute phase of cerebral infarction. Current practice survey in a University Hospital	Arquivos de Neuropsiquiatria	Brazil	Stroke is the leading cause of functional disability in the Western world. In cerebral hypertension, clinical signs are characterized according to the extent of the lesion and its neurological deficits. Patients present hemiparesis, hemianopia and global aphasia, associated or not with decreased levels of consciousness. When severe hypertension occurs, seizures and vomiting may occur.
Balbinout, R. A. A 2014	Diabetes, cardiovascular diseases and obesity: legislation review in Argentina, Brazil and Colombia	Revista da Diretoria Sanitária	Argentina	Non-communicable chronic diseases are the leading cause of death in Latin America, with 14 million deaths a year, especially in financially disadvantaged people who could be prevented. Argentina, Brazil and Colombia, have the goal of reducing these deaths by 25%, a compromise with the organization health. All three countries have legislation
				specifically for the control and reduction of CNCD, however, these public policies are not being made with commitment, given this amount of deaths.
Clare, C.M;	The importance	Revista	Brazil	Coronary insufficiency
Araújo, M.	of the evaluation	SOCERJ	Brazil	acute (ICA) is one of the
1999	of pain			main causes of death
	thoracic			in Brazil and the USA, the pain
	insufficiency			thoracic disease is the
	coronary			symptom, and should be
	acute in			carefully assessed,
	Unity of			because about 2.5% of
	Chest pain			patients with myocardial infarction
				myocardial infarction present
				and are released from service
				due to erroneous evaluations.
				This study
				types of chest pain as well as
				how the differentiations
				between them.
Duncan,	Chronical Diseases	Revista de	Brazil	DCNT have the highest
B. B;	not	Saúde Pública		cause of death in Brazil,
Chór, D.;	transmitted			even with the public health policies
Aquino,	in Brazil;			
E. M. L.;	priorities			adopted. They pointed to
Benseñor,	to			need for research
I. J. M.;	confrontation			and knowledge generation
Mill, J. G.;	and			people, and the
Shimidt,	investigation			on the importance of
M. I.; Lotufo,				preventive actions.
P. A.;				It presents data on
Vigo, A;				signs and symptoms of
Barreto, S.M.				major diseases
2012				in the
				emergency.
Franco, B.;	Patients	Revista Latino	Brazil	Discusses the factors that
Rabelo,	with heart acute attack	Americana de		interfere with the search for

E. R.;		Enfermagem		patient services
Goldmeyer, S.;	myocardium			emergency services, which
Souza,	the factors			mainly related
E. N. S.	what			chest pain and fatigue.
2008	interfere with			It points to the need for
	search for			nursing team in
	services of			recognize promptly the
	emergency:			IAM, and also acknowledge the
	implications			need for
	to the			effective participation of
	education in			nursing team in
	health			guide the population and
				work with actions of
				preventive education in
				health
Garritano, C.	Analysis of	Arquivos	Brazil	Stroke survival is
R.; Luz,	tendency of	Brasileiros de		large, however, the
P. M.;	mortality	Cardiologia		morbidity plagues almost
Pires, M. L. E.;	by			all patients, from
Barbosa, M. T. S.;	Cerebral vascular			a simple deviation of rhyme, to total
Batista, K. M	accident in Brazil in			paralysis on one side of the body, these
2012	the 21st century			sequels affect 80% of the survivors, Brazil
				is the country with the highest mortality rate
				and this disease is more common in women.
Gomes,	Factors	Arquivo	Brazil	Concepts related to
A. M. C. G.;	prognostics	Brasileiros de		patients who had
Timerman, A.;	of survival	Cardiologia		brain inactivity and
Souza,	post-			post cardiac arrest
C. A. M.	resuscitation			cardiac; these were from
2005	cardiorespiracy			young people to the elderly, 14 to 93
	brain tumor			years, 77% of the sample. The
	in hospital			prognostic factors of
	general			survival
				in nine years of evolution
				were: not having received
				epinephrine;
				be resuscitated in a hospital
				private time and
				reanimation less than or equal to
				15 minutes.
Ishitani,	Inequality	Revista de	Brazil	Diseases
L. I.; Franco,	social and	Saúde Pública		cardiovascular diseases (CVD)
G. F.;	mortality			represent the first
Perpétuo,	precocious			cause of death in Brazil.
I. H. O.;	diseases			1/3 of deaths from diseases
França, E.	cardiovascular disease			of the heart occur in
2006	in Brazil			young individuals aged 35 to
				64 years in the sample
				analyzed, of deaths due to DCV
				It was noted that the
				patients had low
				schooling, conditions
				precarious housing, or
				either the deaths occurred
				in patients with these
				conditions. The analysis of
				mortality of municipalities
				showed an association between
				cardiovascular diseases and
				socioeconomic factors is
				likely better
				schooling allows
				better living conditions
				and consequently,
				positive impact on
				early mortality

