LFA
FIRST RESPONSE

A GUIDE TO

# DEFIBRILLATORS

## HOW YOU CAN SAVE A LIFE

A **Sudden Cardiac Arrest (SCA)** can happen to anyone, anywhere, at anytime. Read **our** guide to ensure you're prepared.

A GUIDE TO

# DEFIBRILLATORS

## HOW YOU CAN SAVE A LIFE

### Contents



LFA FIRST RESPONSE

Call us on 1800 681 544 or visit www.lfafirstresponse.com.au

## Every year more than seven million people globally suffer from a **Sudden Cardiac Arrest (SCA)** with no warning. And only five to 10% of those affected actually survive.

Read on to discover how you can make a difference for your colleagues, customers and the wider public and save a life by using defibrillation.

In this guide you'll learn:

- Sudden Cardiac Arrest stats and facts
- How a defibrillator can help
- How to effectively use a defibrillator
- Who should have a defibrillator
- Maintenance requirements for a defibrillator
- Key considerations when purchasing a defibrillator

# SUDDEN CARDIAC ARREST:
# WHAT YOU NEED TO KNOW

## WHAT IS IT?

Sudden Cardiac Arrest (SCA) is when the heart enters a chaotic rhythm. It usually results from a disturbance in your heart that disrupts its pumping action, stopping the blood flow to the rest of your body.

It's a medical emergency that if not treated immediately, can cause Sudden Cardiac Death.

For example, here's what a "normal" heartbeat looks like:

Normal Sinus Rythm

And here's what happens to the heart when it experiences an Sudden Cardiac Arrest:

V.F. (Ventricular Fibrillation)

## HOW CAN YOU TELL IF SOMEONE IS EXPERIENCING AN SCA?

The symptoms of an SCA are immediate and include:

- Sudden collapse
- No pulse
- No breathing
- Loss of consciousness

And, it occurs with no warning.

## WHO CAN SUFFER FROM AN SCA?

Anyone, anywhere at anytime can be affected by an SCA.

However, there are risks that can increase the likelihood of them occurring.

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Find out which defibrillator is best for you

### THIS INCLUDES:

- Having a family history of coronary artery disease or another form of heart disease / heart problems
- Smoking
- High blood pressure and cholesterol
- Obesity and diabetes
- Having a predominantly sedentary lifestyle
- Drinking too much alcohol
- Age – SCA likelihood increases with age
- Being male – men are two to three times more likely to suffer from an SCA than women
- Having had a heart attack before
- Using illegal drugs
- Nutritional imbalance such as low potassium or magnesium levels

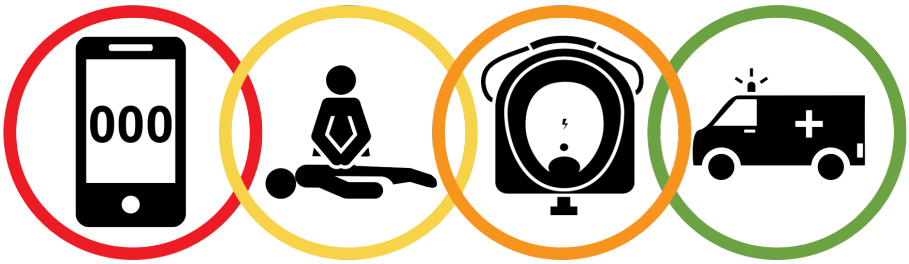
### HOW SERIOUS ARE THEY?

- Worldwide, seven million people are impacted annually
- More than 25000 per year in Australia suffer from an SCA out of hospital, every year (Heart Foundation)
- Only five to 10% of people currently survive an SCA
- 84% of SCA events occur outside of a healthcare setting
- The average response time for emergency services is around eight to 10 minutes, and every minute that passes without defibrillation reduces survival rate by seven to 10%

Automated External Defibrillators (AEDs) can increase the survival rates for an SCA up to

**75%**

## CHAIN OF SURVIVAL




There are varied defibrillator manufacturers, but we recommend devices that provide the best possible outcome when responding to a cardiac arrest. In addition, we believe that the devices selected should contribute to the best possible quality of life post Sudden Cardiac Arrest (SCA).

