

The implementation of legislation in many countries around the world in regard to where to place AEDs, and how many, has led to the question in the UK of how many AEDs should we have in order to give a complete coverage, or reasonable coverage in different scenarios. There is no legal requirement in the UK to have an AED, apart from where the risk assessment identifies this need.

How to prepare



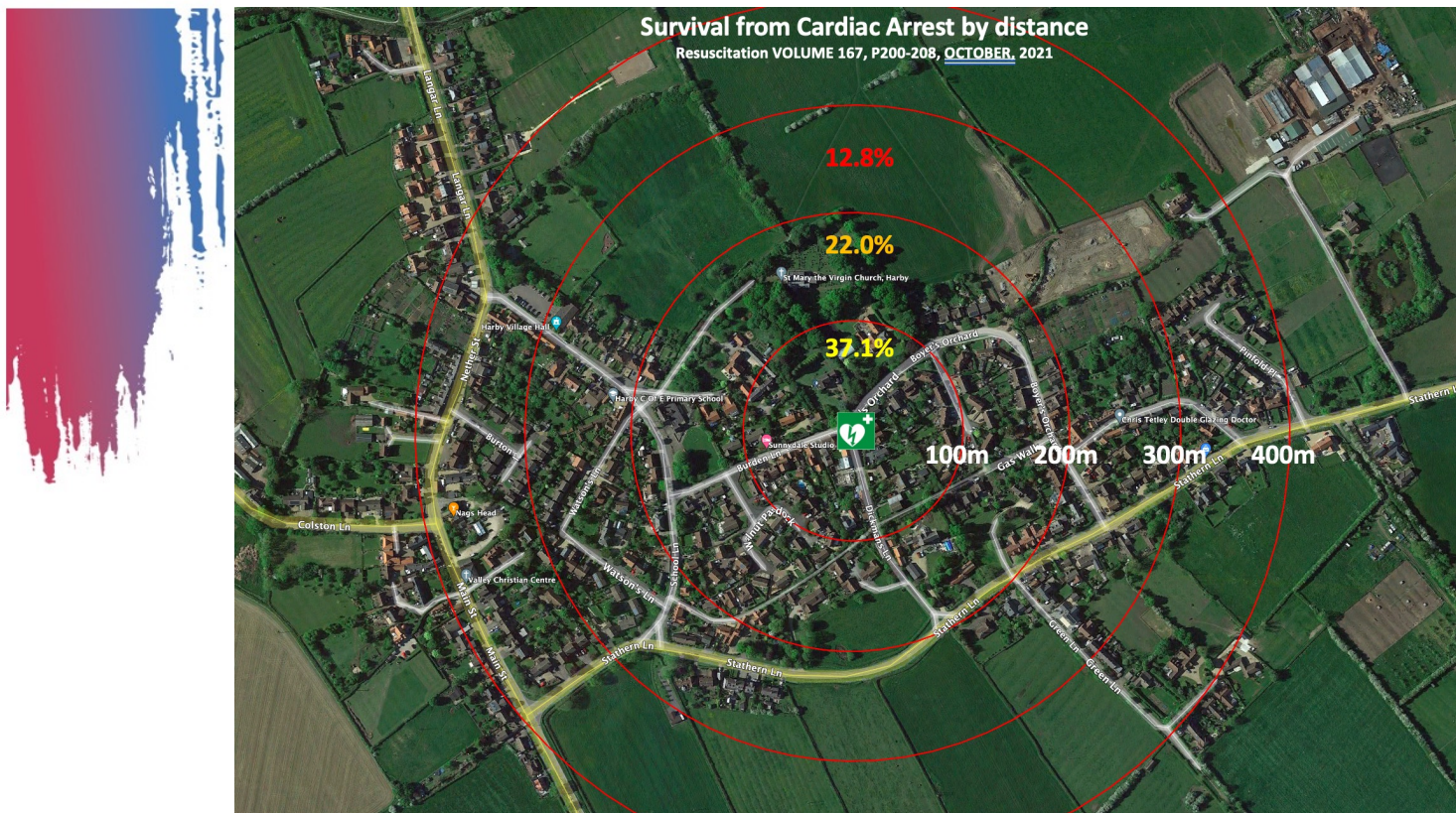
Australia, US and Germany

On 1st January 2025, a new law was enforced in South Australia to make the provision of defibrillators in public areas, compulsory, along with maintenance regimens and registration of the locations and operation. At the same time several states in the US implemented legislation to cover schools, sports facilities and public spaces. In Germany on 1st January 2027, new legislation will make compulsory the registration of AEDs and also that these must be 24/7 monitored to overcome the very large numbers of 'out of service' defibrillators in the public domain. France and Italy will also introduce similar legislation shortly. Whilst no such legislation exists or is planned in the UK currently, there are good practice guidance on the installation, registration and maintenance of defibrillators in the UK. The pending UK introduction of 'Martyn's Law' in May 2025 will impact the preparedness of venues for major incidents, including enhanced first aid provision, and thus guidance is necessary (see our Martyn's Law guide).

