

บทความพิเศษ

SPECIAL ARTICLE

Guidelines for increasing efficiency
in emergency medical services
to the casualties in
Bangkok Metropolitan areas

Chetana Phalakornkul, M.D., M.S., F.A.C.S.
Senior Expert in Medicine,
Office of Permanent Secretary,
Ministry of Public Health.

Accidents are undoubtedly the major health problems in Thailand since they cause loss of lives and properties as well as physical disabilities. All these losses have effects on the injured persons' physical and mental state, in addition to the losses to their families, the society and the nation as a whole. All these effects give rise to the responsibility in looking after the injured who are unable to care for themselves.

Since 1967 accidents have the leading cause of death in Thailand

and have a tendency to increase rapidly. In 1967, 26 out of 100,000 Thais were killed in accidents. The rate went up to 47 in 1988. An estimated one and a half million persons injured in accidents were treated in hospitals all over the country. Approximately 10 percent of these patients were seriously injured and resulted in 18,533 deaths. The report of regional hospital bed utilization showed that the uses of beds to admit patients suffering from accidents accounted for about 30 per-

cent of the total beds used. This is really quite a burden on the health, medical and nursing personnel, as well as a drain on the budget of the country that must be spent in the treatment of the patients injured in accidents^(1,2).

More alarming still, the majority of the victims of accidents are mainly young people whose ages range from 15 - 44 years. People in this age group could have contributed productively to the development of the country. A study conducted by the World Bank estimated that Thailand's economy loss due to accidents accounted for about 40 million baht each year⁽³⁾.

Though it fully realizes the danger and the effects of these accidents, the government fails to provide adequate preventive measures to deal with these problems in spite of the fact that no less than 9 - 10 ministries deal with rendering services to those people receiving injuries from accidents. There are always problems in co-

ordinating the activities and implementing them successfully to meet the objectives.

As for the provision of medical services to those suffering from accidents in the Bangkok Metropolitan area. It is comparable to those of other civilized countries. The main problem is the transfer of the injured from the scene of the accident to the hospital. The injured have to waste their valuable time waiting for transportation to hospital, apart from having to be confronted with incompetent people at the scene of the accident such as the on-lookers. Those that help the injured by carrying him or her to the hospital often do not administer first aid treatment. This further aggravates the condition of the patient and may result in death or disability. It is most unfortunate that such incidents occur in Bangkok in spite of the well - equipped modern medical and emergency facilities available. The existing facilities such as the

emergency telephone system, radio in disarray, confusion and waste of communication, ambulance service, time. This lack of co-ordination all have become liabilities, rather than assets because of the lack of proper co-ordination which results is the cause of death and disability.

Table 1 Number of patient-deaths, according to causes

CAUSES	YEAR 1987				YEAR 1988			
	No. of Patients	No. of Deaths	Total	%	No. of Patients	No. of Deaths	Total	%
1. Traffic	575,982	10,643	586,625	34.01	514,452	10,011	524,463	35.75
2. Fall of person & object	327,979	1,548	329,527	19.11	272,789	1,524	247,313	18.70
3. Drowning & foreign body	20,760	1,277	22,037	1.28	20,418	923	21,341	1.45
4. Tool & machinery	312,682	569	313,251	16.18	255,835	217	256,052	17.45
5. Fires & hot-object	26,820	274	27,094	1.57	22,501	149	22,650	1.54
6. Electricity	6,492	449	6,941	0.40	6,025	384	6,409	0.44
7. Natural & environmental	173,876	427	174,303	10.11	135,523	286	135,809	9.26
8. Poisoning by drugs & chemical	47,129	620	47,749	2.77	34,349	435	34,784	2.37
9. Mishaps in medical treatment	3,398	38	3,436	0.20	3,104	61	3,165	0.22
10. Explosive	21,506	1,672	23,178	1.34	17,352	1,364	18,716	1.28
11. Suicide and self-inflicted	118,473	2,664	121,137	7.02	98,199	2,504	100,703	6.86
12. Others	67,318	743	68,061	3.95	66,235	623	66,858	4.56
13. Unknown	1,258	186	1,444	0.08	1,794	52	1,846	0.13
TOTAL	1,703,673	21,110	1,724,783	100.00	1,448,576	18,533	1,467,109	100.00

Source: National Accident Research Center, National Safety Council.

