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Teaching approach for START triage in disaster management

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Abstract

Disaster is defined by the World Health Organization (WHO) as a sudden phenomenon of sufficient magnitude to overwhelm the resources of a hospital, region, or location requiring external support. Therefore, we aim to look into START Triage for both medical students and new physicians face in the recognition, diagnosis and management of primary survey in trauma patients. START Triage newly as a part of primary survey requiring urgent tools in disaster ER management, So Emergency Physicians needs teaching protocol of START Triage. Appropriate approach of START Triage by training protocol to Emergency Physicians. Based to practice gap for preventive death and adverse long-term complications of major disaster. START Triage guidelines are the processes of sorting the patients; it is a dynamic process aim to identify life threatening conditions from cases that not require urgent transfer and intervention. START triage use 4 colors coding approach black for dead, red for immediate, green for walking and yellow for remaining cases.

Keywords: START, Triage, Emergency physicians, skill approach

Introduction

Definitions: A disaster is defined by the World Health Organization (WHO) as a sudden phenomenon of sufficient magnitude to overwhelm the resources of a hospital, region, or location requiring external support [1].

Internal disasters are events that occur within the walls of the hospital itself such as an active shooter, power outage or radiation exposure [2].

External disasters occur at locations separate from the hospital such as transportation incidents or industrial accidents [3].

The original triage concepts focused primarily on situations of mass casualties. Some of the original triage principles, sorting into immediate, urgent and non-urgent with the use of the keeping group in the situation of combat, are still applicable today in situations of mass casualties and combat [4].

Throughout the early 1900s, with the growth of formal care services in the western world, triage originated in the emergency rooms in the United States, the United Kingdom and Europe. Triage at this period typically consisted of a short examination that defined the duration and order under which the patient was then to be treated through the available [5].

For contemporary healthcare programs, three stages of triage have evolved. Next, a pre-hospital triage to direct emergency and pre-hospital medical services. Second, the triage at the location with the first clinician treating the case. Third, triage on arrival at the emergency department or hospital [6].

Triage, by default, is a fluid procedure, because the patient's condition will shift rapidly [7].

Methodology

All data has been collected using either pumped articles, official's websites of ER materials, and textbooks. Regarding textbooks, two main books were help in this paper: European Resuscitation Council Guidelines for Resuscitation 2015 and disaster medicines. As for PubMed, the articles were resent to make sure to conclude the most recent guidelines. Key words: START, Simple triage and rapid treatment, disaster, triage, or START triage. Words were used either as a single word or combinations.

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Incidences of the problem

Over the course of the history documented, natural disasters generally dominated in occurrence and severity over manmade disasters. A few of the early accidents triggered a large amount of deaths, resulting in damage to the basic society structures. Yersinia pestis has triggered the deaths of millions in many epidemics throughout hundreds of years. Y. Pestis deeply affected Europe by killing significant numbers of people and leaving community collapse in its wake. Influenza and Severe Acute Respiratory Syndrome (SARS) have demonstrated in recent years that through the passing of time and significant developments in healthcare, the nation's appear to be impacted by the spread of illness. Add to that, the covid-19 which became pandemic in Italy and overwhelm the resources of health insustustion. Moving to manmade disasters, from vehicles accidents, industrial accidents to terrorist attack. Currently, the prospect of a terrorist incident concerns citizens all around the planet. Both the developed and developing world have experienced some of the most callous and needless stealing of life, for motives not readily understood by decent men. It's rare to read news, listening to a radio, or see Television news coverage without hearing about a terrorist incident in any corner of the countries [2].

Scope of the problem

Disasters can be acute or ongoing. Acute disasters have a general time of onset of the time of an event occurring. Acute disasters have a typical patient flow which produces numerous low acuity patients presenting to the hospital which overwhelms the surge capacity, or the number of patients the facility can care for presenting at a single time. No matter how modern the health system regardless of being developed or developing countries, disasters suddenly, non-expectantly strikes, take over the hospitals resources financially, many beds are taken from other departments, many patients being discharged, all non-emergent surgeries postpone, and all ER team required to be in work-filed most of the days for days, weeks, or even months. In the best circumstances, signal hospital can take this burden where in many cases multiple hospitals has to take care of the situation, and many patients deposited to other hospitals outside the city or the village. Since disasters occur without notice in locations frequently non familiar for these incidents, it is important for all emergency management staff to provide a background on the realistic dimensions of disaster risk reduction and management [8].

