

SAFE WORK PROCEDURE (SWP)

Workplace: NeuRA Imaging Centre

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Address: NeuroScience Research Australia
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Phone: (02) 9399 1110

TASK/OPERATION:

MRI Facility AED (SWP09)

(Automated External Defibrillator – Defibtech Lifeline Automatic AED)

Operating Procedure Developed by:

Research Governance and Compliance Manager & MRI Research Radiographer

Approved:

COO

Date:

22ND June 2022

Reviewed by:

WHS & Clinical Consultant

Version:

1.1

Introduction:

An Automated External Defibrillator (AED) is to be used on a suspected Sudden Cardiac Arrest (SCA) victim when they exhibit the SCA symptoms (i.e. no pulse, not breathing, loss of consciousness, unresponsiveness and warning signs before an arrest include chest pain, arm /neck pain, dizziness, palpitations, shortness of breath) as taught during first aid training. When SCA symptoms occur, blood stops flowing to the brain and other vital organs. If it is not treated, SCA usually causes death within minutes, but quick treatment with a defibrillator may be lifesaving.

Responders should consider their own safety and the safety of others prior to using an AED. A responder should only proceed with operation of the AED when it is safe to do so.

Use of the AED:

It is safe to use the AED:

- on the MRI table;

- on a patient with a pacemaker or implantable cardioverter-defibrillator (ICD), though the pad should not be placed directly over the device;
- on a pregnant patient;
- by following its audio instructions.

When being considered for use any transdermal drug patches should be removed (these patches would normally be removed prior to an MRI, if they have not, remove them prior to using the AED), e.g. the SCA incident occurs before they are in the MRI.

Do not use the AED:

- near water or in a wet environment;
- near flammable materials;
- where the person is conscious;
- where the person is breathing;
- where the person has a detectable pulse or other signs of circulation;
- where the instructions in the AED state clearly they should not be used.

All AEDs are failsafe and include protection that prevents them from shocking someone who is not in cardiac arrest. It is safe for anyone to use as long as they follow the AED audio instructions.

If there is a sudden cardiac arrest immediately call for an ambulance, or ask someone nearby to do so. The [Emergency Procedures Guide](#) (medical emergency) should be followed. This is a code blue on the Emergency Procedures flip chart, available in the MRI Facility, located in the MRI Control Room on the bench.

The Research Radiographer should have first aid and emergency life support training, if not, refer to the Internal First Aid Officers list which is on display in the MRI Control Room.

Definitions:

Automatic External Defibrillator (AED): An AED is a device that is used during a sudden cardiac arrest that delivers an electric shock through the chest into the heart. The AED has the ability to analyse a person's heart rate to determine if they need an electric shock.

Sudden Cardiac Arrest (SCA): Normal function of the heart is caused by an electrical signal that contracts the heart and pumps blood through the body. In a SCA, these electrical signals malfunction and blood no longer pumps effectively through the body. This is called Ventricular Fibrillation and can be treated with an AED when used soon after onset of the SCA.

Symptoms of a sudden cardiac arrest are no pulse, not breathing, loss of consciousness, unresponsiveness. Warning signs before an arrest include chest pain, arm /neck pain, dizziness, palpitations, shortness of breath.

Location of AED:

The AED in the MRI suite is stored in Zone 2 (see map on page 7) in a wall mounted AED cupboard. There is an AED sign above the AED machine.

The following guideline should be followed in order to ensure that a person who has experienced a SCA, collapsed, or is found unconscious receives prompt emergency services.

- a) One person must call 000 to make sure that emergency services are on the way as soon as possible. Provide them with the accurate address and phone number for the MRI suite, **found at the top of page 1 of this SWP**. Stay on the phone with 000 until the dispatcher tells you to hang up. The person on the phone can stay near the person receiving aid, but DO NOT get in the way of those persons giving the aid.
- b) Another person should get the AED and bring to the area where the person receiving aid is located.
- c) Preferably, people who are certified in CPR are available to give aid to the victim. It's best if two people are there, one to operate the AED and one person to begin chest compressions. If no trained people are present, the AED will tell you each step to take.
- d) Another person should be responsible for patient's name, recording time, major events, actions taken, and people involved in the emergency situation until emergency services arrive. A small notebook and pen are located near the AED

Post Use Procedure:

1. Complete documentation of the sudden cardiac arrest event no more than 24 hours following the event
2. Give all documentation to the Research Radiographer or WHS staff member
3. The Research Radiographer or WHS staff member will contact the AED vendor to download event data from AED. Do not remove the battery.
4. The Research Radiographer or WHS staff member will assure that documentation is sent to the COO as soon as possible and no later than 48 hours from the date of the event
5. The Research Radiographer or WHS staff member should conduct a critical incident debriefing as needed

Our workplace EAP provider (AccessEAP) can be contacted on [1800 81 87 28](tel:1800818728) for confidential counselling. For any research participant involved in an AED the research group leader can provide them with the Ethics Committee approved counselling service provider.