Table 2 Leading causes of death (rate per 100,000 population) by age group, Thailand. 1979-1982

CAUSE OF DEATH	1979	1980	1981	1982
Age 5 - 14				
Accidents, poisoning and violence	18.3	17.4	16.7	15.0
Malaria	5.8	5.2	5.6	5.2
Diarrheal diseases	4.8	3.3	2.5	2.2
Pneumonia	3.3	3.0	2.2	2.5
Diseases of the heart	3.3	3.8	3.0	4.1
Malignant neoplasm (all forms)	2.0	2.0	2.0	2.3
Age 15- 24				
Accidents, poisoning and violence	44.4	43.9	41.1	39.2
Malaria	8.5	9.3	9.7	8.3
Diseases of the heart	10.8	11.6	11.3	11.4
Malignant neoplasm (all forms)	4.6	4.5	4.5	4.6
Tuberculosis of respiratory system	2.3	2.4	1.9	1.9
Pneumonia	2.4	2.6	2.2	2.3
Age 25- 44				
Accidents, poisoning and violence	46.7	45.6	44.8	43.9
Diseases of the heart	25.4	27.0	25.6	26.7
Malignant neoplasm (all forms)	16.3	18.2	21.8	19.2
Tuberculosis of respiratory system	12.6	10.8	9.1	8.7
Malaria	8.0	7.6	8.4	7.7
Pneumonia	4.2	4.5	3.8	3.9
Age 45- 64				
Malignant neoplasm (all forms)	93.2	103.6	108.9	113.2
Tuberculosis of respiratory system	65.6	63.9	51.1	52.5
Diseases of the heart	93.8	99.4	99.7	110.0
Accidents, poisoning and violence	51.9	52.1	48.0	47.6
Pneumonia	16.1	18.5	16.2	17.5
Malaria	12.0	12.2	12.9	11.1
Age 65 and over				
Malignant neoplasm (all forms)	159.4	174.0	180.7	295.2
Tuberculosis of respiratory system	112.6	109.7	97.0	144.0
Accidents, poisoning and violence	72.8	68.4	71.9	97.3
Pneumonia	47.3	52.5	50.4	77.0
Diseases of the heart	252.1	273.1	290.0	475.1
Malaria	13.4	13.5	14.0	18.0

We consider it our responsibility to carry on the co-ordination and the management of providing emergency medical services for various accident victims and to ensure that they are effective enough to prevent and control potential problem arising after the accident. These medical services must provide the best possible medical care in order to restore to normal the health of these injured people.

The delivery of effective, organized, pre-hospital emergency medical services (EMS) is well developed in big, crowded cities of civilized countries such as San Francisco, Tokyo, Hongkong etc.. When medical emergencies are reported, trained medical personnel can be assembled quickly and can render emergency care at the scene within 8 - 10 minutes. The skill of these personnel range from basic first aid to life support techniques.

Patients are stabilized prior to transport to the hospital.

Radio communications permit ongoing discussion of patient's status and treatment between emergency medical personnel at the scene and the supervising physicians at the hospital.

Emergency medical services consist of several components: (1) field personnel trained to provide first aid and life saving care, (2) a comprehensive emergency communication network, (3) hospital emergency department physicians and nurses who supervise the treatment provided by EMS personnel, (4) Hospitals or Trauma Centers and Rehabilitation Units, and (5) EMS administrative officials who manage and co-ordinate the components of EMS.

Problems arising from providing Emergency Medical Services (EMS) in Bangkok Metropolitan areas

The following problems are considered as factors impeding EMS.

1. Lack of effective communications in the reporting of emergencies. At present, a single, easily

remembered telephone number (911 of 199) can not be used to request emergency help from the EMS offices.

2. A dispatch center - organized by Police department that is ineffective due to a shortage of personnel and relevant facilities.

3. Inadequate EMS equipment due to shortage of ambulances well equipped with life saving devices, telecommunication radios, computers etc.

4. Inefficient Emergency Medical Services Personnel.

5. Traffic congestion is the worst problem, especially in Bangkok, and cause loss of valuable time in transporting the injured patient to a near-by hospital.

6. Lack of co-ordination or replication of EMS administration which links a variety of organizations including hospitals - public or private, public safety agencies such as police or fire departments, of privately owned agencies.