Jorge, V. C.; Barreto, M. S.; Ferreira, A. L. M.; Santos, E. A. Q.; Rickli,	Team of nursing and detection in indicators in	Revista Escola Ana Nery	Brazil	Emergency room service hospital is one of the sectors that deserve greater attention of the spheres of government, because that's where they emergencies.
H. C, Marcon, S. S 2012	aggravation in patients suddenly help aggravation			Nursing is prepared to locate signals of emergency alert, such as changes in SSVV, in the color of skin, and awareness, vomiting, pain and restlessness, are perceived symptoms throughout the team, and that requires care immediate.
Kopel, L.; Carvalho, R. T.; Lage, S. C	Indications of agents inotropic at insufficiency cardiac.	Revista da Sociedade de Cardiologia do Estado de São Paulo (SOCESP)	Brazil	Heart failure is linked to high rates of morbidity and mortality, even if treated properly is considered a problem of public health. This study exemplifies the clinic of heart failure, as well as therapy be instituted.
Laizo, A. 2009	Disease pulmonary obstructive chronic - a review	Revista Portuguesa de Pneumologia	Portugal	Concepts of the clinic specific to COPD, associated risk factors, as smoking, and that this habit is associated directly the disease and problems cardiovascular diseases. Being responsibility of the citizen, who through their erroneous habits develops one of these diseases.
Lipp, M. E. N. 2001	Stress emotional contribution in stressors internal and external	Revista de Psiquiatria clínica	Brazil	List the factors unleashed physiologically emergency diseases, which exacerbate hormonal activities and deregulate the functions body. And all the hormonal factors associated with heart disease.
Martin, J. F. V.; Loureiro, A. A. C.; Cipullo, J. P. 2004	Hypertensive Crisis: update clinic therapy	Arquivos de Ciências em Saúde	Brazil	Approaches concepts related to arterial pressure, hypertensive crisis, early detection of injuries and possible complications treatment. Effect of drugs that are commonly used for treatment of hypertension.

