The Organisation of Accident and Emergency Services in a Developing Country

by Prof. J. Francis Silva
F.R.C.S., F.R.A.C.S., F.A.C.S.
Department of Orthopaedic Surgery,
University of Malaya.

THE PROBLEM OF providing adequate care for the injured is well documented and goes back into antiquity. Generally speaking, evil sometimes, if not always, brings good and so it is with war. Every major human conflict has, on its cessation, seen a progress in the science and art of surgery. Accident surgery evolved with the management of wounds sustained in conflict. The earliest documentation regarding the care of wounds is in the Edward Smith Papyrus written about 1700 B.C.1

Man's desire for speed and even more speed in transport, and the growing mechanisation of industry to meet the increasing demands of economy, have left in their trail an ever increasing number of accidents. It has to be appreciated that these injuries affect the productive members of a given community and today, the risks of accidents do, by far outweigh the perils of disease. Accidents are the main cause of death in the 1-35 age group in most countries. In Great Britain, industrial accidents caused more loss of man hours and productivity than labour disputes throughout the country, while injuries sustained in travel cost the community £172 million in 1955 and this cost is still rising. In the U.S.A. there are 50 million accidents with 120,000 deaths annually. These figures are ever increasing and the economic loss to the country when the healthy wage earner is incapacitated, needless to say, is a tragic circumstance both for his family and the country. The necessity of adequately organised accident and emergency services is therefore being felt throughout most of the countries of Europe, the United Kingdom, and the United States. The need, therefore, to have an adequate and efficient service in a developing country is even much greater. Even though the economy may be strong enough in a country it could ill afford the loss of man hours, or the distribution of its finances in the form of compensation. The injured must be treated promptly and adequately with final rehabilitation back to work, without unnecessary loss of time in the process.

Organisation

Accident and Emergency services in a country should be on a regional basis. It should be planned on a three-tier pattern with the accident centre as the main hub of the region, base hospitals as minor centres and district hospitals as the peripheral units. All peripheral units and base hospitals should be in communication with the main centre.

The Central Accident Unit

It is accepted that the main accident centre should be in a General Hospital, where all specialist services are available for consultation. In such an organisation, with the co-operation of the consultant staff, the patient with multiple injuries will get ideal treatment. This will be a much better service than one that could be arranged in an accident hospital. There should be about thirty beds per 100,000 of population.

The Accident and Emergency Department should be a self-contained service with separate entrances for ambulant and ambulance patients.

The importance of an adequate organisation for such a service need hardly be stressed. It is felt that injuries to the locomotor system form the

main turbulent stream of traffic that such a centre is forced to face, and is estimated at 75 to 80 percent. Hence the ideal person considered suitable to organise the service should be a senior orthopaedic surgeon. The remaining injuries and emergencies not attributable to accidents form a mere insignificant trickle. To quote the Central Health Services Council Report on accident and emergency service — "We think that is necessary to appoint one consultant to be in administrative charge of an accident department. It is clear from figures which have been put before us that by far the greatest part of accident work falls within the province of the orthopaedic surgeon. It is therefore normally the best arrangement for a senior orthopaedic surgeon to have the day to day control of the accident and emergency department." His duties would include arranging the daily rosters of consultants, registrars and other medical staff, maintaining liaison and goodwill between the various departments which would have to partake in the service, namely, general surgery, neuro-surgery, plastic surgery, dental and last but not least, psychiatry.

Members of these various units will have to be available for consultation as need be, when the occasion arises.

The average patient is generally able to choose his or her own doctor, but unfortunately, the patient involved in the emergency is unable to make this choice, and is rushed to an accident emergency centre where he expects the best treatment.

Patients should be brought into the reception area where trained medical officers are available. These patients would be suffering from injuries to the locomotor system, while some no doubt will be more serious with multiple injuries. The Medical Officer on duty should, after examination, refer the patients to the appropriate speciality for their management. Critically ill patients such as those with multiple injuries may need admission to the intensive care unit directly.

Whenever a psychiatric problem is brought into reception, the psychiatrist on duty will have to be available for consultation. Attempted suicides should have this specialised care and help before being discharged from the hospital to prevent such drastic attempts on their lives again.

A committee on management, with the officer-in-charge of service as chairman, should be formed. This committee should have representatives from all the fields involved in management of accident and emergency patients, namely, general surgery, neuro-surgery, plastic surgery, dental, anaesthesia, gynaecology, obstetrics, psychiatric and medical specialities. Inter-departmental goodwill and understanding would be the "Open Sesame" to a smooth and efficient working of the service.

Observation Ward: This is a very useful and necessary facility in the service. Here patients may be kept under observation where there is doubt as to the need for admission. Thus overcrowding of the main wards of the accident unit can be avoided.

Burns Unit: This facility is very necessary in every accident unit and should be managed by a plastic surgeon.

Provision for Geriatric Cases: Some provision will have to be made for these patients as they are of the long stay category by virtue of their age and general condition. If these patients are to be kept in the acute hospitals very soon they would fill up all the available beds. Under these circumstances, a convalescent extension for these patients is an absolute necessity.

Paraplegic Unit: Rehabilitation of paraplegics and tetraplegics is very necessary. Such programmes are best organised and started in a separate centre. Patients could be transferred to such a centre on completion of the management of the acute phase.