The chain of survival is an internationally recognised process. If each link in the chain is completed to a high standard, the patient has the greatest chance of survival. We support AEDs which contribute to more than one area in the chain of survival.

## WHAT IS A DEFIBRILLATOR?

According to the Heart Foundation a defibrillator is:

> "...a device that gives a high energy electric shock to the heart through the chest wall to someone who is in cardiac arrest."

The "shock" is called defibrillation, and it's a lifesaving step in the chain of survival.

Definition of defibrillation in English:

**defibrillation** de · fib · ril · la · tion

**noun**

[mass noun]

Medicine

1. The stopping of fibrillation of the heart by administering a controlled electric shock, to allow restoration of the normal rhythm.

Source: Oxford Dictionaries

## WHY IS CPR SO IMPORTANT?

The most frequent heart rhythm witnessed during an SCA is ventricular fibrillation (VF), and the only treatment to overcome this is defibrillation.

For every minute that passes between collapse and defibrillation, survival rates from a VF SCA decrease from seven to 10%.

However, when early and effective bystander CPR is provided, survival rates can double or triple.

This highlights the importance of fast defibrillation coupled with effective CPR as key links in the chain of survival for SCA sufferers.

We supply devices that deliver real-time verbal and visual feedback or CPR coaching to the rescuer to help improve CPR techniques.

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Find out which defibrillator is best for you

We have partnered with Aero Healthcare, a national AED supplier for over a decade in Australia, who are industry-leaders in both customer service and product support. Our manufacturers introduced the world's first mobile defibrillators in the 1960s to make defibrillation accessible to everyone.


## WHAT MAKES OUR DEFIBRILLATORS DIFFERENT?

- They offer the **quickest time to shock** – at just eight seconds. Every second counts as the chance of survival reduces by 10% per minute
- They have the **highest IP rating** of IP56 – which means it is protected against dust and water and therefore suitable for use in almost any environment.
- They use patented shock delivery technology - this delivers a **more effective shock** at lower energy levels reducing risk of heart damage and improving patient recovery time.
- They can shock someone with a chest impedance of 10-300 ohms - which is greater than other defibrillators available - therefore **can shock in more cases** resulting in more lives saved.
- They have a simple **one-button operation,** and voice and visual prompts for users, making them exceptionally easy to use by untrained and minimally trained rescuers.
- They can connect to **remote monitoring systems** making management of large fleets simple and cost effective.
- They have **patented CPR feedback** technology which provides the user voice guidance ensuring their chest compressions reach adequate Depth and Rate (see page 21)

**CONTACT US NOW**

Find out which defibrillator is best for you

# HOW DO YOU USE A DEFIBRILLATOR?

**If you come across someone who is unconscious and not breathing, do not waste time. International resuscitation councils recommend that you assume it is an SCA and act quickly.**

And, contrary to what people think, automatic external defibrillators can be used by anyone – no matter how old you are or whether you've even touched a defibrillator before, as they are designed for use by untrained and minimally trained users not just for healthcare professionals.

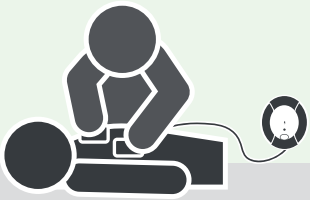
1

Call 000 and ask for an ambulance for support.

2

Find out if there is a defibrillator nearby, and use it – or send someone else if available.

3



Start CPR.

CPR stands for cardiopulmonary resuscitation and it's a lifesaving procedure that you give to someone who is not breathing spontaneously. It helps to pump blood around the person's body when their heart can't.

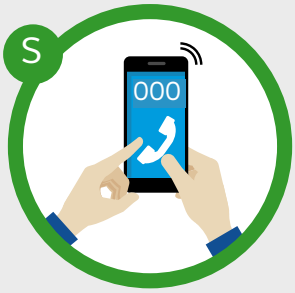
In addition, it can help to establish a shockable rhythm, helps prevent brain damage and limits cardiac and vital organ damage, whilst significantly increasing the chance of survival when a shock alone is not enough.

