An automated external defibrillator

Technology

An Automated External Defibrillator 2006 Outline: A) An Automated External Defibrillator. Legal issues of its use. C) Ethical issues concerning resuscitation.

D) Beneficence of an Automated External Defibrillator.

Each year over 150, 000 UK people die from cardiac arrests. (Cardio Pulmonary Resuscitation) From 80s the problem was addressed with Automated External Defibrillators (AEDs) which could interpret heart rhythm and deliver a defibrillation shock.

Now AEDs are placed in public locations - airplanes, airports, shopping malls, stadiums, casinos, exercise facilities, office buildings. AEDs are used by not only paramedics but primarily police officers, firefighters and other trained personnel. (Eisenberg & Mengert, 2001)

The Resuscitation Council (UK) supports the use of Automated External Defibrillators (AEDs) by trained lay people. However there’s no statutory requirement for training and retraining AEDs. The Department of Health cannot regulate this issue as well. (National Defibrillator Programme)

British law does not contain any statutory legal requirement to provide a defibrillator in public places. However, the failure to take adequate safeguards to protect the public present at a facility can be reviewed under common law. (Responsibility of organisations, 2006)

Though there are no statutory duties relating to the field of resuscitation (in the United Kingdom an individual is not obliged to assist a person in need of resuscitation), potential liability can arise at common law when first aider is accused of bringing harm as a result of their intervention. (Colquhoun and Martineau, 2000)

Cardiopulmonary resuscitation is confronted because of ethical issues.

Resuscitation is not always considered to be beneficial for the patient. In many cases it’s unlikely that the outcome is for benefit especially in the cases when the patient is already dead and medical care is futile. In fact resuscitation has a low likelihood of success in clinical setting. (Marco, 2005) As recent researches show many patients do not really desire resuscitative efforts. (Marco, 2001) However, most physicians attempt to resuscitate patients in cardiopulmonary arrest despite evident futility of efforts. They are likely to base decisions regarding resuscitation ‘ on concerns of litigation and criticism rather than their professional judgment of medical benefit or futility’. (Marco et. al., 1997)

The decisions related to resuscitation may be made based on information that is incomplete or erroneous. That’s why a physician should base the decision on many factors such as benefits of resuscitation (restoring life to the patient, resolution of guilt for the survivors) and potential risks (financial investments, resuscitation to a suboptimal quality of life). (Marco, 2005)

The study of Bunch et. al. (2003) shows that the majority of survivors returned to normal life similar to that of the general population but for the degree of vitality. However, these findings are in contradiction to previous studies reporting decreased quality of life among survivors of out-of-hospital cardiac arrest. Further studies should be conducted in the quality life assessment of cardiac arrest survivors.

Many studies prove that the use AED is safe enough to be used by even schoolchildren. For example the study of Cappato et. al. (2006) backs up that the implementation of AEDs by trained laypersons is safe and ‘ associated with a significantly higher long-term survival of CA victims’.

The safety of AED was vividly demonstrated by Carsten and Hohnloser

(2006) when under experimental conditions untrained schoolchildren applied a shock for ventricular fibrillation. The difference between the outcomes of trained medical professionals and children was 23 seconds of time.

In the study of Kellermann et. al. (1993) the impact of adding first-responder defibrillation to advanced life-support emergency medical services system is undermined. The researches come to the conclusion that the impact of adding first-responder defibrillation appears is small. Early defibrillation alone is not a solution, the " chain of survival" is important for survival after cardiac arrest.

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