Position Statement

April 2015

Automated External Defibrillators in Public Places

Sudden Cardiac Arrest (SCA) is a major cause of death in developed Western countries with an estimated 60,000 cases annually in the UK. Every week in the UK, 12 apparently fit and healthy young people under 35 years of age die from SCA due to undiagnosed cardiac conditions. In addition, SCA occurring in those over the age of 35 is often due to coronary artery disease (the number one cause of death in the western world). In England, the ambulance service attempt resuscitation in approximately 25,000 cases per annum. However, only rarely are they able to provide defibrillation early enough for the patient to survive.

Most cases of SCA are due to Ventricular Fibrillation (VF), which is a shockable rhythm and could be returned to a normal sinus rhythm with the use of an Automated External Defibrillator (AED). The single most influential factor in improving survival is treatment with a life-saving defibrillation shock from an AED. Conditions for defibrillation are optimal for only a few minutes after the onset of VF and so the best way of ensuring prompt defibrillation is having an AED nearby.

- Using an AED is easy and can cause no harm. The Resuscitation Council (UK) states:

  "**An AED [defibrillator] can be used safely and effectively without previous training** "(RCUK Guidelines, 2010). AEDs are compact, portable, effective, require little maintenance and can be stored for long periods.

- AEDs analyse the heart's rhythm and will only deliver a shock if it is indicated. Once activated, the AED guides the user through each step of the defibrillation process by using voice and visual prompts.

- Defibrillation is the use of a high-energy electric shock that stops the chaotic rhythm of VF and allows the normal, organised, electrical rhythm of the heart to re-start. This can allow the pumping action of the heart to return.

- Standard AED pads are suitable for use in children older than 8 years. Special paediatric pads, that attenuate the current delivered during defibrillation, should be used in children aged between 1 and 8 years if they are available. If not, standard adult-sized pads should be used. The use of an AED is not recommended in children aged less than 1 year. However, if an AED is the only defibrillator available its use should be considered (preferably with the paediatric pads described above).

- **Following SCA, survival rates drop 7-10% every minute without defibrillation** and therefore it is essential AEDs are publically accessible so life-saving equipment is available to anyone,

whatever time of day. The majority of SCAs in the UK take place out of hospital where AEDs are not readily available.

- In 2012, official figures reported that fewer than one in five people who suffer a cardiac arrest in the UK receive adequate care from bystanders. In some areas of the UK, just 1 in 14 people who suffered a cardiac arrest survived.

- Survival rates in the UK are poor compared with international standards. For example, in Seattle in the United States and Stavanger in Norway, where many citizens are trained in cardiopulmonary resuscitation (CPR), survival from out of hospital SCA with a shockable rhythm is 52%.

- Urgent defibrillation using an AED is the best way to re-establish the heart's natural rhythm and CPR is also necessary to keep the patient alive. Evidence from the US shows that if an emergency ambulance is called and immediate bystander CPR is used, followed by early defibrillation and effective post-resuscitation care, survival rates following cardiac arrest can exceed 50 per cent.

  CPR alone = 5% survival
  CPR + early defibrillation = 50% survival

- It is recommended that all school leavers are proficient in CPR and AED use.

- All public AEDs should be registered with the local Ambulance Service Trust (AST) to confirm the AST is aware of the AED and can log it onto a local database. This will help ensure that an AED is accessed quickly if needed.

The survival rate from out of hospital SCA in the UK needs to improve to be comparable with other parts of the world. The major factor limiting the number of people who survive SCA is the ability to provide defibrillation within a critical time period. In countries with improved survival rates, AEDs are more widely available and more of the public are trained in CPR. In the UK, as call-to-arrival times are usually greater than 10 minutes, ambulances often arrive too late to successfully resuscitate most people with out of hospital SCA. The best chance of survival for a casualty with SCA is prompt access to an AED. As in other countries with prompt access to AEDs this could lead to a significant reduction in mortality in both children and adults.

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Ends

Notes to Editors:

- The Faculty of Sport and Exercise Medicine was launched in 2006 and is an intercollegiate faculty of the Royal College of Physicians of London and the Royal College of Surgeons of Edinburgh
- The Faculty has over 550 Members and Fellows, not including medical students
- There are around 94 Sport and Exercise Medicine Doctors on the GMC specialist register
- The FSEM not only sets standards in SEM but oversees research, training, curriculum and assessment of SEM Doctors, including providing revalidation services
- Sport and Exercise Medicine involves the medical care of injury and illness in sport, exercise and the work place. It requires accurate diagnoses, careful clinical examination, experience and knowledge of sport and exercise specific movement patterns. SEM practitioners work in a variety of settings across primary, secondary and tertiary care. The specialty has a large scale application in improving the health of the general public through exercise advice and prescription. Further information about the specialty can be found in the Media & Resources section at www.fsem.co.uk

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Faculty of Sport and Exercise Medicine

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