Sequence of Job Steps (What to do in the right order)	Potential Hazards/Risks of each step	Standard Operating Procedure (How to do it safely)	Personal Protective Equipment
Training	Recognising the signs of SCA	Training in the operation of AEDs is highly recommended and required for MRI Facility staff. An online course is available through UNSW at https://unsw.sharepoint.com/sites/unsw-staff-learning/SitePages/Health.-Wellbeing-%26-Safety.aspx First Aid courses including the Apply First Aid course (HLTAID003), specifically include core knowledge requirements for AED use.	n/a

		The Safety Manual contains information and remains with the AED at all times aside from when in use.	
<p>Safety Precautions</p>	<p>Before using an AED, the operator must be confident that they can follow the AED instructions for use. (i.e. it is important they can understand audible English; use the volume control on the AED to ensure it can be heard clearly)</p> <p>Check for danger before touching the victim.</p> <p>CPR and defibrillation should not be performed in MRI environment (MRI Zones 3 & 4).</p> <p>The MRI table (the FlexTrak) is detachable from the MRI scanner, and can be wheeled out to zone 2. In the unlikely event that a non-participant is in the MRI scanner room and arrests, then the research person can assist the radiographer pulling the person from the MRI room. If the person is on the floor this may require rolling them, putting a sheet under them and pulling them out, there is no way to hoist someone off the MRI room floor.</p>	<ul style="list-style-type: none"> • If the person is not confident they should call for help – refer to the MRI’s copy of the Internal First Aid Officers list located in the MRI Control Room. • Remove person from MRI Zones 3 & 4 to Zone 2 (see NeuRA Imaging Centre Map below for zones) • Restrict access to MRI Zone 3 from Zone 2 for MRI safety purposes. Ensure open access to MRI Zone 2 for medical personnel. • If the person is on the MRI FlexTrak (MRI table), ensure all coils are removed from table (eg. MRI head coil) and all electrical devices removed from the person (eg. ECG, EEG, PPU). Note: If an MRI coil has been exposed to a defibrillation pulse, a Philips service engineer must replace the affected coil. • To perform CPR, the Flextrak table may be lowered, though CPR should be performed standing at person’s side. Do not climb on to the FlexTrak table to perform CPR, as table may break (The safe working load of the FlexTrak is 250kgs). • Use the provided resuscitation mask when giving Cardio Pulmonary Resuscitation (CPR). • Dry the person’s chest if it is wet. • Move person away from electrically conductive surfaces prior to use of AED • Feel the chest for any pacemaker. DO NOT place the electrodes directly over a person’s implanted pacemaker. Pacemaker stimuli may degrade the accuracy of ECG rhythm analyses or the pacemaker may be damaged by defibrillator discharges. • DO NOT use adult electrode pads on children under 8 years of age • Do NOT use if the person is: <ul style="list-style-type: none"> • Lying in water; or • Conscious; or 	<p>Resuscitation mask</p> <p>Disposable latex or nitrile examination gloves.</p> <p>Safety glasses.</p>

