



EDITORIAL

If triage works, the ED works

Si el triaje carbura, la urgencia funciona

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The aim of this statement, which simplifies the inherent complexity of an emergency department (ED), is to highlight the essential role of the clinical process of triage in the correct functioning of an ED.

Emergency departments are visited by thousands upon thousands of patients with a broad range of complaints and potential risk of deterioration, without scheduled appointments and with unpredictable clustering at different times of day. This requires a system to be in place to stratify them safely and effectively based on the risk of deterioration and, at the same time, distribute them over the different spaces of the ED. If patients receive appropriate and effective care, triage has fulfilled its purpose.

Today, no ED should exist without a standardised patient triage system. International organizations such as the International Federation for Emergency Medicine and others closer to home, like the Sociedad Española de Medicina de Emergencias (SEMES, Spanish Society of Emergency Medicine) and the Sociedad Española de Urgencias de Pediatría (SEUP, Spanish Society of Paediatric Emergency Medicine) consider the presence of a triage system an indispensable indicator of quality and a benchmark for the assessment of the performance of EDs. The implemented triage system should ideally be based on validation studies.

A triage system must be useful (easy to understand and quick to apply), reliable (adequate interobserver and intraobserver agreement, or consistency in triage among different staff and in each individual staff) and valid (degree to which the assigned triage level corresponds to the actual level of urgency). The best way to validate a diagnostic tool or scale is assessing criterion validity by analysing its correlation to an external reference criterion or “gold standard” that, by definition, is absolutely accurate. This validation approach is particularly challenging in triage systems due to the lack of an adequate reference standard for “urgency”. In consequence, most studies have used outcome predictors (prognosis, disease severity, complexity of the case) as proxy criteria to assess validity.¹

Five-level triage systems are the type for which there are the most published validation studies and most frequently endorsed by different scientific societies. The most recognised and widely implemented at the international level are the Australasian Triage Scale (ATS), the Canadian Triage and Acuity Scale (CTAS), the Manchester Triage System (MTS) and the Emergency Severity Index (ESI), to which we must add the Sistema Estructurado de Triage (SET, or Structured Triage System, consisting of the Spanish triage system [*Sistema Español de Triage*] and the Triage Model of Andorra [*Model Andorrà de Triage*]), developed and applied in Spanish-speaking settings (Spain, Andorra and Spanish-speaking countries in Latin America) (Table 1).

The earliest triage system for hospital emergency care settings as developed in Australia in the 1970s with the design of the ATS scale (previously known as ITS and NTS),

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Table 1 Triage systems used most widely in the paediatric population in emergency care settings.

System	Country of origin and year developed	Triage levels	Distinctive features
Australasian Triage Scale (ATS)	Australia (NTS 1993, ATS 2000)	5	- First five-level triage system implemented at national level
Canadian Triage and Acuity Scale (CTAS)	Canada (1997)	5	- First system with a specific paediatric scale
Manchester Triage System (MTS)	United Kingdom (1995)	5	- It works through symptom-based flowcharts - Can be used for telephonic triage
Emergency Severity Index (ESI)	United States (1999)	5	- Considers the required use of diagnostic and therapeutic resources in establishing the level of priority
Sistema Estructurado de Triage (SET, or Structured Triage System)	Spain (2003)	5	- It includes an electronic support programme that, among other things, activates time-dependent condition codes - A paediatric version is available

which has since been implemented in every Australian ED. Although few validation studies have been conducted for the ATS, specific quality control systems have been developed for it and it is currently used as a clinical indicator, a tool for comparative assessment and a funding instrument for EDs in Australia. Although there is no specific paediatric version of the ATS, the scale can be applied to any age group and in urban as well as rural settings.

In Canada, the CTAS was developed based on the early versions of the ATS. Since 2002, the CTAS is accepted as the Canadian standard for triage at the national level. A specific paediatric version (PaedCTAS) has been available since 2001, and its validity has been demonstrated through the strong association found between the triage level and multiple markers of severity. The actual performance of the scale in identifying the level of urgency has yet to be assessed.²

The MTS is the triage system that has been studied most extensively in the paediatric population, using a reference standard developed by experts for criterion validity assessments. Its successive modifications have improved its specificity, although its sensitivity for identifying high levels of urgency continues to be modest and the overtriage rate continues to be greater than desired.³

The ESI, developed in the United States and currently used in more than 70% of EDs in this country, has the distinctive feature of considering the resources the care of the patient is anticipated to require in classifying patients. Although it has 5 levels, it is actually based on the assessment of 3 levels of urgency, the resources needed and the vital signs. It has proven valid for the triage of paediatric patients in United States EDs based on its adequate correlation between the urgency level and severity markers such as hospital admission, length of stay in the ED and the use of resources.

The SET is a structured triage system that was first implemented in several autonomous communities in Spain in 2003 and is now the most widely used system in Spain. It is the adaptation in Spanish of the Model Andorrà de Triage (MAT), which in turn is a conceptual adaptation of the CTAS. It includes a software application to guide clinical decision-

making in triage (Triage SET) in both adult and paediatric patients. The most thorough validation study conducted in paediatric patients, published in 2006, found a good correlation between severity markers and priority levels.

Many countries have adapted some of these systems to fit their own needs or developed new systems with some evidence of their validity (Korean Triage and Acuity Scale; Taiwan Triage and Acuity Scale; South African Triage Scale; Medical Emergency Triage and Treatment System in Sweden. . .). No scale has been found to be superior to the rest and, with the exception of some places where specific scales were originally developed, several triage systems coexist in most countries.

Based on a survey of 25 Spanish hospitals conducted by the working group on triage of the SEUP, the most widely used systems in Spain are the SET-MAT (more than half of hospitals that participated in the survey) and, to a lesser extent, the MTS and the PaedCTAS. The survey raised several concerns that need consideration: the low response rate, the percentage of EDs that used triage systems that were not validated, the lack of universal availability of a triage software application to assist triage when a system was in place and the heterogeneous allocation of human and material resources.⁴

Although there is no uniformity in the scale used in emergency care settings, the minimum requirements document issued by the triage working group of the SEUP identifies a series of features that should be part of any paediatric triage system, as there is evidence suggesting that they contribute to an improved stratification of paediatric patients, of which the most relevant are⁵:

- Five triage levels.
- Designed specifically for the paediatric population.
- Including the paediatric assessment triangle as a key aspect of the triage.
- Applied by staff specifically trained on triage and the use of the specific triage system and with a minimum of 1 year of experience in paediatric emergency care.

- Allocation of a specific space for triage, ideally located so that it is the first point of contact for patients.
- It should include a series of indicators to allow assessment of performance at regular intervals.

If triage works, emergency care services work because professionals know that the patient they are currently serving is the patient that requires their care most urgently and that patients are where they need to be.

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