Malta, D. C.; Moura, L.; Prado, R. R.; Escalante, J. C.; Schimidth, M. I; Duncan, B. B. 2014	Mortality due to chronic non-transmissible diseases in Brazil and its regions, 2000 to 2011	Epidemiol. Serv. Saúde, Brasília	Brazil	Descriptive and qualitative study describing mortality from chronic noncommunicable diseases (CDNT) in the period 2000-2011 and projections of the DCNT Coping Plan in Brazil for 2011-2022, where the highest death rate occurs in both sexes. In the year 2008, there were 36 million global deaths (63%), especially circulatory diseases, diabetes, cancer and chronic respiratory disease.
Martin, J. F. V.; Higashiana, E.; GARCIA, E.; LUIZON, M. R.; CIPULLO, J. P. 2004	Profile of hypertensive crisis: prevalence and clinical presentation.	Arquivo Brasileiro de Cardiologia	Brazil	Concepts related to hypertensive disease, and mortality from NCDs from 2011 to 2012. Evaluation of the number of patients treated with hypertensive crisis in a university hospital. It emphasizes that hypertensive crises occupy a prominent number in the diseases treated in the emergency room.
Masaro, A.; Schout, D 2004	Strokes in Brazil: A Public Health Problem	Conselho Regional de Medicina do Rio de Janeiro CREMERJ	Brazil	It presents stroke as a disease of great social and economic impact in Brazil, and as the disease that causes most deaths in Brazil, being a public health problem, with differences in mortality rates, and strong ethnic and social influences. In addition to these data, it provides information about the disease, as well as its signs and symptoms, and all associated morbidities.
Monteiro- Júnior, F. C.; Anunciação F. A. C.; Salgado- Filho, N.; Silva, G. M. A.S; Barbosa, J. B.; Ferreira, P. A. M.; Lages, J.;	Prevalence of true hypertensive crises and adequacy of medical management in patients seen in	Arquivos Brasileiros de Cardiologia	Brazil	HAS is considered to be one of the most frequent problems in the search for emergency medical care, and corroborates with the increased rates of DCV development. Blood pressure high was the main reason for the demand for the
Mandari, N. R.; Silva-Junior, W. S.; Monteiro, C. C. 2008	a ready-general relief with high arterial pressure			emergency, which accounted for almost 20% of all visits to doctors. The conduits related to early detection and treatment were correct from the clinical point of view. In this study, the importance of good initial evaluation and correct therapy established, as factors that influence the increase in survival.
Oliveira, K. C. S 2004	Factors of risk in patients with acute heart attack myocardium in a hospital from Ribeirão Black - SP	Escola de Enfermagem de Ribeirão Preto	Brazil	In Brazil, there are high deaths due to DCV, and myocardial of the myocardium is that presents with greater relevance. Cites habits of family history and life relevant to the appearance and / or aggravation of the disease. It also has data of signs and symptoms of infarction, as well as other



				correlations.
Oliveira, A. R. S.; Costa, A. G. S.; Moreira, R. P.; Cavalcante, T. F.; Araújo, T. L	Diagnostics in nursing: activity / Exercise on patients with an vascular cerebral accident	Revista de Enfermagem da UERJ	Brazil	The main objective was to presenting diagnoses of nursing for patients with stroke. The study lots of information relevant information on disabilities brought about by disease, as well as its clinic, differentiating sites of the appearance of symptoms.
Oliveira, M. C.; Santoro, C. D	Conduct of team of nursing before the changes clinics customer with syndrome ischemic coronary	Escola Anna Nery Revista Enfermagem	Brazil	Presented clinical signs infarction and angina as well as as the conduct of nursing in front of these patients, not so much concerns the timing of evaluation, how much related to pipelines later.
Rech, T. H.; Vieira, S. R. R	Hypothermia therapy in patients post-cardiorespiratory stop: mechanisms of action and development of Hypothermia therapy	Revista brasileira de Terapia Intensiva	Brazil	Discusses stop data cardiopulmonary resuscitation how the problems generated by hypoflow cerebral in these circumstances, clinical conditions patient at the time of occurred, as well as addresses the hypothermia intervention
	health care protocol			as a poorly administered but effective method for the treatment of cerebral ischemic sequelae caused by CRP.
Sociedade Brasileira de Cardiologia SBC	Guidelines for evaluation and treatment of patients with arrhythmias cardiac	Arquivos Brasileiros de Cardiologia	Brazil	It addresses contexts of clinical evaluation patients with arrhythmias cardiac disorders. The main data are the differences between them, and how know how to identify them. Treats these cardiac changes as a serious problem public health, and difficult to control, given the pre-available factors, that the population ends up undervaluing
Sociedade Brasileira de Cardiologia SBC	Guidelines for disease coronary chronic angina stable	Arquivos Brasileiros de Cardiologia	Brazil	Treats the pathophysiology of coronary syndromes, as well as your clinic and specific interventions by the health professionals
Sociedade Brasileira de Cardiologia SBC	Brazilian s Guideline for Hypertension	Arquivos Brasileiros de Cardiologia	Brazil	It addresses hypertension as a serious problem of public health. part of the population is exposed, and even with all public policies of treatments less costly and remedy

				free, yet some
				people underestimate the
				disease and end up
				have problems
				arising therefrom, or
				they even reach the
				death rates, raising the
				mortality.
Souza, V.;	Debit	Acta paulista	Brazil	Covers data contained in the
Zeiton,	cardiac	enfermagem		literature on
S. S.; Barros,	decreased:			defining characteristics
A. L. B. L.	review			(signs and symptoms) of
2011	systematic			nursing diagnosis
	of			decreased cardiac output.
	defining			Brings the whole clinic
	features			suggestive of
				low frequency of
				heartbeat, and
				discusses the importance of
				recognition
				precocious.
Swedberg, K.;	Guidelines	European Heart	England	Guide to diagnose and
Cleland, J.;	for the	Journal		to treat chronic diseases
Dargie, H.;	diagnosis			of the heart. It addresses the fact
Drexler, H.;	and			the prevalence of
Follath, F.;	treatment of			cardiac insufficiency
Komajda, M.;	chronic heart			increase with age.
Tavazzi, L.;	failure			Conglomerated in this study
Smiseth, A.;				two previous guides, the
Gavazzi, A.;				years 1995 and 1997, and
Haverick, A.				with this updated the
2001				information. This article
				has a lot of data on
				heart disease as well as
				as their evaluation and
				treatment.
Tavares,	The care of	Departamento	Brazil	Treats concepts about stroke,
S. M. S.;	nursing	Nacional de pós-		as well as signs and
Oliveira,	to the patient	graduação e		symptoms and sequelae. Brings the
I. R. S. O	with an accident	atualização		nursing care
s.a	vascular	Universidade		as of utmost importance
	brain in	UNIRIO		in this regard, for the
	environment			reduction of morbidities in
	intra-			the hospital sector.
	hospital			
Witte, K. K.;	Why does	Progress in	United	Traz a discussão sobre as
Clark, A. L	chronic heart	Cardiovascular	Kingdom	consequências sistêmicas da
2007	failure cause	Diseases		disfunção ventricular à
	breathlessne			esquerda, na insuficiência
	ss and			cardíaca congestiva; clarifica
	fatigue?			qual a relação fisiológica
				com os sintomas e sinais de
				insuficiência cardíaca.

Source: research data

140X90 mmHg; while symptom is characterized by a complaint reported by others that cannot be evaluated because it is subjective, and the professional cannot be sure that the symptom exists. Although based on the assumption that the patient is reporting the truth, the individual can make interpretations as they wish and communicate them through verbal or facial reporting to the professional. As an example, the headache, felt by the patient and impossible to prove by the professionals. Other information that may be observed are risk habits, which include alcoholism, smoking, as well as other issues presented below <sup>(13,14)</sup>.

A study <sup>(15)</sup> conducted with a hospital's nursing team revealed that their knowledge on detecting problems in patients in the emergency room was mainly related to perceiving the patient's behavior and assessing their vital signs. Signs and symptoms reported nausea, vomiting, cutaneous pallor and pain, which were important data to be considered in the first contact with the patient.

The difference between symptom and sign is that signs can be perceived by another person, without the patient's report or communication, unlike the symptom, which is the complaint reported by the patient which only they can perceive. Symptoms are subjective, subject to the patient's own interpretation <sup>(13)</sup>.

All patients seen at any health service should be seen according to their clinical signs and possible medical problems they may cause. The main purpose of the Risk Classification protocols is to carry out an evaluation with the intention of identifying the priority of care, prioritizing the most serious. It does not have the purpose to exclude or reject other clients, but to organize the flow in health systems and to quickly select the diagnostic hypothesis and early treatment of the disease or injury presented <sup>(16)</sup>.

Before naming diseases of greater severity and complexity, both regarding diagnosis and treatment, nurses should remember that it is not only a good data collection that will help them classify and carry out clinical judgment of a patient. A good evaluation is made by joining this collection with the analysis of risk factors and evaluation of laboratory and imaging exams - when they fit <sup>(16,17)</sup>.