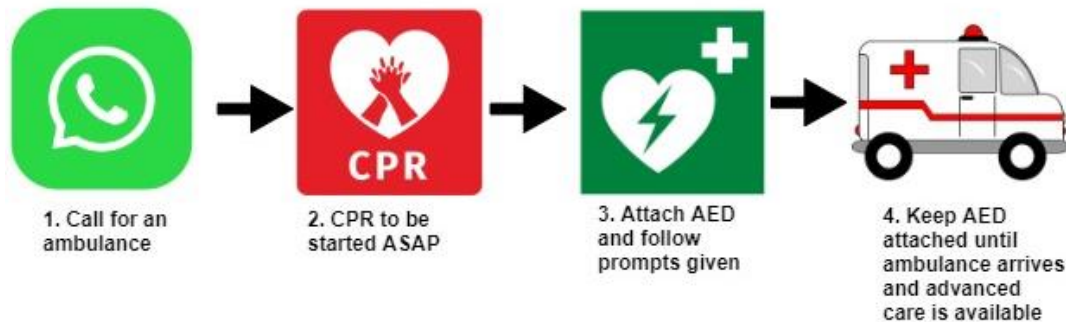
		<ul style="list-style-type: none"> • Breathing; or • Has a detectable pulse or other signs of circulation <p>AEDs do have a failsafe and will not shock if it is not necessary.</p>	
Operation	<p>Failure to use the device correctly.</p> <p>It is unlikely there will be blood or saliva contamination however the PPE required will provide protection in the event there is.</p>	<ul style="list-style-type: none"> • Turn on the AED and press the self-test button. • Using the scissors provided cut any clothing off the victim's chest area. • If necessary, use the alcohol wipe provided to clean the victim's chest. • Place the pad on the victim's chest as per the instructions on the pad and follow the prompts and instructions from the AED. • Be sure the person is "clear" by making sure no one is touching them before issuing the shock. • Keep AED attached until the ambulance arrives and advanced care is available <p>Follow the instructions – see illustration below.</p> <p>After use the AED must be tagged Out of Service until the pad is replaced.</p>	<p>Disposable latex or nitrile examination gloves.</p> <p>Face shield</p> <p>Resuscitation breaths are to be provided by mask and bag (which are available), mouth to mouth should not be performed.</p> <p>Do not touch the person during the delivery of the shock</p> <p>Contact the FEBS team (contact number below) ASAP to organise replacement pads</p>
Maintenance	<p>Failure to maintain the AED in operating order.</p>	<ul style="list-style-type: none"> • Replace pads after each use. • Replace pads after five years from date of installation (date on pads). • Replace batteries after five years from date of installation (date on batteries) 	<p>Contact the FEBS team to organise timely replacement pads (2 sizes available, adult and child), and replacement batteries.</p>

Trouble Shooting	Failure to maintain the AED in operating order.	<ul style="list-style-type: none"> • Carry out the self-test procedure by pressing the button marked 'test' to check AED in correct operating condition. • Testing should be conducted quarterly. • Refer to AED operator's guide. 	Contact the FEBS team for any replacement parts required.
Quality Assurance	Failure to report the incident and failure to improve the process based off learnings from lived experience.	<ul style="list-style-type: none"> • retrospective evaluation of the medical care rendered by the authorised individuals on scene before transfer of the patient to the emergency services 	Provide a report to NeuRA via the accident and incident WHS reporting tool found on the staff intranet.

Relevant Personnel:

- WHS Coordinator – Elaine Duffy - 0424 307 901
- NeuRA Facilities Manager – Matt Grenfell – Ext. 1821
- FEBS (Facilities, Engineering and Building Services) Chan Trieu – 0412 627 220
- MRI Radiographer – Brendan Moran – Ext. 1110 – Mobile: 0478493698
- NeuRA Imaging Director – Caroline Rae – Ext. 1211 – Mobile: 0407467677
- Research Governance and Compliance Manager – Deborah McKay – Ext. 1676
- Philips Customer Support – 1800251400

Emergency Procedures:



Report all incidents or injuries to your supervisor and fill in a [NeuRA online incident report](#) as soon as possible after the emergency services have removed the person from the site.

- **For fire emergency**, use fire extinguisher if applicable, or else exit via the front or back door (whichever is safer). Call the fire brigade if necessary.
- **For exposure to contaminants**, wash affected area thoroughly with antibacterial hand wash.
- **For laceration injury**, apply pressure and seek immediate first aid from others present. If necessary, call a local doctor for appointment or attend local hospital emergency department. Seek further medical advice if necessary.
- **For acute manual handling injury**, call a local doctor for appointment or attend local hospital emergency department, seek further medical advice if necessary.
- Magnetic Resonance Safety – Incidents (SWP03) <https://imaging.neura.edu.au/forms-policies/>
- Magnetic Resonance Safety – Emergencies (SWP04) <https://imaging.neura.edu.au/forms-policies/>
- NeuRA Incident Report & Investigation Procedure (WHS31)
[Work, Health & Safety - Policies - NeuRA Intranet WHS31](#)
- NeuRA Online Accident & Reporting Tool
[Injury & Incidents - Operations - NeuRA Intranet](#)
- NeuRA First Aid Procedure (WHS20)
- [Work, Health & Safety - Policies - NeuRA Intranet WHS20](#)
- Follow NeuRA Emergency Procedures Flipchart 2018 located near the MRI control room phone or on NeuRA Intranet
[Emergency Procedures Guide](#)

Codes of Practice/Standards:

The Royal Australian and New Zealand College of Radiologists:

- [RANZCR MRI Safety Guidelines | RANZCR](#)
- [Quality and Standards | RANZCR](#)

Zone Map:

