

The Electronic Triage Chart within the Emergency Severity Index (ESI) – an innovative approach of triaging emergency department patients.

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The Emergency Severity Index (ESI) is a five-level emergency department (ED) triage algorithm that provides clinically relevant stratification of patients into five groups from 1 (most urgent) to 5 (least urgent) on the basis of acuity and resource needs. The Agency for Healthcare Research and Quality (AHRQ) funded initial work on the ESI. In 2019, the Emergency Nurses Association acquired the ESI five-level emergency triage system. Since its acquisition, ENA has focused on improving the triage learning platform to help emergency nurses better understand ESI and better identify patients who should be seen first, while prioritizing the care of patients with less urgent conditions.

An innovative project named "TOPSOR", aiming to standardize the triage procedure in hospital emergency departments throughout the country is accomplished by the Ministry of Health in Poland. The Electronic Triage Chart is an integral tool of the Medical Segregation System based on the Emergency Severity Index (ESI) version 4.0 methodologies and is an electronic tool of the System. The tool has been developed by Sensonics Ltd. which engaged a team of emergency medicine physicians responsible for the substantive development and is officially approved by the methodology licensor the Emergency Nurse Association (ENA). It has been implemented in 2020 in 232 emergency departments throughout Poland with over 1160 nurses and paramedics trained to use both: the tool itself and the ESI triage system. The Electronic Triage Chart has functionality that allows it to collect a medical history, measure the patient's vital signs (including automatic measurement read from the cardiac monitor) and an intelligent triage module. All functionalities are available from the main panel what shortens the time needed for a patient's triage to the necessary minimum. As a part of the Medical Segregation System the Electronic Triage Chart allows to optimize management of emergency departments' queue.

The overcrowding in the emergency services is a global public health problem that has worsened in the last decades. This is a multifactorial problem and possible reasons are deconstruction of primary care network, increase in health services demand, and decrease in number of hospital beds and insufficient physicians and nurses to manage all deliveries. These facts lead to disappointment

of patients because of the long waiting time, and they can compromise the delivery of rapid care to more complex cases, and also can contribute to increase patients' mortality.

In 2004 the Brazilian Ministry of Health's Program for Humanization implemented the User Embracement with Evaluation and Risk Classification (AACR - Acolhimento com Avaliação e Classificação de Risco) in emergency services. This action was created to promote quality in health care, commitment, dignity and respect to all individuals who seek emergency services. In addition, this action states that care should be organized based on patients' level of severity rather than order of arrival. As a consequence, to prioritize a patient who needs urgent care increases the satisfaction of other patients, reduces crowding, organizes care flow and promotes a better use of resources.

The AACR goal is to improve access to health services and promote changes. These changes aim at enhancing relationships between health professionals and patients regarding how care is delivered to them by the use of an attentive listening and consideration of patients based on their risk level, higher integrity among health team members, and provision of care with higher responsibility and safety. To implement AACR in emergency units can reduce risks, prevent deaths, exclude triage done by non-qualified health professionals, prioritize patients care based on clinical criteria, reduce waiting time, identify cases that can compromise late care, promote adequate care by reducing risks and increasing safety, and manage resources to be used by patients.

In our study, nurses' accuracy to predict resources for patients care in emergency service using the adapted ESI were lower than results reported in the literature that used the scale in its original version. A low agreement was observed between number of estimated and used resources.

No association was seen regarding correct prediction of resources and years since graduation, years of work experience in emergency unit, and also years of work experience in the institution where the study was done. To achieve excellence in health care services is a trend to improve patient safety. For this reason, it is important to highlight the need of analysis of triage process and provision of regular refresher training for health professionals involved in such process.

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