

OUT-OF-HOSPITAL CARDIAC ARREST

A STRATEGY FOR SCOTLAND

A GUIDE TO PUBLIC ACCESS DEFIBRILLATORS



Objectives

Scotland is committed to improving the response to, and survival rates after, Out-of-Hospital Cardiac Arrest (OHCA). The overarching aim of Scotland's OHCA Strategy¹ is for Scotland to become a world leader in response to OHCA by 2020. The aims underpinning this are to increase survival after OHCA by 10% within 5 years and to train 500,000 people in Cardiopulmonary Resuscitation (CPR).

This guide aims to outline key things that individuals and communities should consider before purchasing and installing a defibrillator for use in responding to an OHCA. It was approved by Scotland's OHCA Strategy Delivery Group in Autumn 2017.

What is a Cardiac Arrest?

A cardiac arrest is an electrical problem that causes a person's heart to stop beating normally. It is *not* the same as a heart attack, which is a circulatory problem, caused by a clot forming in an artery supplying blood to the heart muscle.

What is a Defibrillator?

A defibrillator gives a high energy electric shock – called defibrillation – to a person's heart through their chest wall when they are in cardiac arrest. An Automated External Defibrillator (AED) analyses the heart rhythm of a person in cardiac arrest and may apply a shock to enable the patient's heart to restart, or advise continuing with CPR. An AED gives easy-to-follow guidance to the user, and will not apply a shock if it isn't needed. Bystander intervention buys time until emergency services arrive, but using an AED is just one element, alongside CPR and others, in helping to save lives.

A range of organisations, businesses, clubs, groups and communities across Scotland have already installed an AED. Many make them publicly available and to the emergency services: such Public Access Defibrillators (PADs) are key to strengthening community readiness to respond to an OHCA.

Think SHOCK

It's been said that using a defibrillator is 'shockingly easy'^{2,3}, so when thinking about buying one to have as a PAD, you might find it helpful to think SHOCK:

S – Sourcing

H – Health and Safety

O – Operability

C – CPR Learning

K – Knowledge and Awareness

Taking each in turn –



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S - Sourcing

PADs are available from various manufacturers, often as a package including a case and signage. A basic model will usually do for use as a PAD; advanced ones are intended more for organisations such as Community First Responders, but they can still be used by anyone. In choosing a PAD, consider initial outlay, guarantees, aftersales service, and battery and other in-service/post-use consumable costs (these will be device-specific).

If you are purchasing a PAD which may need to be used on a child experiencing an OHCA you should select a device which has been tested for use on children. These devices usually come with special pads or programmes for use on children. However, in the very rare case where a child is experiencing an OHCA and the available PAD is an unmodified adult one, the PAD can still be used⁴. If you are buying for a school or college, it is advisable to check with the local authority or main campus to see if arrangements are already in place to purchase PADs for all schools or campuses.

Funding can come from a range of sources including businesses, local authorities and third sector organisations, as well as from community fundraising efforts. However, funding availability varies and you should ask for up-to-date advice.

The British Heart Foundation makes funding available periodically in Scotland to support the part-funding of PADs for local communities. To find out more, visit their website to check eligibility criteria and to apply; <https://www.bhf.org.uk/heart-health/how-to-save-a-life/defibrillators/applying-for-a-public-access-defibrillator>.

The Scottish Ambulance Service (SAS) have details of some device providers at: <http://www.scottishambulance.com/YourCommunity/AEDCommunity.aspx> and work with some organisations that may offer funding to contribute towards buying a PAD. SAS' regional teams can provide advice. Their contact details can be found at: <http://www.scottishambulance.com/YourCommunity/team.aspx>. Through SAS, it may be possible to buy a PAD at a discounted price, subject to the device's registration on SAS' system.

H - Health and Safety

Think carefully about siting a PAD, including:

- Accessibility – how easy would it be to access when responding to an OHCA? Other guidance⁵ advises that no barrier should impede access when needed. It shouldn't be locked away or inaccessible. If buying more than one isn't practical then your PAD should ideally be sited no further than two minutes brisk walk from where it's most likely to be needed (e.g. busy public spaces, community and sports facilities).
- Risks – when positioning the PAD, consider the risk of slips, trips and fall hazards, and door access and climbing/descending steps, etc.
- Safety – when used properly, PADs are safe for all involved and will provide easy-to-follow vocal and/or visible guidance to the user, and advise them to stand back when analysing heart rhythm and prior to administering a controlled electric shock.

O - Operability

In terms of operability, please consider the:

- Location - the Scottish Ambulance Service can provide advice on installation permissions, and other issues such as installing a PAD in a local community facility. More details can be found at:
<http://www.scottishambulance.com/YourCommunity/team.aspx>.
- Storage - The more visible the placement of the PADs the better. Consider a special wall mounting or cabinet, marked by a sign. Some manufacturers offer special wall mountings as accessories, although third-party suppliers can sometimes be considerably cheaper. Always check that any mounting or cabinet will fit your PAD. If appropriate, a power supply for a heated cabinet would need to be discussed with the site owner. Signage is detailed under 'Knowledge and Awareness' later in this guide.
- Security - PADs should ideally be kept outside, in an unlocked, easily accessible cabinet. If you think the PAD needs to be secured, then any security provisions should not delay access when urgently required. The cabinet could be alarmed or locked, but with the key in a highly visible break-glass box or with a code lock whose code is known to first responders and the Scottish Ambulance Service (who the PAD should be registered with). Indicate on the cabinet in a highly visible location that a lock's code can be obtained by calling 999.
- In addition, if storing a PAD outside premises, the owner should check that it is covered by insurance arrangements. However, it is worth noting that the incidence of PAD theft is very low as the devices can't legally, or profitably, be sold without relevant documentation.
- Maintenance - PADs usually require little maintenance. Details on consumable replenishment or other post-usage needs are available from manufacturers. All PADs self-check and indicate if there is a problem and they should be monitored regularly, ideally by a nominated 'custodian', with records kept for reference. More details on this can be found at:
<http://www.scottishambulance.com/YourCommunity/Defibfaq.aspx>.
- Training - defibrillators are designed to be easy to use and will provide clear instructions to the user⁶. Some PAD providers offer training to familiarise people in their usage and raise awareness of OHCA. This training can be done quickly and easily, and is best combined with learning CPR skills (see below).
- Legal - you may wish to familiarise yourself with the law surrounding having and using a PAD.

C - CPR Learning

Immediate bystander CPR keeps a person alive in the crucial minutes until a defibrillator can be used and an ambulance or other medical support arrives. A PAD's use is enhanced if accompanied by prompt, good quality bystander CPR, as this can optimise the device being able to shock someone in cardiac arrest effectively.

Save a Life for Scotland is the partnership working to facilitate CPR learning opportunities across Scotland – search for these at: www.savealife.scot.



Facebook: <https://www.facebook.com/savealifescot>

Twitter: <https://twitter.com/savealifescot>

K - Knowledge and Awareness

It's important that a PAD's location is known so it can be used when responding to OHCA.

Knowledge – all PAD wall mountings and cabinets should be clearly marked. The current standard PAD location sign, launched in spring 2017, was developed by the Resuscitation Council (UK) and British Heart Foundation and is shown below (Figure 2), along with an optional accompanying PAD stepwise usage guide (Figure 3).

Figure 2

PAD
Location
Sign



Figure 3

PAD
Stepwise
Usage
Guide



Figure 4

Previous
PAD
Location
Sign



Suppliers may provide one or both signs. They can be downloaded from: <https://www.resus.org.uk/defibrillators/standard-sign-for-aeds/>. However, the previous PAD location sign (Figure 4) is still in widespread use.

Awareness – registering a PAD with the SAS at <http://pad.scottishambulance.com/> means that they can direct an OHCA bystander who calls 999 to it so it can be used before emergency services arrive. Registration contributes to the Strategy's aim of improving community readiness to respond to OHCA.

References and Links

All references and links were correct as at Autumn 2017. The Scottish Government is not responsible for the content of external websites. Reference 5 and two other extant guides^{7,8} provide additional information that may be useful.

¹ 'OHCA: A Strategy for Scotland', Scottish Government, October 2015:

<http://www.gov.scot/Resource/0047/00474154.pdf>

² 'Shockingly Easy: Three minutes to save a life', Edinburgh Evening News, 11 December 2014:

<http://www.edinburghnews.scotsman.com/news/shockingly-easy-three-minutes-to-save-a-life-1-3631485>

³ 'Shockingly Easy Campaign', London Ambulance Service, Unknown Date:

<https://www.londonambulance.nhs.uk/calling-999/emergency-heart-care/cardiac-arrest/shockingly-easy-campaign/>

⁴ Resuscitation Guidelines, Paediatric Basic Life Support, Resuscitation Council (UK), 2015: <https://www.resus.org.uk/resuscitation-guidelines/paediatric-basic-life-support/>

⁵ 'A Guide to AEDs', Resuscitation Council (UK)/British Heart Foundation, April 2017:

<https://www.resus.org.uk/publications/a-guide-to-aeds/>

⁶ 'How to use a defibrillator', British Heart Foundation Video, Unknown Date:

<https://www.bhf.org.uk/heart-health/how-to-save-a-life/defibrillators/how-to-use-a-defibrillator>

⁷ 'Automated External Defibrillators (AEDs) in Schools', Department for Education Guidance, 26 November 2014:

<https://www.gov.uk/government/publications/automated-external-defibrillators-aeds-in-schools>

⁸ 'Defibrillator Guidance Document', Scottish Borders Council, October 2016:

<https://www.scotborders.gov.uk/defibguidance>

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www.gov.scot

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