



Martin Secker of
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Sudden Cardiac Arrest (SCA): The risks involved

Evac+Chair International has, for the last 35 years, been a national provider of evacuation chairs for the safe evacuation of people with mobility problems in the case of a fire or other emergency. Since January 2013 they have become heavily involved in the cardiac environment and are the UK's leading provider of defibrillators and especially the CardiAid defibrillator, Europe's number one unit.

What is Sudden Cardiac Arrest (SCA)?

SCA is the condition in which the heart is no longer able to pump blood to the brain and the rest of the body. Consequently starved of oxygen, the brain begins to die. In about 80% of cases it is caused by a chaotic fast heart rhythm, which is called Ventricular Fibrillation (VF).

Some statistics

- According to the British Heart Foundation, there were 74,000 premature deaths attributed to SCA in 2011. 1 in 6 males and 1 in 9 females died prematurely.
- Four times more women die from heart attack than from breast cancer.
- 12 people under the age of 35 die every week in the UK due to SCA.
- 70% of cardiac arrests occur outside a hospital environment, quite often in a hospital car park.
- Effective bystander CPR, administered immediately after SCA, can double a victim's chance of survival.
- Cardiac arrest is Europe's biggest killer – more so than cancer or crime.
- Around 270,000 people suffer a heart attack in the UK each year, with one third dying before reaching hospital.
- The Department of Health has a target of placing 3,000 new defibrillators in public places in England.
- Early defibrillation can triple the chance of survival.

Martin recalled the cardiac arrest of the young Bolton Wanderers' footballer Fabrice Muamba back in 2012. He had no record of previous heart defects or hereditary problems and regular heart tests had predicted nothing. His heart attack was brought on by extreme physical exertion. Groundsmen had used a defibrillator and were able to revive him after 80 minutes, with no apparent mental or physical dysfunction.

Causes of SCA

It is mostly unpredictable; regular heart tests can reveal no problem. SCA can be brought on by:

- heart attack
- respiratory arrest
- drowning
- trauma
- sudden emotional changes, such as job and financial worries
- electric shock
- stress
- drugs and alcohol
- excessive physical activity

Leading Risk Factors

- 75% of SCA cases have had a prior heart attack. A person's risk of SCA is highest in the first six months following a heart attack.
- 50% of cases are related to Coronary Heart Disease, the risk factors for which include smoking, family history of cardiovascular disease, high cholesterol or an enlarged heart.

The only treatment of SCA is immediate defibrillation and CPR. Automated external defibrillators (AED) are designed to make immediate defibrillation possible.

Why is Early Defibrillation Critical?

Chances of survival decrease by about 10% for every minute without defibrillation. With average response times for an ambulance currently at 18 minutes (or longer at peak times when traffic is particularly heavy) having equipment close-by – and someone prepared to use it - could mean the difference between life and death. After 5-6 minutes the brain has already started to die and the patient may be beyond all realistic chance of revival. For Fabrice Muamba, his recovery after 80 minutes was therefore simply amazing.

CardiAid

Evac+Chair International offers CardiAid, an automated external defibrillator. It gives clear verbal and visual instructions and there are three very simple steps so that the layman can use it to keep the patient alive prior to the arrival of the emergency services.

Use of the CardiAid

If you have basic CPR and chest palpitation knowledge it helps but it is not compulsory. You simply place the pads on the patient's body – as the unit is biphasic they don't have to be placed in an exact position and anywhere on the torso (not the patient's head) would still be effective. The machine will determine whether a shock is required to revive the patient and also the level of shock according to the patient's body size. It will give no more than is required and if the patient is choking or having an epileptic fit etc then no shock would be administered. Other equipment is also in the kit but rarely used in the emergency situation. The standard pads are suitable for ages from 7 upwards, with a paediatric size for smaller/younger persons.

Battery Powered

The CardiAid defibrillator is powered by alkaline batteries which have a two year lifespan. However, the majority of defibrillators use lithium batteries, which have been known to deplete when a unit is inactive for a lengthy period of time and so

will not work when needed. You are assured of the power being available with the alkaline batteries. The unit will self-test on a daily and a weekly basis, with a green flashing light to indicate the unit is fully functional. However, a flashing red light will confirm there is an issue or that the battery is flat.

Training Requirements?

David Hughes asked about training. Martin explained that the defibrillator is designed so no training is required. However, there are training units available to get people used to the prompts but which stop short of the electric shock at the end. There are annual half hour refresher sessions which may also form part of first-aid training. There is currently no legal requirement for training. David remarked that often people with no first-aid training are reluctant to come forward to assist in an emergency situation and stated that having first-aid training helps you to overcome the initial shock of the situation and fear that you will be unable to help the person.

Martin referred to regular media reports of people who have died due to help not being available early enough. It is sobering to note that it is not uncommon for people witnessing someone having a heart attack to also go into cardiac arrest through the stress of the situation.

And the Cost?

Another Member asked about the cost of the equipment, which is currently in the region of £1,000, including training. There are two versions available: a semi and a fully automated machine. Martin advised that although defibrillators are not yet a legal requirement he is confident that laws will be passed in the next two years for them to be available in all public access areas. Once laws are passed the cost of a machine is likely to quadruple.

Out of an audience of 49 today, 7 members had defibrillators within the workplace in the public areas. One member commented that in his experience some workers would not put themselves forward to administer the help unless they got paid extra for it!