



Royal Flying Doctor Service
CENTRAL OPERATIONS

Automatic External Defibrillator (AED) Community Information & Reference Kit

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Contents >

Introduction: AED & Medical Chests	3
Frequently Asked Questions	4
Installation/Placement of AED.....	6
Sudden Cardiac Arrest Symptoms and Signs	7
Using the AED	8
After Use of the AED.....	10
Maintenance Checklist	12
Monthly Checklist	14
Accessories	20
Contact Information	24

Introduction: AED & Medical Chests >

The Royal Flying Doctor Service (RFDS) Medical Chest has evolved over many years to provide pharmaceutical management for medical conditions, not just emergencies, which would be otherwise difficult for people living and working in remote areas to treat.

With requests from the remote community, RFDS has determined the benefit of co-locating Automatic External Defibrillators (AEDs) with each RFDS Medical Chest as these will potentially save lives by enhancing survivability rates for persons suffering cardiac arrest.

Please refer to the Medical Chest Handbook/Guidelines for further information regarding your RFDS Medical Chest.

It is intended that this additional handbook will support each AED host site to ensure the AED is properly maintained and available when necessary. A valuable tool for saving lives through increased accessibility to AEDs in the outback.

In an emergency, the 1800 RFDS SA (1800 733 772) call can provide contact with the rostered RFDS Medical Officer, who will provide additional support and advice to the first responders.

The RFDS reserves the right to withdraw AED devices if they are misused or not correctly managed. Host sites are required to undertake a **monthly “charge ready” check** to ensure that faulty units are reported and returned to RFDS for repair as soon as practical. RFDS will aim to provide an interim AED to the host site.

As CPR skills can begin to quickly degrade, all host sites of an AED should ensure as many residents as possible have access to watch the AED instructional DVD that is provided with the unit, and complete a First Aid/**CPR** training. RFDS conducts First Aid training and refresher courses and can be booked by calling 08 8238 3333.

This handbook must be kept with the AED at ALL times.

Frequently Asked Questions >

What is Cardiac Arrest?

The heart is a muscular pump and its job is to pump blood around the body.

A cardiac arrest (sudden cardiac death) occurs when the heart suddenly stops pumping / beating. It is often triggered by an electrical malfunction in the heart that causes the heart muscle to beat ineffectively.

As soon as the heart stops beating, blood can no longer flow to the brain, heart and lungs. A person in cardiac arrest will be unconscious and will stop breathing or will not be breathing normally (they can make gasping noises or may be breathing irregularly).

Urgent treatment is required to get the blood moving around the body and try to restart the heart.

For further information on sudden cardiac arrest, visit www.heartfoundation.org.au/your-heart/sudden-cardiac-death

What is a defibrillator?

A defibrillator (also known as Automated External Defibrillator, or AED) is a computerised and automated medical device. An AED can assess the heart's electrical activity and, if needed, apply a controlled electric shock to the heart to try to 'restart' it.

It will not deliver a shock if it is not required and you will not do any harm by putting an AED on someone who is unconscious. The AED will also tell you when to pause and restart CPR - just follow the voice instructions. *You can't do any harm, but you may save a life!*

Why have an AED?

Combined with routine emergency response of CPR and emergency service calls, using the AED can significantly improve the chances of survival from cardiac arrest, especially in remote areas where medical help is a long way off.

Do I need training to use an AED?

Anyone can use the AED but it is most effective when first responders are familiar with the AED capability and are confident to apply it to a collapsed person. RFDS provides annual First Aid and CPR certified training in outback South Australia which includes applying an AED. All residents living in remote areas are encouraged to access this training for free so you can be an effective first responder.

Can an AED be used on children?

Yes the AED can be used on children who have collapsed, are unresponsive and are not breathing. If the child is under 8 years of age, the **paediatric pads, which are provided with the unit**, should be used. To use the paediatric pads, remove adult pads connected to the AED and connect the paediatric pads as instructed on the packaging.

