

The Triage in the Emergency Units

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ABSTRACT The transfer of the triage from the field to the emergency department appears as a necessity to compensate the imbalance between available resources at the moment of patient arrival to the ED and the patients needs at the same moment. The result is to „filter” the patients through a system to identify these who require immediate attention and high level of the medical effort; for all the rest of cases it will exist a stratification in time and resources management for each patient. The permanent changes of the acuity scales in triage lead to a better repartition of the resources and this situation leads its self to a continuous triage shifts changes.

KEY WORDS *keywords triage, emergency department*

Introduction

Text The triage is the classification and routing / dispatching of the patient according to their medical needs. It represents the mechanism or the procedure by which the patients are assessed and classified by a competent person, taking into account their clinical status and complaints, related to their age and history, stability of vital functions, the potential worsening of their condition, the need for treatment or investigations and other relevant data so that it can be established the priority of the patient to be seen and the level of assistance required. At the same time it is permitted that the patient be located in the most suitable locations for treatment. Triage is the first point of contact between patient and the medical staff. The triage is also a dynamic process: the patient's condition may improve or deteriorate during the waiting, requiring periodic reassessment of the patients before their departure. Worldwide there are many systems for sorting the patients requiring emergency medical care, each one unique as a general approach of the triage, yet sharing a huge amount of common elements (USA – Emergency Severity Index – ESI, Australia – Australasian Triage Scale – ATS, Canada – Canadian Triage and Acuity Scale CTAS, GB–Manchester Triage Scale) The assessment of the patient in triage should not take more than 2-3 minutes. The triage should consider a combination between the main plaint at arrival and objective signs. The vital signs will be measured at triage if it is required to be enrolled in a class of emergency or if time permits, without delaying emergency assistance in the case of major emergencies. The triage assessment is not meant to put a diagnosis, although this can sometimes be achieved. It is not excluded either the paraclinical investigation of the patient or guidance to a specialized office even from triage. The correct establishment of the triage categories is based on:

practical knowledge gained through experience and training, proper identification of signs and symptoms, use of guidelines and protocols. Four decisional points are being used (A, B, C, D) to classify patients into one of the five classes of triage. The four decisional points are critical for the accurate and safe application of the algorithm and can be reduced to four key questions:

1. Does the patient have a vital risk?
2. Can the patient wait?
3. How many resources does the patient need?
4. Which are the vital signs of the patient?

The answer to these questions indicate to the user the correct level of triage.

Decisional point A: Does the patient have a vital risk ?

At point A the nurse asks herself if the patient has vital risk . If the answer is "yes" the triage process is completed and the patient is automatically classified as ESI level 1. If the answer is 'no' then the user moves on to the next step of algorithm, the decisional point B. The next question is used to determine if the patient dies (conceptual algorithm): Does the patients require rescue?

Useful questions to determine if the patient meets the criteria for category 1:

- does the patient require immediate clearing of the airway, medication or other interventions on the hemodynamics?
- does the patient meet any of the following criteria: is already intubated, apneic, pulseless, severe respiratory failure, SpO₂ <90%, acute altered mental status, or does not respond to stimuli?

The interventions that are not considered life saving are those that are performed for diagnosis

or therapeutic, yet none "is life saving." Saving interventions are considered those which provide airway, breathing and circulation is maintained. Listed below are some additional questions, useful in determining the need for rescues.

- Does the patient have free airway? / Is the patient breathing? / Has he got a pulse?
- Is the nurse concerned about the frequency, the rhythm and the quality of the pulse?
- Was the patient intubated in the pre-hospital, is he not breathing spontaneously, or can he not maintain oxygen saturation?
- has the nurse any doubt regarding the patient's ability to maintain adequate tissue oxygenation?

The patient in the ESI category 1 that arrives in the emergency room, is always unstable. Because the patient may die without immediate medical intervention, the medical team should be very prompt. Patients in category 1 are taken immediately because the duration of the interventions can affect morbidity and mortality.

The main difference between category 1 and 2 is the immediate attention of the physician in assisting the patient. Patients in category 1 are critical and require immediate medical evaluation and intervention. On the contrary, although patients in category 2 are also very sick, the medical assistance can be initiated by the nurse using the protocols, without the doctor being present at the bedside. The nurse realizes that patient needs medical assistance, but believes that his condition does not deteriorate. The nurse may establish intravenous access, administer oxygen, perform an ECG, connect the patient to monitor heart before the doctor's arrival. When the need for immediate life saving intervention has been determined, the triage nurse should assess the patient's respiratory status and oxygen saturation (SpO₂). A patient with severe respiratory failure or SpO₂ <90%, breathing spontaneously, yet requiring immediate intervention to maintain airway and oxygenation. This patient requires the presence of a doctor to determine the administration of medication, or airway intervention.

