

Life Support Course for Nurses in Singapore

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ABSTRACT

Nurses are usually the first caregivers for cardiac arrest patients in an in-hospital environment, and subsequently partner with doctors in the further resuscitation of patients. The skills of basic life support are crucial for their practice. The Advanced Cardiac Life Support programme is traditionally geared toward training of medical staff in advanced resuscitation skills. The need for a bridging course that focuses on the knowledge and skills required by nurses to become effective members of the resuscitation team has resulted in the creation of the Life Support Course for Nurses (LSCN) in Singapore. The components of the LSCN programme have evolved over the years, taking into consideration the modifications to resuscitation guidelines. The LSCN programme is gradually including a larger proportion of nurses in the emergency and critical care environments as well as those in the general ward.

Keywords: empowering nurses, life support team, nurse instructors, nursing life support training centres

Singapore Med J 2011;52(8):557-559

INTRODUCTION

While the Basic Cardiac Life Support (BCLS) course trains a nurse in basic cardiopulmonary resuscitation (CPR) skills, it does not impart sufficient knowledge and skills for a nurse to resuscitate collapsed patients. In-hospital cardiac arrest discovered by nurses trained in Advanced Cardiac Life Support (ACLS) is, however, associated with higher survival-to-discharge rates.⁽¹⁾

In the early 1990s, the idea for a targeted life support training course for special groups, e.g. nurses, was recommended by Health Manpower Development Plan experts in resuscitation, such as Dr Colin Robertson. By 1998, three institutions were conducting ACLS or a form of modified ACLS developed for their trainees and nurses. They were Nanyang Polytechnic (NYP), Singapore General Hospital (SGH) and Tan Tock Seng Hospital (TTSH).

Also, in 1998, the National Resuscitation Council (NRC) identified a need to develop a life support course

for nurses that would cover more than BCLS but less extensively than ACLS. At that time, the NRC had subcommittees overseeing BCLS, ACLS and the use of automatic external defibrillators. The NRC tasked Dr Eillyne Seow to form and chair the subcommittee for the Life Support Course for Nurses (LSCN).

The inaugural meeting of NRC's LSCN subcommittee was held on January 28, 1999. The members of this subcommittee were drawn from all seven public hospitals, the School of Nursing at NYP, the Singapore Private Hospital Nursing Administrative Group and the Ministry of Health. It was decided at this meeting that this programme would be designed with a standardised core curriculum. Extra modules (e.g. paediatric collapses) that would take into consideration the different needs of the different organisations were added. A working group led by Dr Tham Kum Ying was formed. The group took four months to develop the course material and write the manual for the new LSCN programme. The following were the contributing authors to the first LSCN manual: Ms Roselin Ang and Chye Choh Hwee from NYP, Ms Celestine Fong (Mount Alvernia Hospital [MAH]), Ms Kwek Koon Roan (National Heart Centre [NHC]), Ms Josephine Teo (SGH), Dr Tham Kum Ying (TTSH), Ms Yew Lay Hwa (Changi General Hospital [CGH]) and Dr Irene Chan (KK Women's and Children's Hospital). Drs Eillyne Seow (TTSH) and Teo Wee Siong (NHC) served as advisors.

CURRICULUM

The objective of the LSCN course is to bridge the gap between BCLS and ACLS so as to impart to nurses the critical background knowledge pertinent to the care of cardiac arrest patients in hospitals and clinics by providing in-depth knowledge and skills in CPR. During the conception and creation of the curriculum, the realities that registered nurses face daily in their work were kept in mind. In certain critical treatment issues, this course follows the policies and guidelines provided by the NRC. However, recognising that the work environment of Singapore nurses varies widely, a general framework was provided so that local practice can be adapted in other areas.

The two-day course aimed to enable the registered nurse to fulfil a specific, effective and organised role as a member of a life support team by helping them to

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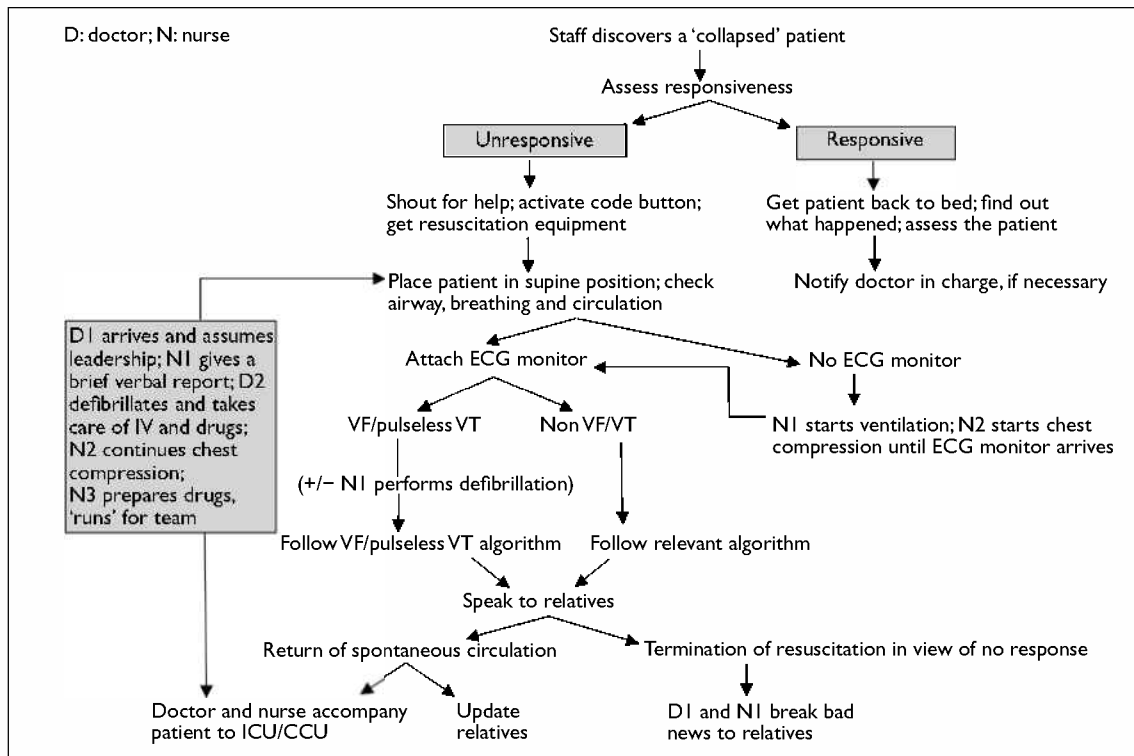