To perform CPR we recommend following these seven steps, as per the ANZCOR* guidelines:

# D R S A B C D


Check surroundings for **Dangers**


Check for a **Response** from the patient



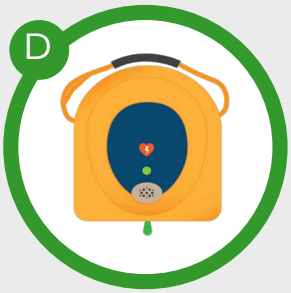

**Send** for help, dial 000


Check if **Airways** are obstructed


Check for **Breathing**


Start **CPR**,

30 compressions : 2 breaths




Attach a **Defibrillator** and follow the prompts

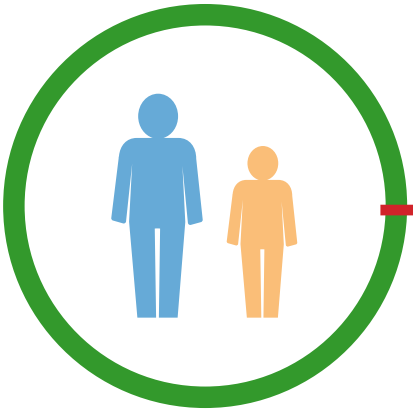
*Australian & New Zealand Committee On Resuscuitation

Defibrillators are very easy to use as the machines we recommend will give you clear spoken and visual instruction and you don't necessarily need any training on how to use one beforehand.

For example the HeartSine Samaritan PAD is a completely self-contained unit with no lid to open, or complex displays or controls. Its single button operation and voice/visual prompts with clear instructions guide the user through every step, including electrode pad application, shock delivery and CPR.

Advanced technology balanced against the demands of real-world use. Our innovation changes lives. And saves lives.

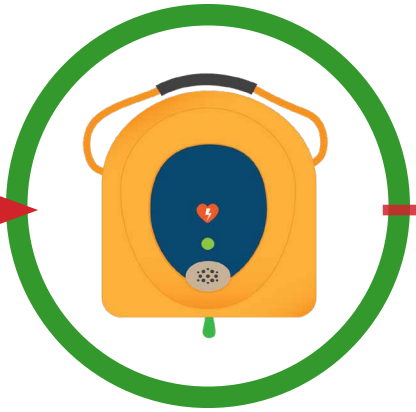
# USING A DEFIBRILLATOR



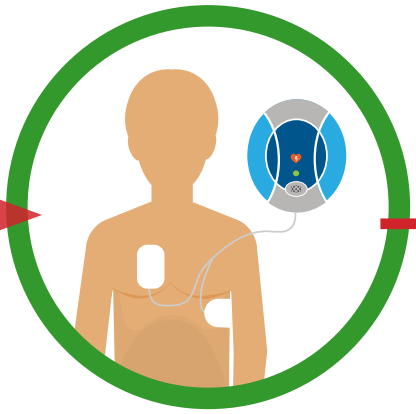
- Adult Patient or Child Patient
  - this determines which electrodes are inserted into the device.

If Child electrodes are not available the guidelines set out by the Resus Council is that Adult electrodes should be used.


- Call for Medical Assistance.
- Remove clothing from patient's chest to expose bare skin.



- Open and apply electrodes to patient's bare chest.



- Press electrodes firmly to patient's bare skin.
- If shock is advised the defibrillator instruct the user to press the shock button
- A fully automatic defibrillator delivers a shock without further intervention following a warning.

- You will then be prompted to carry out CPR.
- When two minutes of chest compressions have been completed the defibrillator will prompt you to stop chest compressions;

- The defibrillator will again access the patient's heart rhythm;
- Sometimes no shock is needed in a lifesaving situation, the defibrillator will advise you on this; and will advise you to continue CPR.