The patients with chest pain should be evaluated by the same criteria. Some patients with chest pain, are stable. Although there is a need for ECG in order to set a diagnosis, they do not meet the criteria for category 1. However, patients who are pale, have diaphoresis, acute respiratory failure or are hemodynamically unstable, require immediate rescue and meet the criteria for category 1. Patients with chest pain should be

evaluated in the context of a class of criteria in order to determine the need for immediate rescues.

The triage nurse must assess the patient's consciousness level when deciding whether it needs immediate life saving interventions. The ESI algorithm uses for this purpose AVPU scale (alert, verbal, pain, non-reactive). The purpose of this part of the algorithm is to identify patients who have an acute change in level of consciousness. The nurse should establish if the patient has the clinical picture changes and whether the conscious patient is now labeled as D or A. Non-reactivity is evaluated in the context of acute neurological changes and not in the patients with mental retardation, dementia or aphasia. Any patient who is non-reactive, including the intoxicated patient, non-reactive with verbal stimuli, meets the criteria for category 1 and should be evaluated immediately. A patient with altered mental status is not able to retain the air route or having severe respiratory impairment, is an example of acute mental status change requiring immediate action.

A level 1 patient is not always brought by ambulance to the emergency department, but once the triage nurse recognizes the critical patients, they will be immediately transported to the treatment and resuscitative measures will be initiated. Most patients in category 1 are subsequently hospitalized in intensive care, while some die in the emergency department. Few of these patients are discharged directly from the emergency department if altered level of consciousness or vital signs (hypoglycemia, seizure, intoxication with ethanol, anaphylaxis) are reversible.

Decisional point B. Can the patient safely wait?

Three questions are used in order to determine if the patient falls into category 2.

1. is it a high risk situation?
2. Is the patient confused, lethargic or disoriented?
3. Does the patient accuse severe discomfort or pain?

The triage nurse must obtain the relevant subjective and objective information in order to answer these questions.

It is a high risk situation?

A patient with high risk is that patients whose clinical condition may deteriorate easily, or who has symptoms suggesting a disease that needs treatment quickly. This patient is a patient with a major potential life threat or organ failure. A high-risk patient in triage does not require a detailed

physical examination and nor the complete set of vital signs. The triage nurse will classify this patient in category 2, because the symptoms suggest the possibility of a major disease risk. If the nurse has decided that the patient can not wait,

he is labeled as Category 2 and his placement and treatment should be initiated within 10 minutes. These patients need medical assistance immediately so instead of continuing triage, the nurse may alert the treatment area.

