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THE SMA-APMPS CARDIOPULMONARY RESUSCITATION (CPR) TRAINING PROGRAMME

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THE NEED FOR CPR

A young widow recently wrote to a local women's magazine, lamenting the sudden and unexpected premature death of her husband from a heart attack. She expressed her regret that she did not know what to do to try and save her husband when the tragedy struck. The reply of the magazine's columnist was that the outcome might have been different if she had known how to perform cardiopulmonary resuscitation (CPR).

Sometime last year, a Japanese man plunged into the sea of Desaru in Johor, to help another man who was in difficulties, but got into trouble himself in the strong currents. When they finally pulled him out he was moribund. A university student stood by helplessly, not knowing what to do, and watched him die. The newspapers later quoted him as commenting sorrowfully that he wished he knew how to perform CPR.

Two familiar stories, for all too often sudden death is the first indication of disease or the rapid outcome of an accident, unless timely intervention is instituted.

In Singapore, coronary heart disease, or "heart attack" constitutes the most important individual cause of death, surpassed only by all types of cancers put together. Of those who do get hospitalised, usually several hours after the onset of a heart attack, and receive adequate treatment, the death rate averages 10-15%. Unfortunately, most deaths occur in the early phase of a heart attack, about two thirds in the first two hours, thus limiting the opportunity to get the patient into hospital before cardiac arrest occurs.

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Of these early pre-hospital deaths, many, perhaps as high as 50%, are due to ventricular fibrillation, a sudden electrical instability in what have been described as "hearts too good to die" i.e. where mechanical function is still adequate if the electrical rhythm is normal.

Hospital Coronary Care Units (CCU's) obviously can make little difference to those out-of-hospital deaths. The Mobile CCU, an ambulance manned by trained personnel and adequately equipped with resuscitation equipment, can save some of these victims, provided it reaches the patient before or soon after a cardiac arrest supervenes. The logistics of such a facility can pose considerable organisational problems: an earlier attempt at this in Singapore was aborted when it became apparent that it was not, for various reasons, serving its purpose.

Only CPR, promptly and effectively instituted, can achieve the highest rate of successful resuscitation. In the United States, communities with large numbers of laypersons trained in Basic Life Support (BLS), which includes CPR, have reported that more tha 40% of patients with documented ventricular fibrillation out-of-hospital, and as high as 60—80% in selected sub-groups of patients with documented cardiac arrest, can be successfully resuscitated if CPR is promptly and effectively instituted.

On the other hand, without prompt bystander CPR, successful resuscitation of the pre-hospital cardiac arrest is less than half as likely, even with rapid response by a well-trained mobile CCU or paramedic team.

In addition to coronary heart disease, victims of other diseases, and of drowning, electrocution, lightning strikes, suffocation, drug intoxication, anaphylactic reactions or automobile accidents, in which there is cardiac arrest or rapid deterioration of cardiac and pulmonary function, can be saved by prompt and effective CPR.

WHAT IS CPR?

What then is CPR? It is the technique of externally supporting the circulation and respiration of a victim of cardiac or respiratory arrest. I do not wish to get us entangled in the sometimes confusing terminology that has evovled around the original concept of CPR. In the U.S. in particular, terms and acronyms like Basic Life Support (BLS), Adult Cardiac Life Support (ACLS), Emergency Cardiac Care (ECC) have been coined to described various aspects of the concept and organisation of a comprehensive community-wide Emergency Medical Services (EMS) system.

For the purposes of our discussion, BLS encompasses CPR as its principal component. As new information indicated that sudden death, particularly in coronary heart disease, can be prevented in some cases by early intervention, the scope of BLS has been widened to include prevention of circulatory or respiratory arrest or insufficiency, through early recognition of the signs of heart attack or impending cardiopulmonary arrest, and prompt institution of appropriate measures. This extends BLS into the wider sphere of community preventive health.

THE ROLES OF THE HEALTH PROFESSION AND THE COMMUNITY

From the foregoing discussion, it is apparent that CPR is a concern and responsibility of both the health profession and the community.

It is the responsibility of the health profession to —

(a) keep itself informed of the body of knowledge concerning the causes and mechanisms of cardiac arrest, the possibilities for risk reduction and primary prevention, the early warning signs of heart attack and impending cardiopulmonary arrest;

(b) become competent in the skills of CPR and BLS;

(c) promote and facilitate the training of the community in CPR;

(d) stimulate the widest possible dissemination of the knowledge of primary prevention and risk reduction of sudden death.

Physicians, nurses and other paramedical personnel directly involved in patient care should acquire competence in CPR. Currently, the acquisition of a degree, diploma or licence to practice does not necessarily assure competence in CPR. Until recently competence and experience in CPR was acquired on an ad hoc basis, mainly by personnel who, by the nature of their work, most frequently encountered cardiopulmonary arrest, in particular cardiac care physicians and nurses, anaesthesiologists and emergency care personnel. The time has come for medical schools and hospitals to include the theory and practice of BLS in their training programmes.

