Emergency Triage: Extend of our knowledge

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Triage is derived from the French word TIER, "to sort/separate or select". A process of determining the severity of patients and prioritizing them according to their medical urgency, initially used to sort agricultural products, during disaster, in the battle field and even on telephonic advice, however presently it is exclusively used in specific health care context[1] like hospital EDs (emergency department), and in ambulatory medical services.

Dominique Jean Larrey, was the first to own most of the triage ideas during the Napoleonic Wars. Triage was then formalized during World War I to treat the injured solders in battlefields. Historically, there has been a broad range of attempts to triage patients, and differing approaches and patient tagging systems were used in different countries.

Since the last century, triage is modified with scientific and modern approaches and more logically dependent on physiological needs and assessment findings of patients. Assess, Categorization/transport are the bases of all triage.[2] Different types of triage are functional at present i.e. "Simple triage", used at the scene of a mass-casualty, to sort patients who need critical attention and continuous integrated triage, it has 3 subtypes. Other types are: "Group (Global) Triage (e.g.; M.A.S.S. triage)", when Medical disaster overwhelms the ability of a given area or community to meet a demand for health care. "Individual Triage. e.g. S.T.A.R.T. (Simple Triage and Rapid Treatment)", process of first responders to effectively and efficiently evaluate all of the victims during a mass casualty incident. Developed in 1983 by Newport Beach Fire Department, California.and Hospital Triage (e.g. E.S.I. or Emergency Severity Index v 4.0)[3] this is based on visual assessment, person perception and predicted resources used. Advanced Triage", resource dependent, triage staff may decide to divert the present resources to a more stable patient, having more chance of survival with little or existing resources. This has significant ethical implications, thus confined to serious disaster and battle field.[3] "Reverse triage", Modern hospital triage based on appropriate use of ED space and resources to ensure that all patients presenting to the ED shall have access to care according to their respective needs.

ESI (Emergency Severity Index) v 4.0[4] is a five-level emergency department (ED) triage system that provides

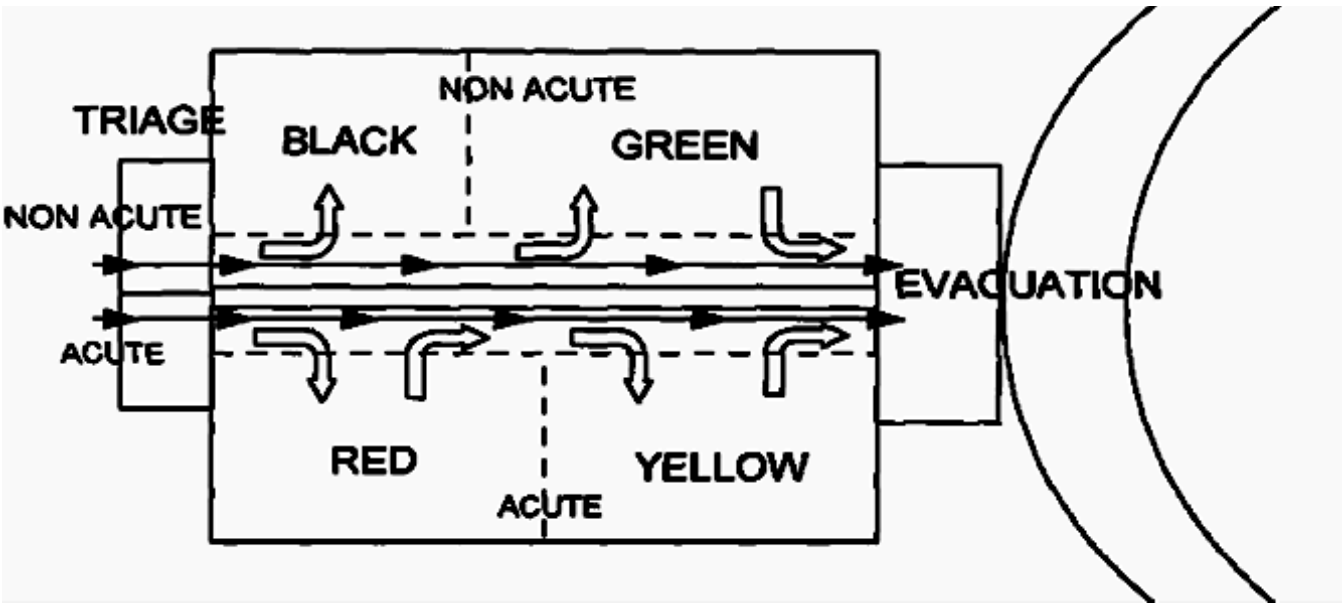

Figure-1: Establishing a mass casualty management system 1995 PAS, WHO, 2001.

clinically relevant stratification of patients into five groups from 1 (most urgent) to 5 (least urgent) on the basis of acuity and resource needs since 1990's by Richard Wuerz and colleagues. Designed and evident to be very effective in stratifying and sorting patients according to their clinical needs and recourses available to improve critical care and decrease the risk of patient deteriorating in the waiting area.[5] Triage assignment based on visual assessment, triage staff perception, his experience and objective measures (vitals/pain scale). Goal is to provide every patient the right resources, at the right place and the right amount of time.

Triage area location must be immediately accessible and clearly sign-posted. Triage structure should be designed for quick patient examination, while keeping the privacy intact. Behavioral and psychiatric patients should be prioritized as per policy. On the other hand strategies to protect staff is utmost important. Basic structure of triage for busy ED must have at least 04 areas including a separate paediatric bay for acute and non acute patients.

Level 1 Resuscitation (Priority {P} 1): Immediate attention with maximal utilization of resources to prevent loss of life, limb, or vision.

Level 2 Emergent (Priority {P} 2): High risk for rapid deterioration, loss of life, limb, or eyesight if treatment or interventions are delayed.

Level 3 Urgent (Priority {P} 3): Symptoms and risk factors for serious disease do not indicate a likelihood of rapid deterioration in the near future. Abnormal vitals signs for these grey area patients may upgrade or downgrade the priority.

Level 4 Less Urgent (Priority {P} 4): Chronic complaints, medical maintenance, or medical conditions posing no threat to loss of life, limb, or eyesight.

Level 5 Non Urgent (Priority {P} 5): Patients in this category are currently stable and require no resources such as labs or x-ray.

The goal of triage is to rapidly identify serious and with life threatening conditions, and to adjust them in most appropriate treatment area and to reduce ED congestion/rush in ED, along with ongoing patient's assessment. Provision of adequate and timely information about the management and administrative plan to the patients is also the responsibility of triage staff.[6]

Paediatric triage, needs more vigilance and experience, children not only require quick assessment, but the assessment of severity of disease might be missed/delayed and they may deteriorate rapidly. They manifest non specific symptoms, and are uncooperative during examination, and may be presumed to have age specific diseases.[4] In this context triage staff should carry out a 3-step assessment before categorizing the severity of illness i.e. initial impression of illness severity, evaluation of the presenting complaint, assessment of behaviour and age-related physiological measurements.[5] Timely and adequately involving paediatric physician in difficult and grey cases can reduce the morbidity and mortality. There are many different 5 level triage acuity based on the disease and clinical acuity, like Emergency triage and treatment guidelines, Australian triage scale (ATS), Canadian Triage and acuity scale (CTAS), Manchester triage level, Cape Triage group, other than ESI.

The ESI triage depends on visual assessment; person perception and experience, hence the need of equipments are reduced. This makes ESI a more acceptable triage system for low income countries with higher burden of patients coming to EDs with limited available resources. Still triage staff needs some facilities like hand-washing, gloves, adequate communication devices (telephone and/or intercom etc), record register/computer. Vital monitoring equipments like HR, RR, BP, Temp, O_2 saturation is required in ESI triage acuity. ECG machine, medication bin (temperature and pain relieving medications) and examination area with adequate provision of privacy are few of the necessities of adequate triage.

Triage can be done by a physician or an experienced nurse supported by a nursing attendant. Only the experienced nurse can anticipate the probable recourse needed for an individual patient and importance of age specific vital signs. Continuous training and protocols will keep triage staff familiar with the triage assessment. This pedigree must be modified for rush hours and in disaster with at least 02 RN or a physician with a RN. Visual triage is preferred during disasters. The triage nurse should have rapid access to or be in view of the registration and waiting area at all times. He/she should greet patients and families in a warm and empathetic manner. Brief visual assessments and documenting relevant vital signs and assigning triage level, reassessment of patients in waiting, and notifying patients and families of delays, and notify any change in their condition to the patient/attendant. Shifting the patients to treatment areas where necessary along with the triage slips and reports to the treatment nurse or emergency physician is also important.

Reassessment after initial triage should be done according to the triage policy, ESI recommendation is more or less same for reassessment, i.e. level II should be reassessed within 15 minute, while Level III in 60 minutes, Level IV in 120 minutes and Level V in 180 minutes. However physician's discretion should be superceded as per his experience and clinical perception.

In case of Disaster, natural or man made, when severity and magnitude of resources go beyond the scope of what normally can be handled through routine procedures

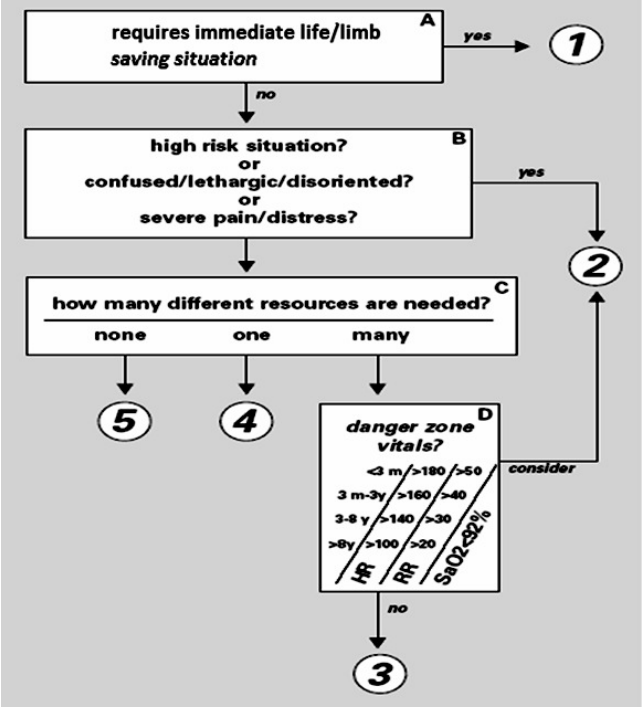

Figure-2: A 5 level triage categorization ESI v4.[4]

and resources. Main objective is to provide immediate care to the needy. In case when ED is in full potential capacity or during Disasters, Priority 3 (P3), Priority 4 (P4) and Priority 5 (P5) patients can be diverted to other hospitals or clinics. All Priority 1 (P1) and Priority 2 (P2) patients should be dealt with preference. Ambulatory or Emergency Medical Services number like 1122 as functional in some areas of Pakistan play an important role in sorting and diverting the patients/ambulances directly from the field to the immediate accessible and available vicinity with adequately vacant resources. Role and preparation of ED triage and staff during disaster should be planned before. ED reception/Triage desk, other than triaging should facilitate to evacuate the emergency area, prepare triage and trauma team, start visual triage and color assignment, Minor injuries and ambulatory patients may be diverted to the area previously assigned for managing such cases or referred to some other premise. In such cases this would be better option to identify patients severity and outcome with color tags like:[2]

Red: Immediate care / life-threatening

Yellow: Delayed urgent care / can delay up to one hour (Serious)

Green: Minor delayed care/can delay up to three hours (Minor injuries)

Black: Deceased victim is dead or mortally wounded / no care required.