Where should AEDs be located?

RFDS provides guidelines (see Installation/Placement) to help you identify the best location for the AED. The AED is supplied with a semi rigid carry case that can be easily carried to the patient. *Signage and the 1800 RFDS SA (1800 733 772) emergency phone number will be readily displayed so that first responders can locate the AED at a glance.* The AED provided has a high durability rating to endure the harsh outback extremes but it is still a medical device that will require looking after and should not be left in the rain, heat or extreme cold. The AED should not be locked away, but kept in a place that is fully accessible for emergency use.

What support do the RFDS provide?

RFDS and host sites have a shared responsibility to ensure the AED is maintained effectively and positioned in the most appropriate location at each site for ready access. RFDS will track the allocation of each AED, its location, installation date and the pad and battery replacement dates.

Installation/Placement of AED >

The Placement of your AED is critical for an emergency situation.

As *anyone* can use the AED, we would encourage you to have conversations with your family, friends or staff about the unit, where it is located, the steps one should take and the ease of use. Include watching the instructional AED DVD as a part of orientation to your property.

You have been provided with a wall bracket (or in some areas, an alarmed cabinet) and AED signage. These are to be used to install and display the AEDs location.

When deciding on a location for your AED, ask yourself; is the AED:

- > clearly **visible** – signage should be above the unit?
- > easily **accessible** – stored on a bracket, not too high (1.2-1.4 metres off the floor)?
- > securely **fitted** to the **wall** – mounted on the bracket provided, or if cabinet supplied, is it alarmed to activate and alert bystanders?
- > **available** for use 24/7 – the AED *cant' be locked away in a room?*
- > **close** by to the RFDS **Medical Chest** (if possible)?
- > **away** from the **elements** – rain, heat, direct sun or extreme cold?
- > **ready for use** – the **Rescue Ready** indicator on the front of the unit is green?

An AED is only useful if it is easily located, if it is in a usable condition and if it is actually used when someone collapses.

Sudden Cardiac Arrest Symptoms and Signs >

Sudden cardiac arrest (SCA) occurs when the heart unexpectedly stops beating effectively.

It can happen any time, any place, to anyone.

Even people who are fit and healthy can succumb to cardiac arrest and without an AED are unlikely to survive. **25,000 people suffer a cardiac arrest outside of hospital in Australia every year. Currently only 10% of these people survive** (Heart Foundation, 2018).

The main symptom of a SCA is loss of consciousness and unresponsiveness.

In sudden cardiac arrest the heart no longer pumps blood to the brain. Without oxygen and nutrients supplied by the blood, brain cells begin to die within minutes and death soon follows. This medical emergency needs immediate cardiopulmonary resuscitation (CPR) to help maintain oxygenation and blood circulation, but unless defibrillation is performed quickly, survival is unlikely.

For a few minutes before the heart stops completely it usually goes into a rhythm called ventricular fibrillation (VF), a fluttering of the heart muscle. During VF it is often possible to shock the heart beat back into a normal rhythm with the AED.

The AED analyses the heart's electrical activity through pads applied to a bare chest and determines automatically if a shock is needed. It will not shock if the heart is not in a shockable rhythm.

This window of opportunity for using the AED is small, with each minute that passes, survival rates drop 10%. Ideally defibrillation needs to occur in the first 3 minutes of the cardiac arrest.

Cardiac arrest is not a heart attack

Cardiac arrest and heart attack are not the same thing. When someone has a heart attack the blood supply to part of the heart is slowed or stopped due to a blockage. In cardiac arrest, however a person's heart stops beating and breathing stops as well.

Causes of cardiac arrest

- > heart disease
- > stroke
- > electrocution
- > motor vehicle accident
- > a heart defect (often previously undetected)
- > heart attack
- > drowning
- > suffocation
- > other types of injury
- > unknown reasons

Using the AED >

RFDS has supplied its Medical Chest holders with a Cardiac Science Powerheart AED.