I emphasize again, that outside the hospital setting, the success of BLS is dependent on the layperson's willingness and ability to perform CPR promptly when cardiopulmonary arrest occurs. Hence the responsibility for providing life-saving CPR in this situation can be considered to be primarily that of the community. Ideally every able-bodied person in the community should become competent in CPR, and every individual should have a well-formulated plan of action in such medical emergencies.

It would be impracticable for anyone, and I daresay that includes the President and the Prime Minister, to have a personal physician permanently by his side, even if he were married to one!

THE SMA-APMPS CARDIOPULMONARY RESUSCITATION TRAINING PROGRAMME

Realising the importance of this aspect of emergency medical care, the Ministry of Health (MOH) recently initiated an on-going programme in the Singapore General Hospital (SGH) to train its doctors in CPR. With the assistance of MOH the Ministry of Defence (MINDEF) has followed suit with a programme for the armed forces. Both these organisations will have their hands full training their own staff. The Red Cross Society has made a tentative start with its own programme.

But, apart from limited ad hoc in-house programmes in various private hospitals, there are no on-going comprehensive CPR training programmes for medical personnel in the private sector and for the community at large. Recognising the need for such a programme, the SMA in conjunction with the APMPS has taken the decision to launch a CPR Training Programme which will complement the MOH and MINDEF programmes.

The overall goal of this programme is to train members of the community, whether medical professional or layperson, to competently perform CPR. To realise this goal, the SMA-APMPS CPR Training Programme Committee has formulated a 3-phase programme.

Phase I is a pilot project whose objective will be to

train a pool of medical and paramedical personnel in BLS, from whom can be drawn a group of volunteers for further training as instructors under Phase IIA. In the first year the programme will train 12 persons per month.

Phase II will have 2 parts —

Phase IIA will be the Instructors Course

Phase IIB will be an expansion of Phase I to increase the intake for the BLS course.

Phase III will extend the BLS course to the public, both directly and in collaboration with community organisations who may wish to initiate a CPR programme of their own.

The components of the SMA-APMPS Modified BLS Training Course for Phase I are summarised in Appendix I. They are in all essential aspects identical with those of the SGH Course. We have communicated to the Ministry of Health our desire for some form of official accreditation of our course. We believe that official endorsement of such a programme will be useful as quality assurance when the need arises to deploy persons competently trained in CPR to various services and in emergency situations. Additionally, it will serve as an incentive to intending participants. I would further propose the setting up of a National Committee for Accreditation of CPR Training Standards, with representatives from the Ministry of Health, Ministry of Defence, the Singapore Medical Association, and other appropriate organisations like the Red Cross Society.

To run a programme like the one we hve proposed successfully, there are 4 basic requirements viz Personnel, Venue, Equipment and Finance.

We have been fortunate in obtaining the expert advice and assistance of Dr Maurice Choo, Chairman of the SGH Life Support Course and Dr Tan Wan Cheng, Co-ordinator of the Instructors Course, through whom we have been promised the voluntary services of some of those who have graduated from their programme, as instructors for our BLS courses.

We have had the generous agreement of Mt Elizabeth Hospital to use its Physiotherapy Department as the venue for the courses and I would like to record our thanks to the hospital.

I have been particularly fortunate also in having the support of an enthusiastic committee.

To ensure that our course standards will accord with the recommendations of the American Heart Association, we intend to make use of the most up-to-date learning aids and equipment for CPR training, including the use of audiovisual programmes, adult and infant mannikins and other resuscitation equipment. This equipment will of course incur capital expenditure. We have budgetted a sum of $40,000 to purchase this equipment, provide for recurrent expenses, expansion of the programme and contingency expenses, in the first 2 years.

To initiate the funding, the SMA has put up $10,000. We have had the good fortune of the generous offer of the Rotary Club of Pandan Valley to raise another $20,000. The balance of the income will have to come from tuition fees, which have been kept to a modest.

My committee and I look upon this project as an example of the way in which the medical profession can collaborate with the community to strive for the betterment of all. May we invite you to participate in this CPR Training Programme, both to learn a useful life-saving skill as well as to contribute your services to the community as instructors in CPR. For, who knows, as a result of the knowledge and skills in CPR you impart to others, the life they save may one day be yours.

APPENDIX I

SMA-APMPS MODIFIED BASIC LIFE SUPPORT TRAINING COURSE

BRIEF SUMMARY

The courses in modified life support are conducted monthly. Each course consists of 2 three-hour sessions held on the same or 2 separate days within a single week. It will include teaching employing audio-visual aids, practical training, testing and certification. There will be 12 trainees per course which will be conducted by 3 instructors per course. The venue is the Physiotherapy Department of Mt Elizabeth Hospital.

COURSE PROGRAMME

Part I

1 Introduction to the Modified Basic Life Support (BLS) Course
2 Video programme on BLS
3 Lecture-cum-dempnstration on BLS
4 Practical training in BLS
5 Video programme on endotracheal intubation
6 Lecture on defibrillation

Part II

1 Practical training in adult and infant BLS, intubation and defibrillation
2 Testing
3 Attitude survey
4 Results and presentation of cards and certificates