There are few common problems and hindrances like: Overcrowding, which is the most serious and commonest. Availability of beds, limited access to primary care or specialist physicians, increased complexity of patients are few other common problems at triage other than lack of alternative health facilities. Overcrowding creates a workload and dissatisfaction amongst triage staffs and patient. Left without being seen, aggression, inadequate patient care, prolonged delays in the treatments and diversions all adversely affect the patient's satisfaction and staff contentment. Staff-related outcomes, manifest as decreased productivity, poor morale, and job dissatisfaction. Morbidity and mortality cases are also attributed to delays in diagnosis and treatment. Shortages of trained and experienced staff (nurse/doctors) do contribute while most of remaining prefers to work part time. Dissatisfied patients may comment on demerits of triage system and may give personal comments, but usually over look the significance of the system for the society in general who visit the ED in need.

Patients left without being seen (LWBS),[7] leave prior to being seen by a physician for assessment and treatment, because of "tired of waiting,[8] childcare or other commitments, transports, dissatisfaction with nursing and physicians, improvement of symptoms, safety concerns in the waiting room, difficulties with ED staff and a perception that the department is very busy are few other reasons of LWBS.

Triage staff should be careful of under triage, this will end up with legitimate action against the staff and hospital administration but on the other hand this may cause serious morbidity and mortality. Over triage is the process of overestimating the level, acceptable rates of up to 50% in an effort to avoid under triage, might be fruitful.[5]

Aggression at triage is common all around the world. Aggressive people are either patients or the relatives or friends.[9] Aggression may provoke or magnify by some factors like delays, pain, frustration of not been seen, fear, stress, drugs/alcohol or mental instability. Feeling of perceived prejudice may also aggravate aggression and may lead to a risk of harm for the triage nurse and other reception staff.

In order to minimize aggression, anticipation and immediate action and involvement of management and seniors all may help to reduce anxiety. At times security may be required. Hospitals should have assault/threat (verbal/physical) policy, which may be implemented firmly as needed. There are some strategies to calm down aggressive patients like verbal, physical and pharmacological in case of psychiatric illness.

Ethical implications are the serious concern. Health care plan for different pandemic might raise these issues in

future regarding the triage of patients and the rationale of care.

Triage work load can be curtailed by reducing the waiting time by: One problem per person strategy, triage liaison physician option, Rapid assessment team (RAT),[10] development or by multidisciplinary assessment at triage. Redesigning ED patient flows: Application of Lean thinking to health care are possible other options.

Debriefing sessions for staff is of utmost important afer a disaster, patients death and humiliation/assault in ED. Staff working at triage needs to be shuffled and rotated from time to time to get some space and time out for them to revive and energize themselves from a robotic, nauseating and non rewarding job. For mental and psychological grooming, debriefing sessions are necessary to eliminate the thoughts negativism, while physical debriefing needs additional vacations and day out.

Triage Staff training is a continuous training exercise. Accuracy of correct triage can only be maintained by repeated training, and its ongoing assessment needs.

Recommendations:

The health burden on emergency services all over the world is increasing, patient expectations are at a rise, and ED has to cope with the problems of increasing demand, financial pressures, paucity of experienced staff, and to apply more complex medical management in order prevent mortality. The future challenges are to establish effective triage systems, for early detection of those who require immediate, focused and best emergency response with limited resources.

Conclusion

Our aim at triage is to maintain a safe work environment, establish and maintain a positive client-patient focus relationship and to minimize the risk of escalation of aggression through practical knowledge gained through experiences and training with corrects identification of signs or symptoms and acknowledging the key information from the presenting complaint and relevant history with the use of approved guidelines and triage protocols.

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