WHY this study is necessary

Many catastrophe triage decisions are focused on the implementation of the Simple Triage and Rapid Treatment (START) triage decision-making process. These systems are mainly based on the observation of injuries sustained and the classification system of patients into priority categories based on particular physiological indicators, which include airway, breathing and circulation. It is a program that focuses on the care and transfer of the more advanced cases first, followed by other people with conditions needing fewer immediate intervention. It implies a color-coded method that is used to rapidly triage patients through their relative accident condition.

START triage is used when the number of patients is > 100 , while secondary triage is used when number of patients is less than < 50 .

Why START TRIAGE?

With no one centralized method operating internationally or nationwide, it is important to implement an easy-to-follow and scalable triage and decontamination program with the required medical services, the amount of casualties and the extent of injuries.

-It's quick and it's fluid.

-No list.

-No need to recall a number of shades.

-The location of patients can be dependent on colors from field to emergency room in either urban or austere setting.

By having deep understanding of the START system we will be able to deal in a difficult disasters situation, and change the concept from the greater good for each person to the greatest good for the largest number of individuals.

Disaster cycle

Almost all disasters adopt a cyclical trend known as the catastrophe process (Figure. 1-1), which defines four phases of action: preparedness , response, recovery , and mitigation / prevention. Emergency medical experts have a role to perform in each part of this process [9]. As committed representatives of their society, medical practitioners will be engaged in hospital, local and national prevention and preparedness. After the tragedy hits, their job remains in the intervention and recovery processes. Through engaging in a number of crisis preparedness and intervention fields, including threat risk identification, resource management and catastrophe regulation, emergency medical professionals are being involved actors in the crisis process. A clear knowledge of the community's emergency medicine requirements helps us to relate to the overall preparedness and response project [10].

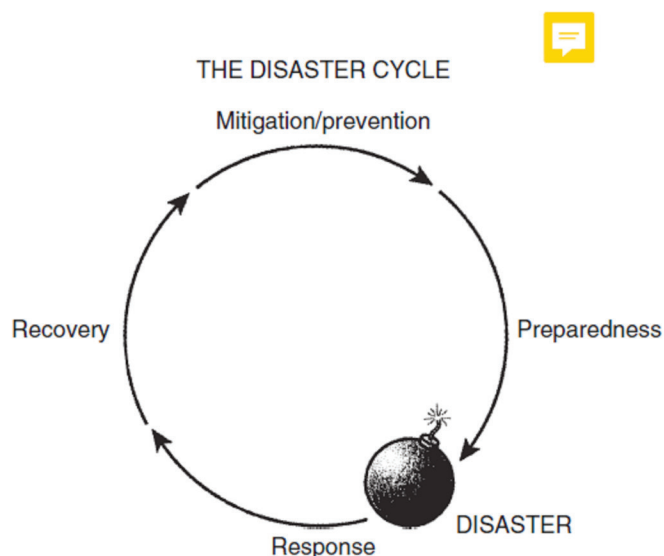
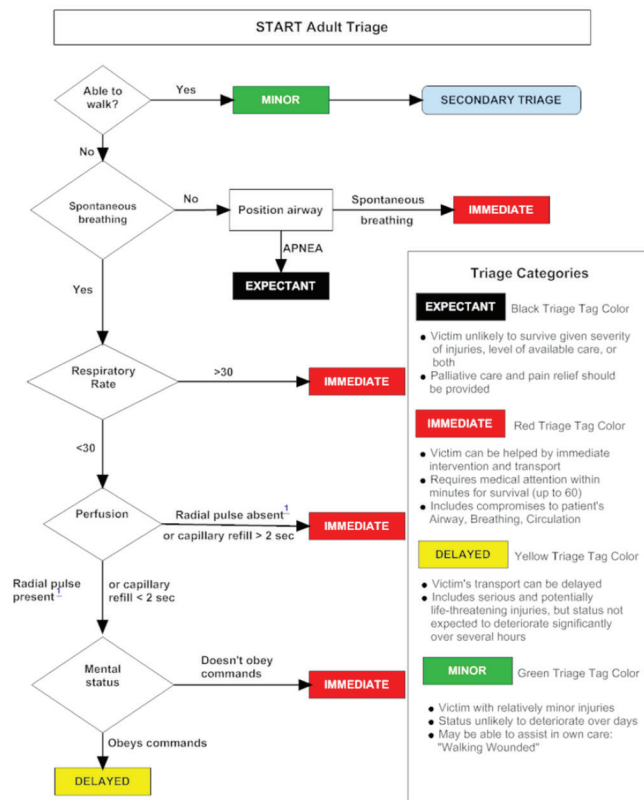


Figure 1. The disaster cycle

Adopted from <http://www.start-triage.com>

REMM
RADIATION EMERGENCY MEDICAL MANAGEMENT
www.REMM.nlm.gov

Assessment Checklist for Performance of START Triage: -			
The examiner will tell the student the finding as he/she is sorting them	Good One mark	Fair Half mark	Failed Zero mark
General			
Make sure about environment safety.			
Start from where he arrived.			
Move quickly from one patient to other			
Yell to those who can walk to move to "this" area, label them as green			
RPM			
Begin with respiration examination			
Use jaw thrust to open air way			
Label black who still not breath			
Label red when >30 or less 9			
Label red if absent radial pulse or capillary >2s			
Processed to mental if capillary < 2 sec			
Label red who don't follow simple commands			
Label yellow who follow simple commands			

START triage technical steps

Upon arrival make sure 1st the scene is safe, and therefore any patient gets 15 seconds, the aspects of the evaluation: ambulation, airway, circulatory and cognition.

Every patient will be branded after they have been tested. The tag indicates the current state of the patient and tells anyone delivering care for one of the four potential medical choices. Start when the triage phase begins with the patient nearest to you.

All who is able to walk is guided to clear the scene, and the respiratory condition of non-walking patients is evaluated. If the victim does not breathe right away, open the airway using simple techniques (head tilt and chin lift, or jaw thrust). Look, listen, and feel for no more than 10s. An individual who does not continue to breathe is regarded as dead. When the non-responsive patient breathes the rate should be evaluated. If more than 30 or less than 9 breaths per min, then turn him into a recovery position and label him as red (highest priority) for treatment [11]. Switch to the next case. When the value is less than 30 and more than 9, the perfusion shall be assessed; if the radial pulse becomes missing or the capillary pulse fills longer than 2 seconds then labelled as immediate, shift the next patient, if the radial pulse was present and the capillary pulse refill is less than 2 seconds, determines the mental state, If the individual cannot execute basic orders (or) has an altered mental condition (or) is unaware, then identify them as IMMEDIATE (RED) Transfer to the next case. When the individual is willing to execute basic orders, identify them as DELAYED (YELLOW).

Triages challenges

A/ triages and researches

The most commonly employed mass injury triage systems used are not dependent on proof.

There is still a lack of research into existing MCI triage algorithms, their ease of use, validity and reliability.

B/ diversity of triages

Multiple channels of access to health care have culminated in the development of various schemes of mobile call triage, emergency communication, and direct admission of patients to hospital or primary care facilities. This complexity in hospital triage programs causes challenges in creating comprehensive treatment facilities.

C / Triages and primary goal

Initial triage programs were predominantly trauma-based, emerging from the military environment. The goal with triage programs is to build processes that can handle the entire range of health conditions, from serious disease and death to mild illness and mild accident, with recommendations from very young to very elderly. Frameworks which always yield a response to every call, simply trying to sort out intensive or basic first aid, are no longer acceptable [12].

Conclusion

Any sudden phenomenon that overwhelm the health resources is known as disaster. Disaster can be due to human made or natural events. Triage is the process of sorting the patients, it is a dynamic process aim to identify life threatening conditions from cases that not require urgent transfer and intervention. START triage use 4 colors coding approach black for dead, red for immediate, green for walking and yellow for remaining cases. Nowadays, the main limitation of triage is being not evidence based which further studies for evaluation and to seek best medical care for disaster cases.

Conflict of interest

The authors declare that they have no competing interest

Financial Disclosure

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