Rehabilitation: From the time of admission to the service, treatment should be planned for these patients with a view to getting them back at employment with the minimum loss of time, hence the importance of medical rehabilitation in their management. If they are unable to go back to employment immediately on discharge, they should have some industrial rehabilitation to fit them into their former occupation. Where this is not possible, facilities will have to be organised for assessment of these patients and their vocational rehabilitation in a new trade in keeping with their aptitudes, intelligence, and physical disability.

Disaster Organisation: Finally, the centre should be geared for the occurance of any form of national disaster. This organisation should be put to the test at regular intervals by practices so that should the unfortunate incident occur, the organisation can be put into operation without any hitch in the scheme of things. Added medical staff from the various departments of the hospital would have to be on the roster for such an eventuality. Medical Officers should be given instructions as to what should be done in such an event. There should be two teams, one to work at the scene of the disaster, and the other at the accident centre itself. The nurses in the hospital and other ancillary staff should

also be on a roster to give added help when needed in these circumstances. Additional theatre staff and theatres will have to be ear-marked for such emergency work. First aid kits should be available, prepared and sorted to be taken immediately to the scene of tragedy. This should include the availability of sterilised dressing packs at the Central Sterile Supply Unit. Sets of splints would also have to be put by to be taken when required.

A Public Relations Officer should be available to liaise with the medical officers, nurses, the relatives of the patients, police and the press. Thus the technical staff would be prevented from wasting time worrying about clothes and valuables of the injured as well as answering the numerous questions of anxious relatives, and that of the press. At least two unlisted telephones, should be available in the accident and emergency centre. These numbers should be known only to the Director of the hospital, the Head of the accident emergency, the police, and chief of the ambulance services.

The Accident Units

The accident centres in base hospitals should have facilities for resuscitation of the severely injured prior to transfer to the main centre, and facilities for treatment of the less complicated cases. Patients needing management in specialised units can be transferred to the main centre after initial care. The bed strength at these centres should also be about twenty-five to thrity per 100,000 of population.

The Peripheral Accident Service

The main purpose here is to provide treatment for minor injuries. It should also meet the demand of the so called "casual patients". It is common knowledge that for every major injury, there are at least a hundred minor injuries. Here morbidity is the important factor.

General practitioners in the periphery and medical officers in cottage hospitals can be organised into this peripheral service, which can be sited at suitable points, either in general practitioner surgeries or the cottage hospitals.

Planning For The Future

Development should include a carefully planned programme to cope with not only the management of accidents but also their prevention. Here, education of the undergraduate is an important responsibility of the service for it is he who will be the general practitioner of tomorrow or the post-graduate of the future. The basic foundations in the knowledge handling of the injured, whether it be an accident or other emergency, must be ingrained in the young and developing mind at this stage. To attain this ideal he should have an adequate period in the service. In most centres in Great Britain, it is felt that the time allotted for under-graduates in accident and emergency is far too little, especially in the context of the modern trends of increasing accidents. Steps are being taken in most centres to increase the time to a period of three months. This under-graduate training is vitally important, for in a perfect world of the future made sterile by an ideal antibiotic, congenital deformities eliminated by careful inbreeding, the doctors of the space age will be chiefly orthopaedic surgeons because there is as yet no way to prevent the occurance of accidents.

The post-graduate, on the other hand, should have a period of at least one year in the accident and emergency department where he will be exposed to an extensive programme in management of these patients. A training period in accident surgery is now an essential requirement for eligibility to sit for the Final Fellowship of any of the Royal Colleges of Surgeons.

Education and training of the general practitioner should be a part of this service. He should be well indoctrinated into the fundamentals of accident surgery and could then form an important member of the regional service. Such training should include methods of resuscitation and the correct handling of the severely injured.

Enhancing the knowledge of para-medical personnel like nurses, assistant nurses, physiotherapists, occupational therapists, in coping with the problems that arise in patients of this category would be an added duty of the service. Eventually it is assumed that there should be courses in orthopaedic nursing with a view to manning the orthopaedic and accident services throughout the country with suitably trained nurses. There should also be schools of physiotherapy and occupational therapy, to provide staff for the rehabilitation of the injured.

Education of the public is just as important as training of medical and para medical staff. Such education should consist of enhancing the knowledge of safety precautions and first aid measures. The need for availing oneself of immediate attention to reduce morbidity and minimise physical disability is another priority to be appreciated.

Adequate personal care in homes from the dangers and hazards of open fires and home appliances has to be taught. In industry, the education of staff in the need for using safety precautions is a must. Every major industry should have ade-

quately manned and equipped first aid stations where the injured could receive much needed initial treatment.

Enlightenment of the public on road safety measures and the appreciation of the fact that roads are for the entire general public will help to reduce carelessness, selfishness and self-assertiveness — all common causes of accidents.

Research

Finally, research should form a very integral part of the services of an Accident Centre. It is the only way to reduce mortality and morbidity figures. There are many facets in the management of trauma that need further investigation and study such as the problem involved in the resuscitation of patients with multiple injuries. The pattern of trauma has changed and is continuing to change with high velocity vehicles. Hence our approach must keep pace.

Conclusion

A scheme has been outlined for the organisation and maintenance of an accident and emergency service on a regional basis. The necessity of such centres has been adequately stressed both from the point of view of service to the community, and also for the need of adequate facilities for training both under-graduates and post-graduates associated with medical schools, not to speak of para-medical personnel that would also need such training and instruction. Plan for the organisation and administration of the service has been laid out on the basis of what is accepted in most countries in the west.

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