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Editorials

Emergency Physicians and Emergency Medicine: An imminence need in India

With a population of more than 1 billion, India is the second most populous country in the world. Although infectious diseases are frequent causes of morbidity and mortality, the prevalence of cardiovascular diseases, cancer and diabetes is increasing. Also, increasing urbanization has lead to an increase in road traffic accidents and traumatic injuries. More than 40% of trauma victims are between 16 and 30 years of age. The reported annual poisoning-related deaths are more than 64000 (Accident and suicidal deaths in India, National Crime Record Bureau, 1998); this may be a gross underestimation. All these contribute to a large number and wide variety of emergencies that require immediate care by medical personnel specially trained for the purpose.

Globally, there have been enormous improvements in the care of acutely ill and injured patients. The creation of departments of emergency medicine (EM)/accident and emergency medicine and the availability of trained emergency physicians (EPs) has contributed to this in no small measure. EM is now a well-recognized specialty that has proven its utility not only in providing appropriate care to such patients but also by enhancing the understanding of the needs of such patients through focused research. It is an important component of the undergraduate training curriculum in the West. Postgraduate training (residency programmes) in EM has been in place for many years and various subspecialty fellowships (disaster management, paediatric EM and toxicology) have been developed under the umbrella of EM.

Emergency medicine has two major components: pre-hospital and hospital care. The easy access to pre-hospital care is provided through a telephone call to a number which is the same all over a country. Emergency medical technicians (EMTs) trained in basic and advanced life support respond to these calls and provide pre-hospital care (including transporting the victim to a hospital and informing the hospital about the patient). In the hospital, emergency care is provided in emergency departments (EDs) by EPs trained to deal with all kinds of emergencies.

Pre-hospital care of acutely ill patients is essential to reduce the morbidity and mortality of acutely ill patients. This is evident from studies which have shown that in the pre-hospital phase paramedics were able to revive 53% of patients in cardiac arrest using advanced life support measures; 40% of patients in cardiac arrest survived following the use of automated external defibrillators; and that nearly 39% (estimates) of accidental deaths were potentially preventable if the victims received pre-hospital care.

In EDs, care by trained EPs is critical to the outcome of such patients. Triage—sorting of patients and allocation of treatment according to priorities which are defined to maximize the number of survivors—is an important concept in the initial assessment of acutely ill patients. The goal is to place a patient at the right level of care at the right time. A study from the UK showed that junior doctors with no certification in EM assessed the priorities incorrectly in patients with life-threatening injuries. Despite a presumed awareness of the 'ABC approach', 83% of doctors failed to apply this principle to patients with the most severe injuries.

A physician trained in various life support measures such as advanced cardiac life support (ACLS), advanced trauma life support (ATLS) and paediatric advanced life support (PALS) increases the level of care provided to an acutely ill patient.
Following 3 months training in accident and emergency work, less than half (41%) of the junior doctors felt that they could take on the initial responsibility for the management of a patient with multiple injuries. It has also been shown that the mortality rate for injured patients in the pre-ATLS era was higher than that after the implementation of ATLS. This was true for all ranges of injury severity score (ISS) except when the score was >41, when all patients in the pre- and post-ATLS periods died. In all the other ISS categories, there was a decrease in the mortality rate ranging from 20% to 30%. The overall odds of dying in the pre-ATLS era were 4.1 times greater than in the post-ATLS group. This clearly demonstrates the positive impact of a trained EP on the outcome in trauma patients.

Acute myocardial infarction is a typical non-traumatic emergency. Several trials have shown an inverse relation between time-to-treatment and the degree of reduction in the risk of adverse clinical outcomes in such patients. Despite the fact that treatment delay generally accounts for a small proportion of the total delay, this factor may be more amenable to shortening through measures such as effective pre-hospital care, availability of thrombolytic agents in EDs and the response of the ED team to the patient at the time of presentation including rapid triage and early administration of thrombolytic therapy. For each additional hour of delay in administering thrombolytic therapy, the mortality rate increases by 1.6 per 1000 patients.