CATEGORY	ANSWER	DESCRIPTION OF THE CATEGORY	CLINICAL DESCRIPTION
1	Consultation and treatment simultaneously and immediately	Immediate life threat Conditions which pose a threat to life (or at imminent risk of deterioration) and require immediate aggressive intervention	cardiac arrest / respiratory imminent respiratory arrest RR <10/min - severe respiratory failure BP <80mmHg (adult) and children in shock major trauma - a severe injury or ISS> 16 - TCC with GSC <10; - severe burns (> 25% of body surface area or respiratory failure) - traumatic thoracic / abdominal one of the following: impaired consciousness, hypotension, tachycardia, severe pain, respiratory failure or prolonged coma crisis or in progress severe behavior disorder / violence unconscious patient: intoxication / overdose, brain damage, metabolic disorders
2	Consultation and treatment within 10 minutes	Imminent threat to life Patient's condition is so severe or deteriorating so rapidly that there is a threat to life or multiple organ failure if not treated within 10 ' Or The necessity of prompt treatment -requiring treatment as immediate initiation to have significant effect on the evolution (eg thrombolysis) - very severe pain Severe discomfort or pain of the patient suggests the initialization of therapeutic measure within 10 min	Airway risk - severe stridor Severe respiratory failure circulatory failure - marbled skin, poor perfusion - CF <50 or> 150 / ' - Hypotension with haemodynamic effects chest pain probably coronary any type of severe pain glucose <3 mmol / l GCS <13 Fever with signs of lethargy recently installed hemiparesis or aphasia (suspicion of meningococcal infection) intraocular contact with acid or alkaline major trauma /multiple traumas high-risk history - ingestion of sedatives or other toxic- severe - severe pain suggesting pulmonary embolism, abdominal aortic aneurysm or ectopic pregnancy psychiatric disorders / behavioral - Violence / severe aggression / agitation /
3	Consultation and treatment began within 30'	Potential vital risk The condition may progress to life threatening or significant morbidity if treatment is not started in 30 ' Or Situational Emergency The risk of unfavorable evolution if the initiation of treatment is not done in time // or severe discomfort of the patient imposes the initiation of therapeutic measures within 30'	severe HTA / moderate blood loss average respiratory failure, SaO2 = 90-95% blood glucose> 16 mmol / l Coma crisis fever from any cause persistent vomiting, dehydration TCC with brief episode of loss of consciousness moderate pain of any cause - analgesia Chest pain probably non-coronarian Severe abdominal pain without risk factors moderate limb trauma, abnormal sensitivity, no pulse hemodynamically stable neonates Children suspected of having been abused behavioral / psychiatric / risk of self-harming/ acute psychosis, agitation, aggression
4	Consultation and treatment within an hour	Potentially severe patient's condition may deteriorate / poor prognosis if treatment is not started within 1 hour. Moderate or prolonged symptoms. Or Situational Emergency The risk of unfavorable evolution if the initiation of treatment is not done within 1h Complexity or severity will probably require more complex assessment and / or hospitalization severe discomfort requires initiation of therapy in 1 h	average hemorrhage aspiration of foreign bodies without affecting respiration chest injury without rib fractures or respiratory disease aphasia, without respiratory failure minor TCC without loss of consciousness moderate pain, some risk factors vomiting or diarrhea without dehydration inflammation of the eye or intraocular foreign bodies - without impaired vision minor limb injuries nonspecific abdominal pain behavioral disorders / psychiatric - under observation without immediate risk to themselves or others - semi-urgent problems

Is the patient confused, lethargic or disoriented?

This is the second question in the decisional point B. The main concern is whether the patient has an acute change of consciousness. Patients whose mental status is characterized by basic confusion, do not fall into category 2.

Does the patient have severe pain or discomfort?

This is the third question in the decisional point B. If the answer is "no", the nurse can go to the next stage of the algorithm. If the answer is "yes", the nurse must assess the degree of pain. This is determined by clinical observation and / or reported by the patient as a degree of pain greater

than or equal to 7 (on a scale from 0-10). When the patient reported a pain level of 7 out of 10 the triage nurse may classify the patient in category 2, yet this is not compulsory. Pain is the most frequent complaint of patients in the emergency department and is obvious that not all patients reporting pain of 7 / 10, require classification in Category 2. A patient with a sore ankle sprain with a grade of 8 / 10 is an example of a patient in ESI category 4. The severe discomfort may be physiological or psychological. The patients in category 2 represent approximately 20-30% of all patients who arrive in the emergency room, and 50-60% of them are hospitalized . Once a patient has been classified as Category 2, the nurse should ensure that he will receive medical care on time.

Registration can be completed by the patient or bedside carers. Patients in ESI category 2 require a determination of the vital signs and a more detailed assessment, but not necessarily in the triage.

Decisional point C: The resources required

If the answer to the first two questions of the decisional points is no, then the triage nurse moves to decisional point C. "How many resources does this patient need, so that the physician may be able to take a decision on the patient's journey?" Resource estimation is made according to standard and is independent of the type of hospital (academic or not) and location. A patient who arrives to any emergency department must consume the same resources in order to decide its course and individual practice must not be taken into account, but rather, standardized and accepted medical practice for the emergency department. Resources may be hospital services, tests, procedures, checkups, or interventions that go beyond the competence and physical ability of the emergency doctor or simple interventions such as applying a bandage. Patients ESI 3 represent 30-40% of patients that arrive in the emergency department. Usually they require a more detailed assessment, however they are considered to be stable on the short-term, therefore, they may rest longer in the emergency. ESI Patients in category 4 and 5 are 20-35% of all patients, or more in communities with limited access to primary health care.

Decisional point D: The patient's vital signs

Before classifying the patient in category 3, the nurse should determine the vital signs and decide whether they are within normal limits for the patient's age. If the vital signs are outside the accepted parameters she must take into account the reclassification of the patient to a higher category, that is, category 2. However, it is the nurse's decision whether the patient is reclassified according to the vital signs. The vital signs differ depending on age. The pediatric guidelines for fever are specific.

Conclusion

The triage was born as a necessity in a crisis situation. It evolved to prevent crises. Finally it is less important the type of system, but its existence and consistent application.

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