Chronic noncommunicable diseases are the major cause of worldwide mortality. In 2008, 63% of the deaths occurred in this group of diseases, reaching mainly people living in low- and middle-income countries with low school levels. In adults less than 60 years of age, the diseases described below were listed according to a large literature review that included the main causes of death and / or disability in Brazil <sup>(14)</sup>.

Several risk factors have been identified through epidemiological studies that lead to the onset of diseases

that evolve to urgency or emergency, especially neurological, cardiovascular and respiratory diseases. They were classified into two groups: important risk factors and contributing risk factors <sup>(18)</sup>.

### Important risk factors

**Cholesterol and Triglycerides:** These are fats found in the blood, important for humans, but high levels are harmful. Because they do not dissolve completely in water, they are transported into the blood in the form of particles called Very Low-Density Lipoprotein (VLDL), low-density lipoprotein (LDL) and protein high-density lipoproteins (HDL). LDLs carry cholesterol to the walls of the arteries and, at high levels, increase the risk of cardiovascular disease. VLDLs are rich in triglycerides that play an important role in energy, but at high levels they lead to obesity. Desirable values for a healthy life are: total cholesterol (LDL + LDL + HDL) = less than 200 milligrams per deciliter (mg / dL), LDL cholesterol = less than 130mg / dl, HDL cholesterol (cholesterol) = greater than or equal to 35 mg / dl, triglycerides = less than 200mg / dl <sup>(14,18,19)</sup>.

**Age and Sex:** Increased age is associated with anatomical and hemodynamic changes in the cardiovascular system. These changes include collagen degeneration, loss of elastin, thickening of the vascular medial layer and reduction of vascular compliance. Women over 55 years of age have already presented menopause, where there is a reduction or total deprivation of protective estrogens against atherosclerosis <sup>(18,19)</sup>.

**Heritability:** The hereditary factor influences and increases the risks of the development of cardiovascular diseases. The greater the degree of kinship in relation to the family member with precedents of the disease, the greater the probability <sup>(20)</sup>.

**Smoking:** It is considered a public health problem, being related to 90% of cases of lung cancer, 86% of bronchitis and emphysema and 25% of cases of cardiac ischemia. It increases the risk of coronary artery disease and other atherosclerotic diseases. Smoking accelerates the development of atherosclerotic lesion, but also increases the risk of overlapping thrombotic phenomena due to the cytotoxicity caused by cigarette tissue in the cell tissues <sup>(12,20,21)</sup>.

**Hypertension:** Systemic blood pressure corresponds to the force with which blood is pumped against the walls of the arteries. This circulation is important for the nutrition of the whole body. The more difficult it is to transport blood through the artery, the higher the blood pressure will be and the higher the heart work, the more it will become overwhelmed. It is considered normal pressure for an adult when it is below 140/90 mmhg, with higher values indicating hypertension. The

disease affects 15 to 20% of the adult population, which is one of the largest and most important risk factors for cardiovascular disease <sup>(12,19)</sup>.

**Sedentary lifestyle:** People who lead a sedentary life have a high chance of being overweight - in addition to the fact that properly practiced exercise controls other risk factors such as high blood pressure, diabetes mellitus, cholesterol and high triglycerides <sup>(12,18)</sup>.

**Diabetes Mellitus:** Diabetes presents high morbidity and mortality, with significant loss of quality of life. It is one of the leading causes of mortality and morbidities such as kidney failure, lower limb amputation, blindness, and cardiovascular disease. Cardiovascular diseases are more frequent and premature in individuals with diabetes, compared to the others <sup>(2)</sup>.

### Contributing risk factors

**Stress:** The inability to overcome stressful experiences wears out the individual, leading to the breakdown of their well-being. Psychosocial stresses are strongly associated with hemodynamic changes leading to increased cardiovascular risk and hypertension <sup>(12,18)</sup>.