Observations units have become a part of many EDs all over the world. EPs and nurses in EDs assume the primary responsibility for managing patients in such units which provide extended services to acutely ill patients. These units have been shown to be safe and effective for patients with a wide variety of conditions such as acute asthma, poisoning, abdominal pain, gastroenteritis, minor trauma, etc.

Emergency medicine as a specialty is almost non-existent in India. Even the existing emergency services are poorly organized and underdeveloped. Pre-hospital care is almost absent. In some areas, ambulances owned by private hospitals operate on a fee-for-service basis. These are usually nothing more than transport vehicles which at best have an oxygen cylinder. The ambulance staff are generally not trained in pre-hospital care. There is no common countrywide telephone number to access an ambulance or emergency health care services. The most common mode of transport of a patient to an emergency room (ER) is a personal or commercial vehicle and only 2% patients are transported to an ER in some kind of an ambulance.

Once in the ER, the physicians managing such patients have usually had little or no training. Miller et al. in this issue of the Journal have provided data from an urban area in India which shows the inadequacy of training of personnel manning ERs and the lack of appropriate equipment in them. In several hospitals, physicians manning ERs function as ‘postmen’ who ‘deliver’ victims to the respective specialties because they lack the resources to manage the wide variety of clinical problems encountered in the ED. In some hospitals, residents from multiple specialties manage ERs. Here again the level of care provided is far from adequate. Even these specialists are generally not aware of ACLS, PALS and ATLS. It is not uncommon to find these ‘trained’ physicians administering intracardiac epinephrine and intravenous sodium bicarbonate and calcium to patients with cardiac arrest. Further, the cost of providing emergency care rises sharply if residents from all the specialties are present round-the-clock in the ER. Triage is almost never practised in any hospital. As a result, impressive but non-life-threatening extremity trauma takes precedence over bacterial meningitis and myocardial infarction. Unfortunately, these problems are compounded whenever a disaster occurs, as has happened in the past few years in both rural and urban areas of India. Most hospitals have no disaster plans. Even those that have some plan do not conduct regular drills to check readiness. There is also no attempt to gain any insight into these problems encountered in ERs through any form of research, which is evident from the lack of published work in this field from India. In such a scenario, it is well nigh impossible to raise the standard of emergency care without a nucleus of dedicated EPs trained to anchor emergency systems in India.

How many general physicians can triage and manage several patients simultaneously? How many can distinguish poisoning from head injury? How many can intubate an
acutely sick and injured patient? How many can deal with the acute grief response of a family in case of death? These are only a few of the skills which EPs need to possess. Therefore, the need of the hour is to focus our attention to address the existing lacunae in our emergency health care systems—a need that can be fulfilled by establishing departments of EM with trained EPs and thereby having residency training programmes in medical colleges all over the country. The responsibility for the initial management of acutely ill and injured patients would be provided by EPs who would man ERs and who would be adequately trained and well versed in assessment and resuscitation procedures including ACLS, APLS and ATLS. Such EDs would also need to train nurses and paramedical staff to provide efficient pre-hospital and hospital care to patients. An access system to emergency health care response teams along the lines existing in other countries (e.g. a single countrywide telephone number) also needs to be developed. Adequate and efficient pre-hospital care is even more relevant in India where transport times to hospital are likely to be much longer than in other countries. The availability of observation units attached to EDs will help reduce the number of unnecessary admissions to the already overcrowded inpatient wards. Thus, EDs would help in providing comprehensive and cost-effective care and prevent the loss of lives of a large number of people who are in their most productive years.

Globally, the novelty of EM as a specialty has worn off—it is now an established necessity. Singapore, China, South Korea, Nicaragua and many other countries have already created EDs with perceptible changes in the level of emergency health care. It is high time that we in India act on this emergent need at the national level.

REFERENCES