**DID YOU KNOW?**

**13%** of workplace fatalities are from Sudden Cardiac Arrest*

## WHO SHOULD HAVE A DEFIBRILLATOR

While not a legal requirement in Australia, it is recommended that the installation and use of AEDs should at least be considered by all workplaces. In order to plan first aid requirements for your facility, you must assess your facility, (machinery, equipment and manual tasks) which will provide a tailored approach to first aid.

In 2017 the Facilities Management Journal reported that a survey revealed that **52% of businesses** have never considered buying, or have bought, a defibrillator.

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In its most recent guidelines[+] the Resuscitation Council said it "strongly suggests a policy of early attempted defibrillation" and it pointed out that with every minute of delay of defibrillation, the chances of survival diminish by **10%**, and after 10 minutes, the chances of survival are almost zero.

* Occupational Safety and Health Administration, U.S. Department of Labor. | [+] Released in 2015

## EVALUATE YOUR RISKS

It's essential to consider the risks to your workforce and anyone else that visits your premises, to determine whether you should have a defibrillator on site.

Factors that increase the risk of an SCA:

- **An ageing workforce.** Whilst anyone at any age can be struck down by an SCA, the likelihood of one occurring increases with age. Ask yourself "how many people are over the age of 45?" – this can be particularly relevant for industrial or construction environments.
- **Urban locations –** which make it difficult for emergency responders to reach due to traffic, staircases, escalators and crowds of people.
- **Remote locations –** which may result in longer response times by emergency medical services.

We'd recommend considering:

- The likelihood of harm – this will depend on who uses the facility / business.
- How likely they are to have a cardiac arrest.
- The severity of the potential harm.
- The vulnerability of potential victims – this depends on the circumstances and the type of people in your business / who visit your premises.
- The damage to your organisation. This could be to your brand reputation, to employment and recruitment, and to your overall profits.

### TOP TIP

We recommend that defibrillators are as accessible as possible. This should be a max 90-second brisk walk from any employee.

## WHERE SHOULD THEY BE LOCATED?

In short, defibrillators should be available in just about every location imaginable, as you never know when someone is about to be struck by an SCA. Remember, it can happen to anyone, anywhere, at anytime.

Defibrillators should be treated in the same way as fire extinguishers, so they should not be locked away in a cupboard, and should be easily accessible to everyone - when you have one on your business premises.

If you don't have a defibrillator, install one of the many AED location apps available to end users. A great example is the GoodSAM app which is active in Victoria. Being familiar with the locations of nearby AEDs will help you easily find an available AED in the event of an emergency.

For industries that have remote workers – such as offshore, windfarms and transport – public defibrillators will not be easily accessible, making the business case for a defibrillator very strong.

In addition, businesses that operate in the hospitality sector – such as restaurants and hotels – can occupy very large premises. It can therefore be difficult to get access to your nearest public AED if you're in a high rise building.

So, by investing in a defibrillator or multiple defibrillators (depending on your business set-up), you'll have complete confidence that your employees and customers will have easy access to life-saving devices in times of emergency.

# HOW DO YOU LOOK AFTER A DEFIBRILLATOR?

Many people are unaware that whilst they are technologically advanced and simple to maintain, defibrillators still need to be monitored to ensure they are fully functional and can work effectively when needed.

Our defibrillators come with built-in technology that will give users warning signs of any issues, and we recommend organisations to check their devices weekly.

So what do you need to be aware of when maintaining your defibrillator?