**Homoastelin Levels:** Homoastelin is a sulfur-containing amino acid that is synthesized during protein catabolism. It depends on vitamin B12 to be metabolized. Helps in the growth and maintenance of tissues, playing a role in the prevention of skin and nail disorders. It causes increased platelet adhesiveness, stimulates the deposition of LDL in the arterial wall and activates the coagulation cascade, therefore, when homoastelin is altered, it causes health damages to the individual <sup>(13)</sup>.

**Alcohol:** The consumption of alcoholic drinks in a long time and in high doses can generate alterations in the cardiovascular system, being able to generate lesions in the heart, resulting in arrhythmias and other problems as thrombus and subsequent strokes <sup>(12)</sup>.

**Sexual Hormones:** Sexual hormones play a risk role for the development of cardiovascular diseases. The number of men affected by acute myocardial infarction is greater than the number of premenopausal women. As women age and the estrogen rate decreases, this rate equals, that is, there is an increase in the

number of women affected by AMI after menopause. Female hormones increase HDL and decrease blood levels of total cholesterol, whereas male hormones have the opposite effect <sup>(18)</sup>.

**Socioeconomic Life:** Related to the morbidity and mortality of ischemic heart disease, income and education are correlated with the disease. Adequate income enables a healthier lifestyle, safer physical environments and better health care conditions, and individuals with lower levels of schooling have a higher risk of heart disease <sup>(12,19)</sup>.

In view of the risk factors mentioned above, authors <sup>(12,22)</sup> point out that the population's awareness of the risk factors that can be modified should be emphasized both for low and high-risk populations in order to prevent diseases resulting in consecutive reduction of morbidity and mortality rates.

The symptoms and signs that an individual presents are of great value in the evaluation of risk, since it will be by these that the risks to which the patient is exposed will be predicted. Table 2 shows the main clinics treated in the emergency room and evaluated during the risk classification, as well as the categorization to which they belong <sup>(12,17)</sup>.

### CONCLUSION

Reception with risk classification is a strategy in the emergency room, where it is possible to follow criteria and strategies to prioritize the most serious cases. To do this, it is necessary that the nurse responsible for this screening be apt and trained enough to recognize the signs and symptoms of the patient in order to classify their case according to their priority, thus enabling an adequate attendance to the needs of arriving patients in the emergency room. It should be emphasized that there is a need for training on behalf of health professionals and institutions, in order to establish strategies and standards to follow, thus improving the quality of care.

It is hoped by this study to arouse the interest of the academic and clinical community in order to give rise to further studies on the subject, even about experiences with the many existing classification standards.

**TABLE 2 – Classification of Risk and main signs and symptoms. São Paulo, SP, Brazil, 2016.**

PRIORITY LEVEL	SPECIFIC TIME	DISEASES, INJURIES, SIGNS AND SYMPTOMS
EMERGENCIAL	These conditions are potentially threatening to the life or the normal action of any organ. Rescue measures and immediate care.	<ul style="list-style-type: none"> <li>• Difficulty or respiratory arrest</li> <li>• Cardiac arrest</li> <li>• Acute chest pain with dyspnoea or cyanosis</li> <li>• Head injury</li> <li>• Deep shock</li> <li>• Coma</li> <li>• Severe bleeding</li> </ul>
URGENT	These conditions are serious, but generally not dangerous if medical support and treatment are in short supply. Treatment should begin within 20 minutes to 2 hours.	<ul style="list-style-type: none"> <li>• Chest pain without association with respiratory symptoms</li> <li>• Burns</li> <li>• Severe abdominal pain</li> <li>• Persistent nausea, vomiting and / or diarrhea</li> <li>• Bleeding from any orifice</li> </ul>
NON EMERGENCIAL	These minimum priority conditions allow a greater delay for medical care without harming the patient. Service must be performed after all emergent and urgent conditions have been met.	<ul style="list-style-type: none"> <li>• Moderate headache</li> <li>• Light burns</li> <li>• Vaginal or penile discharge</li> <li>• Upper or urinary tract infections</li> <li>• Minor fractures, dislocations and sprains</li> <li>• Chronic back pain or other chronic complaint</li> </ul>

Source: adapted from Barbieri<sup>(17)</sup>.

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