Public buildings and areas

A public building or facility is one which the public has access to (whether admission is payable or not). A building or facility can be considered accessible to the public if the public can freely access any part of the building or its surround, or facility such as the foyer, lobby, lift, toilet, coffee area (even if this area is small), car park. Public buildings or facilities can include:

- Swimming pools, gymnasia, sports clubs and other sports facilities
- Libraries and shopping precincts
- Local government offices
- Town or village halls, or similar community centres (200 or above potential capacity)
- A place of worship (church, mosque, temple, other - 200 or above potential capacity)
- A relevant building that has a floor area of 600m² or more.
- An enclosed or partially enclosed structure with floor area of 600m² or more used for sporting or recreational purposes and attended by the public.



Vehicles and travel

Use of AEDs installed in emergency service vehicles is generally limited only to the organisation's personnel (Fire, Police, Ambulance). Police have special requirements.

However, public transport such as trains, busses and aircraft (able to carry over 14 adults including the driver) should install AEDs in each vehicle, where the installation is clearly signposted and available to members of the public. So, for example on a train or aircraft, the location of the AED should be clearly marked and visible to all passengers. School buses carrying children are not considered a 'public bus'. Similarly, freight trains and freight aircraft that do not carry any passengers, other than the driver. Taxis and community busses, such a voluntary transport, it is up to the owners as to whether they consider the installation of an AED is beneficial. Some taxi companies and community bus services have AEDs installed as they attend emergencies if required.

Survival from Sudden Cardiac Arrest is time dependent, with the survivability decreasing by around 20% per minute post event in humans. However, distance from an AED to the incident also plays an important factor, with survivability decreasing by around half for every 100m from an AED.

Catastrophic arterial bleeding is also a serious event. Stabbings, whilst high profile in the media, are fairly rare with most catastrophic bleeds resulting from industrial, farming and riding accidents. Loss of blood from a catastrophic bleed can result in unconsciousness within 3 minutes and death within 5 minutes. Consideration should be made to have catastrophic bleed/trauma kits in areas of high risk.

Trauma kits can be co-located with AEDs, but not in the same cabinet to avoid confusion in a rescue. Neither should be locked. Locations should be easily accessible.



“Education is the most powerful weapon you can use to change the world”

– Nelson Mandela

Whilst anyone can save a life, even without training, Education is key to increasing survival rates.

Buildings

To determine if a building is considered a relevant building (600m² or more) you must calculate the sum of the entire building (regardless of what area is publicly accessible):

- The internal floor space within the exterior walls of a building, including rooms, stairs, toilets, lifts, lift shafts and columns.
- An external balcony, or rooftop terrace
- Is there floor area of more than 1200m² that is publicly accessible?

Publicly accessible floor area means the floor area of the part of the building or facility to which the public has unobstructed access while that part, or the building or facility, is open to the public. Unobstructed access to a building or facility, or part of a building or facility, includes access to the building or facility, or part of the building or facility, obtained by payment of a fee.

For example:

1) An office building that has a foyer which is accessible to the public, however entry past the foyer requires key card access, then only the foyer space would be considered publicly

accessible and if under 1,200 only one AED required. If foyer was more than 1,200m² then additional AED may be required i.e. 2,400 sqm – 2 AEDs required etc.

2) A hotel with accommodation and public restaurants – number of AEDs will be determined on the accumulative sqm of the publicly accessible spaces including foyer, corridors, restaurants, and other publicly accessible facilities i.e. day spa etc would exclude areas only accessible through key card access i.e. back of house and accommodation.

Publicly accessible floor area exceeding (m ²):	But less than (m ²):	Suggested number of AEDs required
600	2400	1
2400	3600	2
3600	4800	3
4800	6000	4
6000	7200	5
12000 +		10
100000 +		20

Local risk assessment may impact on these recommendations



How to select and AED suitable for the location

All AEDs used in the UK should have at least the UKCA approval, and preferably the EU-MDR as well. Currently, devices with only a CE mark are also available in the UK through legacy legislation, and more recently devices with no published clinical evidence have been allowed to be sold (although now withdrawn). Whilst all AEDs will talk you through what to do, many public access defibrillators also have visual screens now to comply with disability regulations. These should be chosen in preference if being used by untrained members of the public. The UK guidance on defibrillator functionality is that advised by the Resuscitation Council (RCUK) which states public access defibrillator should be a minimum 150Joule device, using a recognised BTE or Rectilinear waveform:

Ideally, every public access AED should also be equipped with:

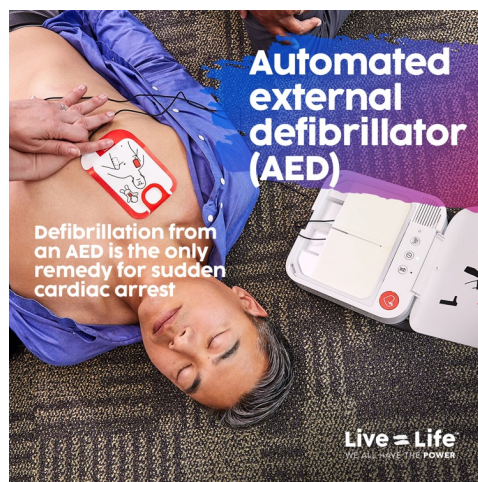
- two sets of defibrillation pads
- 2 sets of nitrile gloves
- Toughcut style safety scissors
- Towel or absorbent gauze



AEDs must be installed in a manner which enables immediate access, and ideally in unlocked cabinets or locations. If mounting externally, then it is advised to consider heated and monitored cabinets, but ensuring the heated cabinet does not in itself cause issues with the AED. For safety, all cabinets should be low voltage and not 240v. The AED should also be placed in accordance with disability guidance and should not be more than 1.3m from the ground to the handle of the AED or cabinet. Recognised international signage (eg ILCOR) should be used to identify the location, and also a minimum 2 additional directional signs to direct bystanders to the location.

The major manufactures providing services in the UK are below (2025).





Registration of defibrillators and PAcT kits

To ensure that the ambulance services are aware of the location of the nearest defibrillator equipment, these must be registered with them. Currently, the ambulance services in the UK have standardised on a system called 'Circuit', although other systems do exist, and some ambulance services continue to use all available resources and notifications. In general Trauma kits (also known as PAcT kits) in the UK do not have any centralised registration process, and in most cases, assuming they have been registered, the ambulance service do not send members of the public to trauma incidents. However, if the public are already present at the site of the trauma, they will be given advice on how to respond, and if a trauma kit is available and within 50m, then they may be asked to collect this, subject to not leaving the patient (ie a second person must be available). Note that all 999 calls in the UK can be taken by any ambulance service and so if not your local service, there is no record of any location of these trauma kits available to the alternative service.

UK Government guidance released in May 2022 recommends that all public and private sector businesses have a PAcT kit (trauma or bleed kit) as part of their first aid provision. They also recommend that additional training is undertaken with staff to ensure they know how to recognise and treat catastrophic bleeding. Similarly, additional public training should also be undertaken if there are bleed kits in the community, but also like defibrillators, *"PAcT First Aid Kits are designed to be used by ANY person, regardless of their level of first aid training and supports the first aid efforts until such time the emergency services arrive"*. PAcT kits should be in unlocked locations. The general recommendation from the NHS for a public access bleed kit content includes:

Disposable gloves (2 sets)

Tuff cut style scissors

Large trauma wound dressings

Triangular and gauze bandages

Easy to apply Tourniquet (eg RapidStop, SAM XT)

CPR face shield

Indelible marker pen

Instruction leaflet

Foil blanket

How can communities ensure adequate First Aid preparedness for incidents?

A major incident introduces unique difficulties that might not be apparent in other situations, potentially causing life-endangering injuries to people. Recent incidents of terrorism in the UK, for example, have shown that bystanders in the vicinity of such attacks are eager to assist, including by administering first aid to the injured – often resorting to makeshift solutions in the absence of readily available supplies to treat critical injuries.

There is no need to resort to having to use such solutions (such as using ties, scarves and belts for tourniquets) if risks are properly assessed and the right provisions are made available in the right way.

Having first aid provisions to treat major trauma and Cardiac Arrest readily to hand and clearly signposted (using internationally recognised signage styles) is a reasonably practicable and effective step for organisations to take in order to mitigate physical harm in the event of an emergency.

Remember, if a major incident:

- The arrival of emergency services might be delayed due to potential dangers, which could affect their ability to respond quickly
- The initial need for first aid can significantly strain emergency services and the broader healthcare system, especially when multiple injuries occur over a large area
- Although the severe nature of injuries in the incident might be similar to those in other emergencies, the additional threat from potential perpetrators necessitates more comprehensive planning for first aid
- There should also be an assumption that there will be more than one casualty



- First Aid needs assessment, which includes taking a risk-based approach
- Having an appropriate First Aid response plan
- Having adequate and appropriate First Aid provision with **internationally recognised** signage
- Training where required, and as many as possible

How can **Live is Life** help?

-  Campaigning and support
-  Independent needs assessment and help with planning
-  Correct equipment to address the risks associated with any assessment
-  Training and support services
-  Assistance with fund raising
-  Long term partner

The Live is Life Foundation charity,
Swadlincote, Derbyshire

Strategic Thinking in Resuscitation

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