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## DEFIBRILLATOR MAINTENANCE REQUIREMENTS

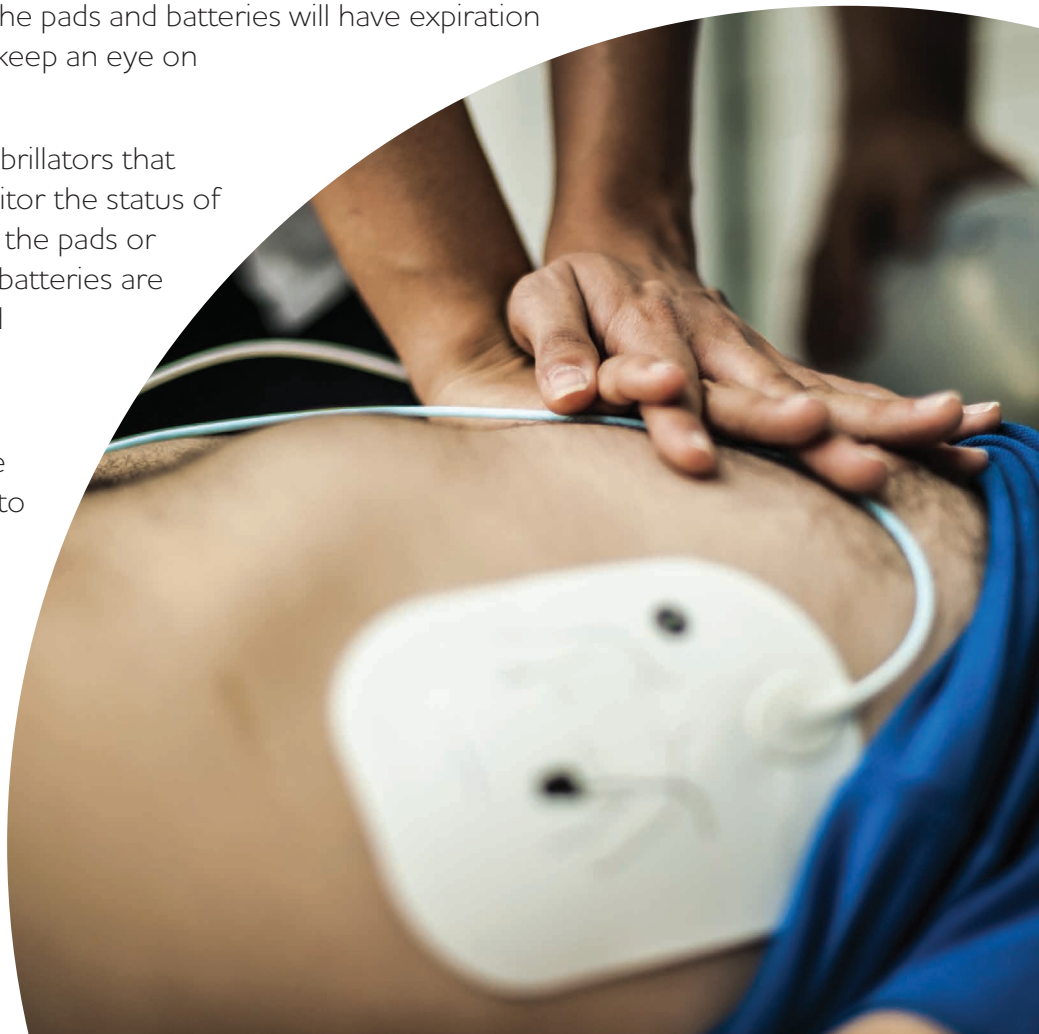
### Expiration dates

The batteries and pads in your defibrillator are the key functions that send the shock to the person suffering from an SCA. The pads connect the device to the patient and the battery provides the power to deliver the defibrillation shock.

Pads are single-use, and both the pads and batteries will have expiration dates, so it's essential that you keep an eye on when they'll need replacing.

We supply fully-connected defibrillators that features software that will monitor the status of your device, and will highlight if the pads or batteries need changing, if the batteries are fully charged, and if it is in good working order.

This benefits businesses that have multiple sites, and multiple defibrillators - as they are able to get an overview of the status of all the devices quickly and efficiently.



## CONNECTED DEFIBRILLATOR BENEFITS

- Connected via Wi-Fi or a cellular network.
- All information accessed via an online dashboard.
- Remotely monitor readiness information.
- Locate on a map and detect location changes.
- Receive alerts of any situation affecting readiness such as battery status.
- Be alerted when an AED has been used.
- Send SCA event data via Wi-Fi to emergency responders.
- Automatically send event data and reports to hospital and medical caregivers.
- Get notifications if batteries or electrodes are expiring.
- Eliminates manual checks and risks of human error.
- Helps you save time and money on device management.

