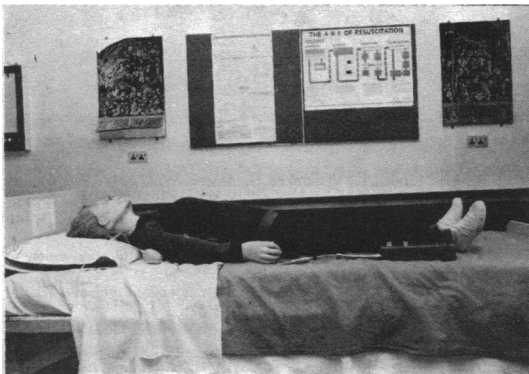


ABC of Resuscitation

GERALYN WYNNE

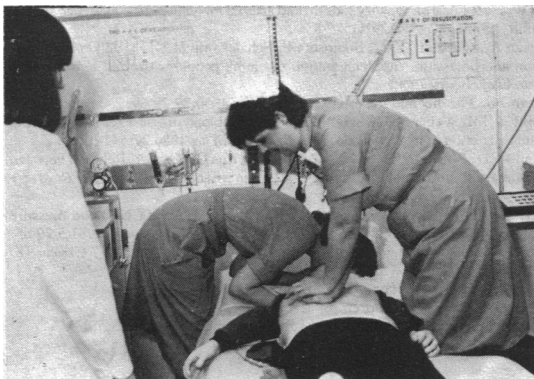
TRAINING AND RETENTION OF SKILLS



Resuscitation training is essentially a practical skill and students need practical training to acquire it. Genuine life threatening situations rarely occur at a time or place where teaching is possible, so practical training has to be simulated. This has been made possible since 1960 by the development of various manikins and training aids.

In most hospitals teaching of resuscitation is haphazard, and medical and nursing students are perhaps taught only once during their courses. The teaching is usually left to a consultant or tutor interested in the subject, who is faced with a class of 20-40 students for one or two hours. There is probably no time during the session for students to practise what they are taught. Almost every hospital has a "training manikin," which is from time to time produced to entertain the class. How can these students be expected to perform resuscitation competently if they have never received adequate training?

Better teaching of skills



The results of surveys of house officers' inability to carry out cardiopulmonary resuscitation suggest an urgent need for a review of resuscitation training. Formal training should begin in medical school with no assumptions being made about previous knowledge. Revision courses for qualified doctors should be provided not just to instruct, but also to test skills. All doctors, regardless of specialty, should be able to perform basic cardiopulmonary resuscitation. Those concerned in hospital resuscitation teams should be properly trained in the use of the equipment available and their techniques carefully supervised. At present there is no recognised national training programme for basic or advanced life support in medical and nursing schools, though the Resuscitation Council (UK) has issued guidelines on basic and advanced life support, which are now being used in many centres.

In 1978 the Joint Commission on Accreditation of Hospitals (USA) decided that to become accredited a hospital must show that all doctors on its staff had undergone recognised resuscitation training.

Retaining skills

4 Hour teaching session

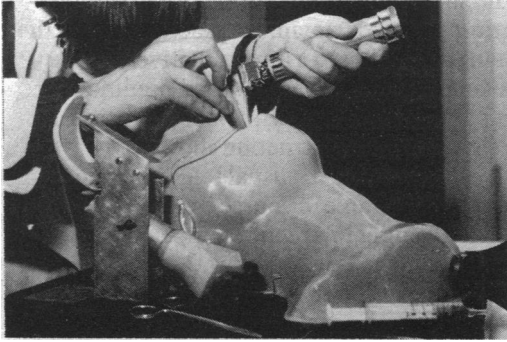
- (1) Taught in one session
- (2) Two hours of manikin practice
- (3) No use of textbook
- (4) Required performance testing on only one person cardiopulmonary resuscitation
- (5) Required 75% mastery of the one person technique for certification

Since the development of the original resuscitation standards in 1974 in the USA investigators have concerned themselves with the question of how students attain and retain their skills. Particular interest has focused on how skills deteriorate over time.

Performance deteriorates over all intervals of time tested. This is true even six weeks after training, and severe loss of skills occurs after about 12 months, when typically 20% or fewer trainees can perform basic life support proficiently. Individual differences in retention are found but are not related to differences in the sex or weight of the trainees. Decline in resuscitation skills is greater than for other first aid skills such as traction, splinting, or bandaging. The underlying theme is clear: skills that are not regularly practised are not retained.

The standards and guidelines for basic life support may seem complex, with different techniques and rules to be applied to one or two rescuers.

Advanced life support



The purpose of the advanced cardiac life support programme is to provide doctors, nurses, medical students, paramedics, and other allied health personnel with enough knowledge and practical skills to treat patients with cardiorespiratory arrest definitively. Kaye devised the Megacode, designed to simulate an actual cardiorespiratory arrest in which the students are offered the opportunity to integrate the knowledge and skills acquired in recognising arrhythmias, applying defibrillating electrodes on the arrhythmia manikin, practising intravenous cannulation, endotracheal intubation, airway management, and drug therapy to learn to act in a coordinated fashion as members of a resuscitation team.

A study performed to determine competence in advanced cardiac life support skills found that reinforcement and continuing medical education may enhance knowledge retention but do not maintain motor skills. Yearly recertification in advanced cardiac life support skills should be considered and frequent simulated practice sessions should be encouraged for doctors.

Teaching methods which can be used for basic life support and advanced cardiac life support training are the following.

Verbal instruction—Clarity, accuracy, and repetition are necessary.

Visualisation—Techniques and procedures can be visualised in the form of demonstrations, blackboard pictures, charts, projected slides, films, and videos.

Practice is the most important aspect of cardiopulmonary resuscitation training. Training manikins must be used for practising lung ventilations and chest compressions. These should be as realistic as possible, to enhance motivation and physiologically correct learning. Each student should have enough time for manikin practice to reach perfection in performance. To achieve this, lecturing should be kept to a minimum and student groups should be small. There should be no more than four to six students per manikin. Supervised practice allows guidance and evaluation by the instructor. The student can be evaluated by printout records of his performance, which provide the evaluator with exact objective data or by automatic guidance by way of light signals, dials, etc.

Self training systems have many advantages over traditional lectures and manikin practice supervised by an instructor. People learn at different rates, so training programmes should allow for individualised learning. Self training systems should encourage students to acquire knowledge from illustrated texts, tape recorded lectures, or both. These systems guide skill practice on manikins through demonstration of pictures, coaching by audiotaped narration, or the text of manuals.

Recommendations for improving the quality of cardiopulmonary resuscitation training

- (1) Practical training on a manikin is better than either demonstration only or passive learning.
- (2) Feedback is essential, especially via a recording and monitoring manikin.
- (3) Practice after initial training improves cardiopulmonary resuscitation performance.
- (4) Refresher training is important; even a brief review of training material can have a measurable effect.
- (5) Periodic refresher training is essential if the skill is to be retained and should take place probably within a year of training.
- (6) Guidelines for training should be as uniform as possible and hopefully be at least similar throughout the world.
- (7) Schools should play a great part in disseminating knowledge about first aid and cardiopulmonary resuscitation and in teaching proficiency to the public at large. School age is excellent for learning these relatively simple psychomotor skills and the necessary knowledge. Teaching school children allows for annual retraining.
- (8) Ideally every hospital should have a resuscitation training room equipped with all the appropriate training aids for basic and advanced life support. Trainees should be encouraged to visit the room in small groups to use the equipment at their own pace and under the direction and supervision of a resuscitation training officer.
- (9) A designated resuscitation training officer is vital for coordinating and implementing resuscitation training programmes within a hospital if standards and skills are to be maintained.

Adequate training in resuscitation should provide the knowledge, skills, reassurance, and motivation necessary for achieving a competent performance in real life situations.

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