



Your On-site AED Program

An Implementation Guide





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Every year in the United States, more than 356 000 people have a cardiac arrest outside of a hospital setting. Thousands of those people are at work when it happens to them.

Unfortunately, less than half of those who have a cardiac arrest outside of a hospital receive lifesaving help of any kind. And about 90% of them die.

When someone is in cardiac arrest, they need cardiopulmonary resuscitation (or CPR) immediately. Many also need an electric shock (called *defibrillation*) to restart their heart—and improve their chance of survival. Automated external defibrillators (AEDs) provide those shocks. Studies show that early CPR and AED use—whether by a medical professional or a bystander—can double or even triple a person’s chance of survival.

AED programs, like the one you are implementing, help reduce the time to defibrillation by placing AEDs in businesses and in public places and by training laypeople to use them.

Effective AED programs (sometimes called *public access defibrillation* or *PAD programs*) aim to ensure that a person who is in cardiac arrest receives a shock within 3 to 5 minutes after they collapse. To make this possible, AEDs need to be placed strategically throughout a workplace or a public space. This guide can help your organization implement an effective AED program.

The American Heart Association applauds your decision to help save lives.

Note: This guide is provided for your convenience. The American Heart Association does not recommend particular manufacturers’ products and cannot provide legal advice. It does, however, publish research and offer training relating to heart health.

Step 1: Check local requirements

Follow all of your state and local regulations for AED programs. Have legal counsel review your AED program. If appropriate, your risk management or safety team should also weigh in.



Liability

Laws can vary by state, county, or city. But they generally limit the liability of rescuers using AEDs and of others involved in an AED program. The Cardiac Survival Act of 2000 encourages the placement of AEDs in federal buildings and ensures federal liability protection for those who acquire or use an AED to save a life (read this report at www.congress.gov/congressional-report/106th-congress/house-report/634/1).

Good Samaritan protection

Please read the Good Samaritan Act and any other relevant statutes for your state and county.

State registration

You may have to apply to the state to create an AED program. Once it is set up, you may need to register with your state or local emergency medical services (EMS) organization.

Medical oversight and collaboration

Your state may require that a physician review or oversee your AED program. If so, consult with your state medical board or local EMS agency to identify an appropriate physician.

Step 2: Assess your organization's needs

Quantity

The chances of surviving a cardiac arrest fall fast for every minute that defibrillation is delayed. And the average EMS response time in the United States is 7 minutes.

So, to ensure that someone in cardiac arrest receives help ASAP, rescuers need to be able to reach an AED within a 3- to 5-minute round-trip walk from anywhere at the worksite. This means that it should take no more than 1½ to 2½ minutes to reach an AED and 1½ to 2½ minutes to return to the emergency site.

Map out your site to decide how many AEDs you need to achieve this spacing to the best of your ability. Be sure to account for obstacles that could affect response time. Obstacles can include



- Crowded spaces where people might get in a rescuer's way (lobbies, cafeterias)
- Elevators, escalators, stairs
- Office furniture, cubicle walls, displays
- Locked doors

Cost

Most AEDs cost from \$1200 to nearly \$3000 each. Buy enough AEDs so that one is always no more than a 3- to 5-minute round-trip walk away. If that isn't possible right away, you can add more later, as your budget allows. Also budget for replacing expired AED pads and batteries.

Depending on the AEDs you choose and where you will place them, you also may need to buy dedicated cabinets or boxes.

To help employees become familiar with AEDs, consider also buying an AED trainer. They give hands-on experience that boosts confidence for using a real AED in an emergency.

Durability

All AEDs that the US Food and Drug Administration (FDA) approves must meet certain standards. Each FDA-approved AED is given a 2-digit IP (*ingress protection*) rating. The first digit (0-6) tells you how well the AED is protected from dust or other solids getting inside. The second digit (0-9) indicates moisture protection. Higher digits mean greater protection from dust and water.

How sturdy your AEDs need to be depends on

- Whether they might be used both indoors and outdoors (for example, in parking lots or sports fields)
- Whether they will be carried in a vehicle (for example, to off-site work events)
- Whether they will be exposed to extreme weather conditions or temperature changes

Size and storage

AEDs come in various sizes and weights, but most are relatively compact. Where you place them (for example, at a reception desk, on a shelf in a conference room, in a dedicated cabinet that hangs on the wall) could affect how you install them, how portable they are, and who will be able to use them.

Features

AEDs offer a range of features. Among the options to consider when weighing your organization's specific needs are

- Wi-Fi capability
- Child features (child pads vs a switch for giving a shock that is appropriate for a child)
- Bilingual AEDs (English and Spanish)
- Real-time feedback on CPR quality
- Tracking software (to help you maintain your AEDs)



Step 3: Research the AED market

Ask local EMS for suggestions. Then, compare models online to find the one that best meets your needs. Also make sure that the AED has been approved by the FDA and is simple and easy to use (see the list of FDA-approved devices here: www.fda.gov/medical-devices/cardiovascular-devices/automated-external-defibrillators-aeds#approved). Ask the manufacturer for either an on-site demonstration or a test model to try out.

Be sure that the manufacturer offers reliable, easy-to-access technical support.

Other things to check:

- Storage: Is there room in the AED cabinet for additional supplies (extra pads, pocket masks, scissors)?
- How much maintenance is required
- The shelf life of the pads and batteries
- What support the manufacturer offers for registration, AED placement, training, and supplies
- How quickly the manufacturer can send replacement components

A number of AED models on the market are suitable for company or public access use. The American Heart Association does not recommend one device over another—only that it be FDA approved.

Step 4: Buy the AEDs and other supplies

When you buy your AEDs, purchase extra pads. Each set of pads is good for 1 use only and must then be replaced. Also buy enough extra pads to have 2 sets with each AED (one set to remove chest hair, if needed, and one set to apply to the patient's chest and connect to the AED).

If your AEDs use disposable batteries, always have fresh backups on hand.

Additional items to include with your AED are pocket masks and 1-way valves to protect rescuers; razors to shave hairy chests; and scissors to cut off clothing, such as bras. It's also a good idea to have first aid kits available.



Step 5: Register your AEDs

Be sure to register your AEDs with the following:

- The state or local EMS, if required
- The manufacturer, to receive news of updates and recalls

Store registration information where more than 1 current staff member can find it. Also store it in your organization's safety emergency plan.

Step 6: Place and post

Activate and install your AEDs

Important: Before you install your AEDs, remove each one from its box and insert the batteries. Follow the manufacturer's instructions to activate and test each unit.

Good indoor locations include

- Near elevators and in main hallways
- Near assembly lines
- In auditoriums, cafeterias, employee gyms, and reception areas

As you choose locations, keep in mind any obstacles from Step 2. And make sure your AEDs are both visible and accessible. This means that

- Their placement meets Americans With Disabilities Act guidelines (you can find these guidelines at www.ada.gov).
- They are not locked up in a cabinet, security office, or nurse's office. Locking up an AED might significantly delay its use in an emergency. It may reassure you to know that AEDs are rarely stolen.

Post signs

Label every unit clearly as an AED (rather than only as a defibrillator). The International Liaison Committee on Resuscitation, a group made up of leading resuscitation organizations around the world, suggests the following:



- Beside each device, post an "AED" sign that can be seen from at least 200 meters away (approximately 655 feet).
 - Use lettering that's at least 12 centimeters high (approximately 5 inches) so that it can be read from at least 50 meters away (approximately 165 feet).
- Also post signs that indicate the direction and distance to an AED.
- Illuminate AEDs at night.
- For AEDs that are outdoors, add supplemental lighting.
- Inspect AED signs at least once a year.
- Maintain your signs.

Provide necessary supplies

At all times, each AED storage box should have

- Two sets of unexpired adult pads (so rescuers can use one set to remove hair from someone's chest, if needed)
- Child pads (if your AEDs do not have a child shock feature, and depending on your workplace needs; *note:* if children are rarely or never present, you may not need child pads)
- Pocket masks and 1-way valves (to protect rescuers)
- Scissors (for cutting off clothing)

If space allows, the following supplies are also helpful for providing CPR and using an AED:

- A razor (for shaving hairy chests)
- A first aid kit

Step 7: Manage your program

Recruit a team to set and manage AED policies and procedures. Make this a part of your organization's emergency response plan so that all staff are prepared for an emergency. Assign specific liaisons to

- Set up training sessions
- Perform monthly AED checks
- Order new supplies
- Maintain all AED records (prescription, warranties, maintenance schedules)
- Check the FDA database for AED recalls (this database is available at www.accessdata.fda.gov/scripts/cdrh/cfdocs/cfRES/res.cfm)
- Work with local EMS, if needed

Step 8: Train employees

AEDs are simple enough for anyone to use. Most give prompts when you turn them on. But specific AED training can enable people to recognize—and quickly respond to—someone who is having a cardiac arrest emergency. And that, in turn, can improve their chance of surviving.

Training is also important because

- People need to know how to use their company's specific AED
- It builds confidence for taking action in a real emergency

The American Heart Association recommends that everyone learn what to do if they encounter someone who is unresponsive. At the very least, your AED program training should cover how—and whom—to call for help. But it's best to provide full CPR and AED training. The American Heart Association offers both classroom and eLearning CPR and AED training.

Train enough people so that someone is always available to respond to a cardiac arrest emergency. Remember: you can never have too many trained responders.

Learn more about training your workforce with Heartsaver® First Aid CPR AED by visiting heart.org/workforcetraining.

Build confidence

To help people feel confident enough to help save a life, AED training should include

- Time for every person to examine the AEDs and to practice
- AED training video screenings for everyone (most manufacturers have a video)
- Training for new staff
- Annual refresher training



Consider promoting your program every year during these 2 annual events: National CPR and AED Awareness Week (June 1 through June 7) and World Restart a Heart Day (October 16).

Step 9: Raise awareness

Publicize internally

Use company newsletters, posters, and social networking sites to let everyone know where all the AEDs are and when the company will be offering training. Encourage everyone to sign up for CPR and AED training.

Involve everyone

Encourage all employees to regularly glance at the AEDs. Does the status indicator light show that the AED is ready for use? Does anything seem wrong? Things to report may include damaged or missing units, a blinking red light, or a chirping sound.

Remind employees regularly

Periodically remind staff that AEDs are available. To make sure everyone knows where the AEDs are located, add some fun. For example:

- Plan a search-and-find activity
- Invite everyone to post a selfie with one of the company's AEDs

Step 10: Maintain your AEDs

Maintaining your AEDs according to the manufacturer's instructions is a critical part of your AED purchase because only a working AED can help save a life.

So, appoint individuals or teams to

- Inspect every AED regularly
- Restock AED and first aid kit supplies
- Arrange for maintenance when needed
- Check with the manufacturer for software updates, upgrades, or recalls

Inspecting and maintaining the AEDs is a key responsibility. If your AED's manufacturer provides a checklist, use it. Otherwise, you should create your own checklist.



AED pad care is crucial

AED electrode pads have a water-based gel on them that helps them stick to skin and conduct electricity. Over time, this gel can dry out. If that happens, the pads will not work—and a life could be lost.

To be sure your AED pads are always ready and working:

- Don't open the pad packaging until you need to use the AED in an emergency.
- Replace used pads immediately. Pads are good for only 1 use.
- Check pad expiration dates regularly.
- Replace pads shortly before they expire.
- Be aware that pads exposed to extreme temperatures or temperature changes may degrade more rapidly.

Remember: Only a working AED can help save a life.



Glossary

Term	Definition
Automated external defibrillator (AED)	<i>Automated</i> means that the devices independently analyze a person's cardiac rhythm. They are <i>external</i> because the AED's electrode pads are placed on the outside of the patient's chest. <i>Defibrillator</i> means that the AED uses electricity to change an abnormal heart rhythm (fibrillation) back to a normal rhythm.
Cardiac arrest	The heart malfunctions and stops beating. Without help (CPR and, if needed, defibrillation), a person in cardiac arrest will die within minutes.
Cardiopulmonary resuscitation (CPR)	A lifesaving emergency procedure for someone who has signs of cardiac arrest (ie, unresponsive, no normal breathing, and no pulse). The 2 key components of CPR are chest compressions and breaths.
Defibrillation	A process in which an electronic device (either a defibrillator in the hospital or an AED outside of the hospital) gives an electric shock to the heart
Electrode pads	Pads that are placed on the bare chest of someone who is in cardiac arrest and then attached to an AED. The pads are coated with a water-based gel that helps them stick to the skin and conduct electricity.
Public access defibrillation (PAD)	When members of the community use AEDs that have been placed in high-traffic public places—such as casinos, gyms, sports complexes, airports, and shopping malls—to provide defibrillation for someone who is in cardiac arrest

Learn more about AEDs at
cpr.heart.org/en/training-programs/aed-implementation.

For more information about American Heart Association
lifesaving courses and programs, visit **cpr.heart.org**.

Learn more about training your workforce at **heart.org/workforcetraining**.



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