### Storage

Your defibrillator should be easily accessible to everyone that may enter your premises, and in a location that is not obstructed.

There are a wide variety of storage options available, and we offer a number of alternatives to meet your exact requirements.

This includes:

- Wall brackets
- Internal wall cabinets
- External wall cabinets
- Monitored cabinets
- Backpacks

**TOP TIP**

When deciding on which storage option to choose, consider the environment that your defibrillator will be in.

For remote workers that have to travel a lot a mobile device in an easy-to-carry and move bag may be most appropriate. For construction workers the storage will need to be robust and protect the device from dust and water, so a sturdier, hard, protective storage solution would be most effective, and for environments such as a managed office or a hotel, a bracket fitted to a wall could be most suitable.

## CONSIDERATIONS FOR THE HOT WEATHER

Australian summers are notorious for their peak temperatures. High temperatures can affect any AED and could possibly lead to faults.



To keep your device safe,

we'd recommend following our four key tips:

1. During extreme heat conditions it is suggested that your AED is stored indoors in an air-conditioned environment if possible

2. If your defibrillator is installed outside, ensure that it is kept out of direct sunlight if possible

3. If the defibrillator is required to be in a location which places it in direct sunlight, it is wise to look into investing in an outdoor cabinet which provides a cooling system. These are available for purchase.

4. Whilst the temperatures are high, it might be wise to check the status indicator of the AED to ensure the device is ready for use for the duration of extreme weather.

# KEY CONSIDERATIONS WHEN PURCHASING A DEFIBRILLATOR

So, you now understand the importance of defibrillation, and the need for a device in your business, but you need to convince your board of directors.

We can work with you to put your business case together, sharing details about the benefits of having a defibrillator on site and how they can mean the difference between life and death, and we can even help you present your case to your wider team to gain buy-in.

But now comes the tricky part – which defibrillator should you choose?

There are many alternatives available on the market, so it's essential that you choose wisely, and the device you select meets all your specific needs and requirements. As it's important to remember that they are not all the same, and device performance and clinical efficacy vary considerably. We'd recommend considering the following:

## DEFIBRILLATOR CHECKLIST

1. Does the defibrillator supplier offer training, and if so is this easily accessible to your employees? ☑
2. Where will it be located and how will it be stored? ☑
3. How will it be monitored and maintained? Does the device offer remote monitoring? ☑
   This is important as it allows you to access the status of multiple units across various sites.
4. What's your employee demographics - and can the defibrillator "shock" everyone that is likely to be at your premises? ☑
5. How easy is it to operate? ☑
6. Does it come in different languages, do you need a second language? ☑
7. Does it come with minimum 8 years manufacturer's warranty? ☑
8. What is the IP rating of the device? ☑
   This measures the machine's tolerance to dust and moisture. Ensure you look for products that have an IP rating of 55 or above and that they are tested to Military Standard 810F.
9. Does it offer CPR feedback? ☑
   This is a feature that talks to the defibrillator user and tells them how to perform CPR and offers user feedback. (see page 21)
10. What is the device's battery and electrode pad life? ☑
    This is how long the battery and pads will be in "date" for, whether they are used or not.
11. How will you pay for the defibrillator – does the supplier offer finance options? ☑

## ABOUT OUR DEFIBRILLATORS

As a registered distributor for HeartSine and Lifepak defibrillators, below are our four key models.


### The PAD 500P

A semi-automatic defibrillator that is operated by using two buttons. It features clear and simple voice prompts for users, and visual prompts to assist the rescuer in noisy or multi-lingual environments. In addition, the 500P features unique patient specific CPR feedback which instructs the user to push harder, faster, slower or reassures you that you're doing it right.


### The PAD 350P/360P

A semi-automatic or fully automatic defibrillator that is operated by using two buttons. In addition, it provides audio prompts to users and metronome for CPR timing, and features visual representations of how to use the device.