Fig. 1 Flowchart of resuscitation process before the arrival of the Code Team.

prioritise primary and secondary responsibilities, and by providing them with the essential skills to manage a cardiopulmonary arrest patient during life support interventions and to treat the patient until he is transferred to a critical care area (Fig. 1).

For that, the following 12 topics were covered:

1. Chain of Survival
2. Update on BCLS
3. Acute Myocardial Infarction
4. Airway Management
5. Electrical Therapy
6. Arrhythmias Treatment Algorithms
7. Drugs and Drug Delivery Systems
8. Organisation of Resuscitation
9. Post-Resuscitation Care
10. Cardiac Arrest in Special Circumstances
11. Bradyarrhythmias and Tachyarrhythmias
12. Paediatric and Infant Resuscitation

PROGRESS

The first LSCN provider and instructor course, under the auspices of the NRC, was successfully conducted in July 21–23, 1999. The candidates of the LSCN provider course were taught to recognise and manage all cardiac arrest rhythms: asystole, ventricular fibrillation/pulseless ventricular tachycardia and pulseless electrical activity. They took a 30-question multiple-choice quiz (to be

completed in 45 minutes) and were tested in two practical stations (airway and megacode).

The LSCN course has made much progress, and efforts are continually made to keep the course up to date. By March 2001, the committee had successfully conducted seven LSCN provider and instructor courses. The number of centres conducting LSCN provider courses has also grown steadily. Instructors have to teach twice a year in order to maintain their instructor status, and the same set of course material is taught at every centre. This reflects the strong team spirit of the committee, whose objective is to assist each organisation to train as many of their staff as possible.

The first LSCN Instructors' Day was held on May 19, 2001. This event aimed to keep instructors updated of any changes in the guidelines and to facilitate the exchange of teaching tips and ideas among the instructors. In 2002, the LSCN provider recertification programme was introduced. It was set as a half-day programme, which covered a multiple choice test and a megacode station encompassing airway techniques and defibrillation skills. In 2008, the LSCN committee started auditing all LSCN training centres biyearly so as to ensure that standards were kept.

To align with the International Liaison Committee on Resuscitation (ILCOR) and NRC's updates on the guidelines for resuscitation, the LSCN curriculum underwent revisions in March 2006^(2,4) and December 2010.^(5,6) The

latest guideline emphasises minimising delay in starting chest compression. Upon establishing unresponsiveness, apnoea or abnormal breathing in a collapsed patient, chest compression is immediately applied, omitting the two rescue breaths. Quantitative waveform capnography is recommended to be used during resuscitation, as it aids in the confirmation of endotracheal tube placement, gives visual feedback of the quality of chest compression and identifies return of spontaneous circulation. Also incorporated in the new guideline is the recommendation of a post-cardiac arrest protocol, which includes therapeutic hypothermia, avoidance of hyperoxia and coronary reperfusion, where indicated.

At present, there are 142 LSCN instructors and nine LSCN provider training centres (Alexandra Hospital, TTSH, MAH, National University Hospital, Khoo Teck Puat Hospital, CGH, NYP, Alice Lee Institute of Advanced Nursing and NHC). In the year 2010, there were collectively 97 courses, recertifying 337 and training 946 providers.

CONCLUSION

As the Ministry of Health and staff in all the hospitals gear up to meet the increasing healthcare needs of the ageing Singapore population, it is predicted that LSCN will continue to play an important role in our healthcare system. In the hospitals, patients are, and will be, older and sicker. Nurses, by the very nature of their practice, are usually the first healthcare professionals to witness or discover a cardiac arrest or a critically ill patient. LSCN supplements

BCLS skills and empowers nurses to begin the initial stages of advanced resuscitation for the first 5–10 minutes until ACLS-trained doctors arrive to lead the resuscitation. By focusing on the initial 5–10 minutes of resuscitation, the content in LSCN is less complex compared to ACLS and yet adequate for practical use. By reducing the cognitive load in LSCN, nurses find it more manageable, less daunting and more suited to their needs. LSCN continues to bridge the gap between BCLS and ACLS. For nurses working in high volume-critical areas, it is hoped that with the confidence gained from LSCN, they will go on to become ACLS providers.

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