In most people sudden cardiac arrest is reversible if it is treated within a few minutes. Always call **1800 733 772** for quick and direct contact to the RFDS (in remote areas).

Retrieve the AED if one is available and use it as soon as it arrives.

Once the pads are applied to the person's chest the AED will evaluate the heart rhythm and if a shockable rhythm is detected, the AED will deliver a shock without any rescuer assistance.

The AED will then instruct you to begin CPR immediately.

Continue the AED's prompts (and CPR) until further medical advice or professional emergency services arrive.

If **two people** are available to help, one should begin CPR immediately while the other calls the emergency service and locates the AED.

Having the RFDS Medical Chest available with the responder once the patient is breathing on their own and CPR is not being conducted is recommended.

Post resuscitation, if the patient is breathing, the AED **should be left attached** to allow for ongoing detection of the heart rhythm. If a shockable heart rhythm reoccurs, the device will charge again automatically, give a warning and deliver a shock if needed.

Paediatric pads are available for **children up to 8 years or 25 kilograms**. They are stored in the rear pocket and will need to be swapped in place of the adult pads already installed. **Do not delay therapy to determine the child's exact age or weight.**

Steps of Resuscitation >

DRSABCD

- > **DANGERS** Check for danger (hazards/risks/safety)
- > **RESPONSIVENESS** Is the patient responsive or not?
- > **SEND** for help, call 1800 733 772
- > **AIRWAY** Open the airway
- > **BREATHING** Check breathing (if not breathing / abnormal breathing)
- > **CPR** Start CPR (give 30 chest compressions followed by two breaths)
- > **DEFIBRILLATION** Attach the AED as soon as available and follow the prompts.

PERFORMING A RESCUE

1	 <p>Is patient responsive?</p>	2	 <p>Call emergency services!</p>	3	 <p>Get AED.</p>
4	 <p>Place AED on ground. Open lid.</p>	5	 <p>Remove clothing. Expose chest.</p>	6	 <p>Attach pads.</p>
7	 <p>Do not touch the patient.</p>	8	 <p>If required, AED will deliver shock automatically.</p>	9	 <p>If present, place CPR device.</p>
10	 <p>Follow AED prompts. Give compressions.</p>	11	 <p>If instructed, give breaths.</p>	<p>24 / 7 MEDICAL ASSISTANCE <small>(Contract 14)</small> Ask to speak with the on-call Doctor</p> <p style="font-size: 24px; font-weight: bold;">1800 RFDS SA</p> <p style="font-weight: bold;">1800 733 772</p> <p style="font-size: 10px;">HF Radio 4010 kHz 6890 kHz 8165 kHz</p>  <p style="font-size: 8px;">Royal Flying Doctor Service SAVING LIVES</p>	

After use of AED >

Once the AED is used for a cardiac arrest, there are some important steps to be completed so the AED can be reset into “rescue ready” mode as soon as possible. The steps are: Call, Download, Change, Check, Rescue Ready, and Debrief.

Call RFDS

It is important that RFDS is made aware that the AED device has been used to allow the best care for the patient, first responders and the AED unit. As a minimum, new pads will be required to be sent out and event information will need to be downloaded. Contact RFDS post event on 08 8238 3333.

Download event information

The AED can store up to 90 minutes of data in its internal memory. If the AED has been used, RFDS medical staff or hospital specialists may want a copy of the important information of the event. This can be downloaded from the unit via the USB (not provided) or the data cable (provided). To use the cable you will need to install the Management CD into a computer that runs Windows XP, Windows Vista or Windows 7. If your computer is not compatible, by downloading straight from the AED to an USB, the information can be passed on to the RFDS medical team.

Steps of retrieving data via the USB

1. Disconnect the defibrillation pads.
2. Attach the flash drive to the USB port:
 - > the AED will automatically copy the information to the USB; and
 - > when finished, the AED will prompt to remove the USB.
3. Remove the USB.
4. Connect pads to the AED and close the lid.
5. Data can now be passed onto RFDS or analysed on the computer using the AED Manager.

Steps of retrieving data via the data cable:

1. Disconnect the defibrillation pads.
2. Attach the data cable to the USB port.
3. Insert the *AED Manager* CD into the computer.
4. Connect the data cable to the computer.
5. Start *AED Manager*:
 - > The AED prompts “Communication Mode”; and
 - > The AED appears in the AED list and the data is copied into *AED Manager*’s database
6. Disconnect the data cable:
 - > After you disconnect the AED, its icon moves from Connected to Not Connected in the AED list.
7. Connect pads to the AED and close the lid.
8. Data can now be passed onto RFDS.

Change Defibrillation Pads

The Defibrillation Pads **can only be used once**. Re-use of pads may result in skin burns, improper AED performance or patient-to-patient contamination. Connect new adult pads

package to the AED following the instructions on the pad packet. (Verify the pad connection indicator is off. If the pad indicator light remains on make sure that the pad connector is properly attached to the AED).

Check for warning indicators

Verify there is adequate charge remaining in the battery. If the battery charge is low, contact RFDS for a replacement battery. Verify the service indicator is off.

Rescue Ready

When previous steps have been completed, close the lid and check that the “Rescue Ready” indicator is green. Place the AED back in its semi-rigid carry case and locate on its mount.

First responder debrief

Being involved in an emergency situation can cause feelings of stress, anxiety or fear. Sometimes a stress debriefing after a rescue event is needed. RFDS strongly recommends you seek professional assistance to discuss the events. Seek advice from your GP for further assistance.

Maintenance Checklist >

The *Cardiac Science Powerheart G5 AED* has a comprehensive self-test system that will automatically assess the electronics, battery state, defibrillation pads and high voltage circuitry. (When the automatic self-tests are running the Rescue Ready indicator will turn from green to red).

If the self-test is successful the **Rescue Ready light** status will return to green. If the AED detects a fault the rescue ready indicator will remain red and beep every 30 seconds.



The AED self-tests are:

DAILY — self-tests checks the battery, pads and the electronic components.

WEEKLY — self-tests completes a partial charge of the high voltage electronic circuitry in addition to the items tested in the daily self-test.

MONTHLY — self-tests charges the high voltage electronics to the full energy in addition to the items tested in the weekly self-test.

Your/host site responsibility

A quick visual check of the AED can be performed anytime you walk past the device, or at a minimum, once a week, to make sure that it has the **green** “Rescue Ready” mode showing.

It is an AED site holder’s responsibility to ensure that a visual check is completed and the rescue ready status is undertaken monthly. Failure to properly maintain the unit may result in the unit being removed from location.

Periodic maintenance

At the back of this book there is a *monthly checklist*, as proper maintenance is paramount to ensure that the best possible care can be given to a patient.

You will need to check that the Rescue Ready indicator. If it is green no action is needed.

If the Rescue Ready indicator is red **your AED will not work**. Advise RFDS as soon as possible who will prompt you to work through the troubleshooting indicators of the AED.

Consumable items on the AED needs to be replaced before they expire. The PADS have a life of 2 years or expiry date and the battery requires replacement every 4 years from installation.

RFDS will contact you when the due date for replacement falls.

Cleaning and care

A damp cloth with a mild soapy water can be used to wipe the AED case. Do not spray or pour over the cleaning solution on the case of the AED or submerge in water.

For any maintenance issues, new batteries or pads, please contact RFDS on 08 8238 3333.

Year 1 AED Maintenance Monthly Checklist

Criteria	Status - OK	Corrective Action/ Comments	Date												
AED															
Placement is visible and located near the medical chest and phone (close as possible)															
Battery charge is not indicating low															
Rescue Ready indicator is green															
No audible service alarm															
Unit is clean no damage present															
SUPPLIES															
Set of AED pads in sealed packets Installed on the unit (Adult Pads) Check Expiry Date Expiry Date:															
Set of AED pads in sealed packets Stored in the hard case (Adult Pads) Expiry Date:															
Set of AED pads in sealed packets Stored in the hard case (Paediatric Pads) Expiry Date:															
Green pouch Rescue kit with unit, with blue gloves, razor, pocket mask, x2 alcohol swabs, 2 gauze packets and scissors to cut clothing.															

Year 2 AED Maintenance Monthly Checklist

Criteria	Status - OK	Corrective Action/ Comments	Date												
AED															
Placement is visible and located near the medical chest and phone (close as possible)															
Battery charge is not indicating low															
Rescue Ready indicator is green															
No audible service alarm															
Unit is clean no damage present															
SUPPLIES															
Set of AED pads in sealed packets Installed on the unit (Adult Pads) Check Expiry Date Expiry Date:															
Set of AED pads in sealed packets Stored in the hard case (Adult Pads) Expiry Date:															
Set of AED pads in sealed packets Stored in the hard case (Paediatric Pads) Expiry Date:															
Green pouch Rescue kit with unit, with blue gloves, razor, pocket mask, x2 alcohol swabs, 2 gauze packets and scissors to cut clothing.															

Year 3 AED Maintenance Monthly Checklist

Criteria	Status - OK	Corrective Action/ Comments	Date												
AED															
Placement is visible and located near the medical chest and phone (close as possible)															
Battery charge is not indicating low															
Rescue Ready indicator is green															
No audible service alarm															
Unit is clean no damage present															
SUPPLIES															
Set of AED pads in sealed packets Installed on the unit (Adult Pads) Check Expiry Date Expiry Date:															
Set of AED pads in sealed packets Stored in the hard case (Adult Pads) Expiry Date:															
Set of AED pads in sealed packets Stored in the hard case (Paediatric Pads) Expiry Date:															
Green pouch Rescue kit with unit, with blue gloves, razor, pocket mask, x2 alcohol swabs, 2 gauze packets and scissors to cut clothing.															

Year 4 AED Maintenance Monthly Checklist

Criteria	Status - OK	Corrective Action/ Comments	Date												
AED															
Placement is visible and located near the medical chest and phone (close as possible)															
Battery charge is not indicating low															
Rescue Ready indicator is green															
No audible service alarm															
Unit is clean no damage present															
SUPPLIES															
Set of AED pads in sealed packets Installed on the unit (Adult Pads) Check Expiry Date Expiry Date:															
Set of AED pads in sealed packets Stored in the hard case (Adult Pads) Expiry Date:															
Set of AED pads in sealed packets Stored in the hard case (Paediatric Pads) Expiry Date:															
Green pouch Rescue kit with unit, with blue gloves, razor, pocket mask, x2 alcohol swabs, 2 gauze packets and scissors to cut clothing.															

Year 5 AED Maintenance Monthly Checklist

Criteria	Status - OK	Corrective Action/ Comments	Date												
AED															
Placement is visible and located near the medical chest and phone (close as possible)															
Battery charge is not indicating low															
Rescue Ready indicator is green															
No audible service alarm															
Unit is clean no damage present															
SUPPLIES															
Set of AED pads in sealed packets Installed on the unit (Adult Pads) Check Expiry Date Expiry Date:															
Set of AED pads in sealed packets Stored in the hard case (Adult Pads) Expiry Date:															
Set of AED pads in sealed packets Stored in the hard case (Paediatric Pads) Expiry Date:															
Green pouch Rescue kit with unit, with blue gloves, razor, pocket mask, x2 alcohol swabs, 2 gauze packets and scissors to cut clothing.															