### The Gateway

The Gateway enables ANY Samaritan AED to be connected to a local WiFi network. Simply attach the Gateway, or purchase one with an AED, and your device can be monitored online ensuring your AED is rescue ready at all times!


### The LifePak CR2

A fully-connected defibrillator that has a built in WiFi-enabled response system. It allows you to track the readiness of the device – such as the battery, pad power and location – automatically and from a remote location. It also offers audio prompts which can be set to two different languages.

## CPR ADVISOR

The HeartSine Samaritan 500P provides clear voice prompts, ensuring that the rescuer knows what to do at all times. The 500P will also monitor you chest compressions and will tell you if you need to push harder faster or slower. This means that you can be guaranteed that you will be performing High Quality CPR at all times.

During CPR, if rhythm slows due to fatigue, or is too fast, the Samaritan 500P will prompt **"Push Faster"** or **"Push Slower"**.

Chest compressions need to reach a depth equal to 1/3 of the patient's chest (As per ANZCOR guidelines). If depth is not adequate, the 500P will prompt **"Push Harder"** ensuring enough oxygen reaches the brain and vital organs, dramatically increasing the chances of survival.

If the rhythm and depth of compressions are adequate, the 500P will reassure the rescuer with **"Good Compressions"**. This has been proven to be invaluable in a stressful situation to provide the rescuer with confidence and reassurance.

### Voice Prompts simulating a Real Scenario

"Call for Medical Assistance. Remove clothing from patient's chest to expose bare skin"

"Shock Advised, stand clear of patient, press the orange shock button now"
"Shock delivered."

"Begin CPR, it is safe to touch the patient. Place overlapping hands in middle of chest, press directly down on the chest in time with metronome."

"beep-beep-beep..." (metronome continues throughout the whole CPR process to guide you on your rhythm)

**?**

**DID YOU KNOW**

the HeartSine 500P is the **ONLY** AED which provides CPR feedback based on assessment of the patient

### Importance of CPR

Our heart pumps blood around our bodies. Blood carries oxygen to the brain and other vital organs. In a cardiac arrest the heart ceases to pump blood around the body. To maintain oxygen to the brain, you need to maintain artifical blood circulation by performing good quality chest compressions. Unless you can perform good quality CPR, the succesfull outcome will be severely compromised.

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In addition to the specific features of each device, they also feature:

- A data port for downloading patient data.
- A self-test and indicator function that flashes "green" to confirm it is in working order, and will turn "red" and give an audible beep if there is an issue.
- A unique PAD-PAK, which is a combined unit of battery and electrodes that only needs to be replaced every four years or following an attempted save. This can be changed in fewer than five seconds, when required.
- The highest industry IP rating of IP56 which relates to protected against dust and water.
- The fastest time to first shock delivery – just eight seconds.
- A wider impedance operating range, when compared to other alternatives, as they can deliver a shock to victims with a chest impedance in the range of 10 -300 ohms.
- Patented "SCOPE" (Self Compensating Output Pulse Envelope) technology which is an escalating and low-energy waveform that automatically adjusts for patient impedance.

## And...

..the machines come with an eight year warranty, the longest manufacturer's warranty available on the market. Our distributors also offer tailored training sessions, which can either be in person or online, depending on your requirements.

# WILL YOU HELP TO SAVE A LIFE?

See what some customers have said about our defibrillators:

> "I used your HeartSine® samaritan® PAD500P defibrillator to save a contractor, one month after making the decision to install one. It was fantastic, especially the CPR technology."

**Supervisor**, Logistics Company

> "I used your HeartSine® samaritan® PAD500P defibrillator on a gym member who had cardiac arrest. It was fantastic, and we saved the members life"

Fitness Centre Owner

Every year more than seven million people suffer from a Sudden Cardiac Arrest (SCA) globally with no warning. And only five to 10% of those affected actually survive.

But by using a defibrillator you can increase the chance of someone surviving from 6% to **74%**.


Call us on 1800 681 544 or visit www.lfafirstresponse.com.au

For more information about our range of defibrillators and how you could benefit, simply get in touch with a member of our team.