7. Medical service facilities

have a shortage of hospital medical and nursing staffs.

8. An inadequate referral system,

Guidelines for Emergency Medical Services System⁽⁴⁾

1. Outside the hospital, 1.1 Alarm and communication systems

The alarm system is an extremely important part of an emergency service, yet in the case of emergency medical services, nowhere has it been given the attention it deserves. The need for good communications between medical and non-medical services is evident, but this raises questions of confidentiality. The co-ordinating and dispatching arrangements in emergency medical services are also important.

The telephone is the major means of bringing emergencies to official attention. In order to minimize the delay, telephone calls to the emergency services should be free of charge.

1.2 Transportation - Ambulance service

Transportation of the patient to a nearby hospital is a necessity. This should be carried out by a well equipped ambulance.

1.3 First aid and life saving

The layman who has been trained in first aid and life saving can function in bridging the time gap until professional help arrives. The basic minimum requirement should be that these people should be able to use simple equipment or skill to deal with the problem at hand.

2. Hospital Facilities and Staffing

Emergency Medical Service systems typically include hospitals with a variety of treatment capabilities, ranging from local community hospital with limited emergency department staffing to large teaching hospitals with emergency physicians, surgeons, anaesthesiologists and surgical teams available 24 hours a day.

3. Emergency Medical Services Administration

EMS systems can be administered through various organizations, including government health departments and public safety agencies such as police or fire departments. At present in the Bangkok Metropolitan area the EMS system is being operated by a dispatch center of the police department.

To enable the people in the Bangkok Metropolitan area to receive effective emergency medical services, a co-ordinating center in the Department of Medical Services of Ministry of Public Health (MoPH) has been organized. In giving emergency medical services, there are numerous problems which have to be confronted, especially in co-ordinating among the responsible units. These units include agencies at the ministerial, departmental and sectional levels, and also the private sector. In order to solve these problems, the role played by the authorities concerned

should be of the highest calibre so that a proper order can be given or remedial action can be taken.

The main principles arising from lack of co-ordination arise from many aspects such as the following:-

1. Lack of effective planning from each unit because they are only concerned with their own unit's interest.

2. Lack of centralizing in the chain of command at various levels.

3. Most organizations think only of their own interests. It is vitally important that a co-ordination centre be established in order to create a responsible organization to promote, support and stimulate the working plan. Also, in order to achieve effective results, a committee should be established to coordinate the activities of the government with those of the private sector. Examples of non-government agencies in Bangkok that are very involved in EMS are Thai Red Cross, Private Hospital Association,

Volunteer Radio Association, Protection Foundation, etc.

Management of EMS in Bangkok Metropolitan Areas.

The Department of Medical Services of the Ministry of Public Health should take an initiative in acting as the Medical Co-ordinating Center for accidents with the following responsibilities⁽⁶⁾:-

1. Planning, co-ordinating and monitoring the utilization of available resources and preventing intersectoral role conflicts.

2. Promptly assessing the disaster's magnitude and the number, location, and emergency requirements of the victims.

3. Selecting an area or zone to be used for the classification or grouping of mass casualties (triage and tagging) and identification of casualties prior to their removal to medical care centers.

4. Establishing lines of communication with regional hospitals or activating the implementation of their respective emergency plans

for mass care of the wounded.

5. Co-ordinating the training of relevant personnel.

6. Operating an information center relating to accidents.

7. Co-ordinating the public relations and transfer of technology.

Summary

Having studied the various problems which cause the failure in rendering effective emergency medical services to the victims of accidents in the Bangkok Metropolitan area, we have found out that these causes are numerous e.g., lack of co-ordination among various organizations, ineffective emergency medical personnel, and shortage of the necessary equipment. However the most serious problem is the lack of proper co-ordination of the units concerned.

We have outlined and presented

the principle of management and the logistics of establishing a co-ordination center for the management of an EMS system. The Ministry of Public Health will be directly responsible for it and the Department of Medical Services will act as a secretary of the center.

Expected results to be gained under this management

Firstly, people in the Bangkok Metropolitan area will receive proper and effective emergency medical services, thus minimizing the loss of life and disability in these population.

Secondly, government and private sectors will co-operate to serve the patients receiving emergency medical services more effectively.

Lastly, the people and the nation will benefit from a considerable reduction in economic and human losses from accidents.

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