Year 6 AED Maintenance Monthly Checklist

Criteria	Status - OK	Corrective Action/ Comments	Date												
AED															
Placement is visible and located near the medical chest and phone (close as possible)															
Battery charge is not indicating low															
Rescue Ready indicator is green															
No audible service alarm															
Unit is clean no damage present															
SUPPLIES															
Set of AED pads in sealed packets Installed on the unit (Adult Pads) Check Expiry Date Expiry Date:															
Set of AED pads in sealed packets Stored in the hard case (Adult Pads) Expiry Date:															
Set of AED pads in sealed packets Stored in the hard case (Paediatric Pads) Expiry Date:															
Green pouch Rescue kit with unit, with blue gloves, razor, pocket mask, x2 alcohol swabs, 2 gauze packets and scissors to cut clothing.															

Accessories >

Automated External Defibrillator

RFDS has supplied its Medical Chest holders with a *Cardiac Science Powerheart G5 AED*. Once the pads are applied to the person's chest the fully automatic defibrillator will evaluate the heart rhythm and, if a shockable rhythm is detected, the AED will deliver a shock without any rescuer assistance.



Defibrillation Pads (Expiry Date)

The defibrillation pads that accompany the unit are non-polarised, meaning that the pads can be placed either side of the chest (upper right/lower left).

They should always be stored within their sealed packets and in the case provided. At all times, there needs to be an Adult set of pads installed into the front of the unit, with the expiry date clearly visible through the front of the machine.

Paediatric pads are available to use for children under 8 years of age or 25kg. The AED unit automatically adjusts the energy delivered when the Paediatric pads are attached.

Spare Adult and Paediatric pads are stored in the rear pocket of the hard case.

As these are life limited – please check the expiry date and contact RFDS if they need replacing.



Accessories >

Not Provided By RFDS

*This AED can also be fitted with Adult pads with a CPR Device attached. The **CPR Device** helps a rescuer give CPR that is consistent with 2010 Resuscitation Guidelines. The AED automatically recognises and syncs with this easy-to-use device, providing clear instructions and real-time feedback. Purchase of this item can be from Cardiac Science directly, and will be at your own cost. To purchase please contact RFDS on 08 8238 3333 for further information.*

Battery

Each battery can deliver up to 500 shocks (at 150 volts), and at least nine shocks after the AED indicates the battery is low. The battery has a 5 year warranty, and a 4 year life from date of installation. As soon as you notice the battery indicator is red, contact RFDS for a replacement.



Carry Case

This semi-rigid carry case provides additional protection for your AED, and makes it easy for a rescuer in a hurry to retrieve and transport the unit. The design ensures that the “Rescue Ready” indicator and the pads’ expiration date are clearly visible at all times.



Accessories >

Ready Kit (support for an AED rescue)

The Ready Kit includes:

- > Gloves – personal protection
- > Razor – if the victim's chest hair interferes with the AED pad adhesion
- > Scissors – cutting clothing away from the chest
- > Gauze – if the victim is wet or very sweaty
- > Alcohol Swab – to clean the application area
- > CPR mask – for delivering safe and effective rescue breaths



3D Wall Sign Kit

This 3D Wall Sign Kit helps ensure people know where your AED is stored when needed in a sudden cardiac arrest emergency.



AED Wall Bracket

The wall bracket allows the AED to be safely stored in an easily accessible location, allowing the AED to be grabbed quickly at the time of an emergency.



Accessories >

AED Training DVD

The Training CD will walk you through the use of the AED and is an important tool for anyone to use.



Management CD

This is used for post data collection, and for configuration of date and time of the AED unit.



Data Cable

Used to connect to the computer for post event data download and for configuration of the unit.



Black Carry Strap

Used to attach to the semi-rigid case.



Contact Information >

AED Support
RFDS 08 8238 3333
enquiries@flyingdoctor.net

24/7 Emergency Assistance
RFDS 1800 733 772 (1800 RFDS SA)

For further information regarding:

RFDS and AEDs
www.flyingdoctor.org.au/sant/our-services/aeds

RFDS and Medical Chests
www.flyingdoctor.org.au/sant/our-services/telehealth-sant

Cardiac Science
www.cardiacscience.com.au

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