

Emergency Department triage

Why and How?

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Today, triage in medicine means sorting of patients according to priorities. It was first used to segregate coffee beans; originally the word came from the French language, from the verb “trier” meaning to sort, sift, pick over.¹ It simply means selection of the most serious patients to be attended and treated first, and then to look after the less urgent or serious patients later.

History. Triage was used in the battlefields to evacuate injured soldiers and treat them according to their injuries and their ability to return to duty. The initial credit of triaging the patients to civilian hospitals was earned by the trauma centers in United States of America (USA) as they applied the triage criteria to transfer injured patients to a trauma center (level: I/II) in 1986.² This was followed by Australia,³ where the Australasian College for Emergency Physicians issued a formal triage policy in 1994 with 5 categories, setting a time frame for each level according to patient condition and needs. In 1999, Canada⁴ developed the Canadian Triage Acuity Scale. The United Kingdom introduced their own triage system in 1996, known as the Manchester triage system.⁵ In 2003, the USA adopted and designed the emergency severity index (ESI).⁶ All are 5 category scales. The triage categorization level procedures depend on the patients’ complaints and the vital signs as well as the expertise of the trier (triage person: nurse/physician/others). It requires education and training.

It specifies the time limit until the patients are attended by the emergency physician, but not the time until discharge from the Emergency Department (ED). It also does not allocate the site of care in the ED in relation to the patient priority or the medical responder.

Why. In the last century, due to patient overcrowding and case mix, triage has been widely used in civilian hospital EDs to classify patients for management priority

to manage life threatening conditions as immediate (first priority), potentially life, or limb threatening patients as emergent (second priority), followed by the less or possibly serious as urgent cases (third priority) and, lastly, the non-urgent patient (fourth priority). The ideal triage system should be simple, and should satisfy the hospital and patients’ needs. It should prove to be sensitive (reliable and valid); namely, priority I/II patients will be admitted to critical care units within the target time frame.

How. Every hospital should build its triage system according to the medical services available, and the needs of the community. The following are the steps:

1. Review ED input, through-put, and out-put, including the average times needed for discharge or admitting the patients (Figure 1).
2. Measure the magnitude of ED load by assessment of the patient load and acuity, to classify the types of patients consuming ED services (Table 1).

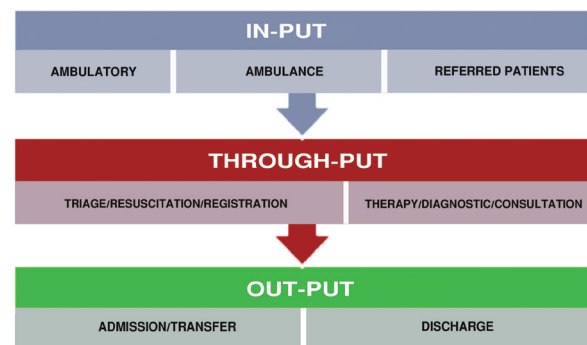


Figure 1 - Review of the Emergency Department (ED). IN-PUT: is the entrance to hospital from different sources, THROUGH-PUT: care time in ED is variable according to the medical condition; delay in decision will result in over crowding, and OUT-PUT: hospital crowding will flood in ED.

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Table 1 - Measure the magnitude of Emergency Department (ED) load by assessment of the patient load and acuity, to classify the types of patients consuming ED services.

Patient acuity	Crowding	Patient's satisfaction
Total visit/month	Average total visit/ hour/nurse/ physician	Absconded patients
Admitted patients (%)	Average waiting time until seen by the physician	Discharge Against Medical Advice
Critical care admission (%)	Average length of stay in ED until admission/discharge or transfer	Patient's complain analysis
Transferred patients (%)	Boarded patients in ED (%) and length of time	
Deaths in ED (%)	Demographic analysis of the patients	
Deaths within one hour of ED admission (%)		
Delivery in ED (%)		

Table 2 - Performance, outcome, and quality of the designed triage system.

Data review	Outcome
Times to triage/to physician/to discharge or admission/transfer	Number of patients according to their triage level/priority
All against priority assignments	Critical care units admissions in relation to priority
	Mortality rate in ED and within one hour from hospital admission
	Patients readmission within 48-hours from ED discharge
	Patient satisfaction assessment

3. Formulate (tailor) the triage classification categories (priorities) system according to the collected data (4 or 5) priorities.

4. Then, design the patient flow through the ED for both ambulatory and ambulance patients. Ideally there should be a different entrance for each type, and a time frame for the medical care process for each priority. It is important to educate and train the ED staff (physicians and nurses) on the triage procedure.

5. Finally, the performance, outcome, and quality of the designed triage system should be monitored (Table 2).

In conclusion, triage in the ED is one of the ED tools that should be available on hand; meaning, known, applicable, and with training for all staff. It is like a fire extinguisher that you feel happy if you do not use it, but you like to see it available and ready for use. The triage system will enable the ED to react to patient overload

and crowds, at a time when the emergency staff need to organize their action and thoughts to best treat all patients simultaneously.

References

1. Ethics of Emergency Department Triage: SAEM Position Statement. Society for Academic Emergency, Ethics Committee, Academic Emergency Medicine 1995; 2: 990-995.
2. Sasser SM, Hunt RC, Faul M, Sugerman D, Pearson WS, Dulski T, et al. Guidelines for field triage of injured patients: recommendations of the national expert panel on field triage. Department of health and human services. *Centers for Disease Control and Prevention, Morbidity and Mortality Weekly Report* 2009; 58: RR-1.
3. Australasian College for Emergency Medicine. Guideline for Implementation of the Australasian Triage Scale in Emergency Departments [Updated 2013 November]. Available from URL: <https://www.acem.org.au/getattachment/d19d5ad3-e1f4-4e4f-bf83-7e09cae27d76/G24-Implementation-of-the-Australasian-Triage-Scale.aspx>
4. Canadian Association of Emergency Physicians. Implementation Guidelines for the Canadian Emergency Department triage and acuity scale. [Updated 1998 December 16]. Available from URL: <http://caep.ca/resources/ctas>
5. Manchester Triage Group. Emergency Triage. 1st ed. London (UK): BMJ Publishing Group; 1997.
6. Gilboy N, Tanabe P, Travers D, Rosenau A. Emergency Severity Index (ESI): A triage tool for emergency department care, Version 4. Implementation Handbook. 2012 ed. Rockville (MD): AHRQ Publication; 2001. p. 1-91.