



The Cardiac Society of Australia and New Zealand

Clinical Standards

Prevention of accidental exposure to high voltage electric shocks during the preparation for burial of deceased persons with Implantable Cardioverter Defibrillators(ICDs)

These Clinical Standards were originally devised by a committee consisting of representatives of the Cardiac Society of Australia and New Zealand, the Australian Funeral Directors' Association and the manufacturers (or their agents) of implantable cardioverter defibrillators.

Review of these Standards was co-ordinated by Prof Andrew McGavigan on behalf of the Electrophysiology and Pacing Council.

The Standards were reviewed by the Continuing Education and Recertification Committee and ratified at the CSANZ Board meeting held on Friday, 28th November 2014.

Introduction

Implantable cardioverter defibrillators (also known as automatic implantable cardioverter defibrillators, defibs, AICD's or ICD's) are devices used to restore normal heart rhythm in patients prone to dangerous heart rhythms. These devices sense when an abnormal heart rhythm occurs and automatically deliver an electric shock to the heart. ICDs consist of a metallic box and one or more leads (electrodes) which are connected to the heart. The ICD box appears similar to a pacemaker but is larger. The size varies from about twice the size of a pacemaker to the size of a hip flask. The ICD box is usually implanted under the skin below the clavicles (collar bones) or sometimes behind the rectus muscle in the abdomen. The leads pass from the device to the heart. In some cases these leads pass through the veins to the heart whereas in others they are attached to the outside of the heart. There is little, if any, danger in handling (washing, dressing etc.) or transporting a deceased person with an ICD implant. In certain situations, however, there is a small risk of an electric shock to those handling the deceased person. These situations include:

- i) attempting to remove the ICD
- ii) directly handling the ICD box
- iii) attempting to remove the ICD leads or cutting the ICD leads
- iv) aspirating blood from the heart with a needle or suction device
- v) directly handling or attempting to remove the heart

*If it is necessary to do any of the above it is important to turn the **ICD** off (see below).*

Situations in which ICD removal is mandatory or desirable

- i) **Cremation:** ICDs cannot be left in a patient who is to be cremated as exposure to intense heat will cause an explosion and significant damage to the crematorium.
- ii) **Recovery of the device:** It is desirable to contact the manufacturer even if removal of the device is not contemplated.

Disposal of ICDs

ICDs cannot be simply disposed of in the garbage since they may cause an explosion if incinerated. ICDs should be returned to the manufacturer.

To Turn Off the ICD

(Note: Even if the deceased person was an inpatient in hospital, it cannot be assumed that the ICD has been turned off). This information is often available by liaison with the follow up institution or patient's cardiologist. If this is not possible, it should be assumed that the ICD is ON. If the type of device is unknown, assume it is an ICD and is programmed ON.

- 1 Contact the patient's family and ask for the name of the patient's cardiologist or follow up centre. If removal of the ICD is necessary, the family should also be asked for permission.** The follow up institution or cardiologist should be able to provide details of the manufacturer.
- 2 Contact the manufacturer and ask them to send a representative to turn the device off.** The manufacturers or their agents have undertaken to do this, upon request, within a reasonable time. Please note that, particularly if the deceased person is far from a capital city, it may take some time for the manufacturer's representative to reach you. In this situation it is important to inform the manufacturer as early as possible.
- 3 Once the device is turned off, it is safe to handle.** If removed, the device should be cleaned, decontaminated and handed to the representative of the ICD company for inspection and disposal.
- 4 The manufacturer's representative should endeavour to interrogate and download the device and send the report to the physician or institution responsible for the device follow up.**
- 5 In certain circumstances, it may be impossible or impractical to wait for a manufacturer's representative.** A possible alternative is to use a magnet which will temporarily inactivate an ICD if placed within 5cm of the device, which may allow removal. Note, normal function will resume when the magnet is removed, and the magnet should be secured to the ICD with a rubber band following removal. In these circumstances arrangements for collection should be discussed with the manufacturer.

Manufacturers*

Programmer: Renamic / ICS3000

Biotronik Australia Pty Ltd

Level 4, Building 2
20 Bridge Street
Pymble NSW 2073

Contacts:

Customer Service: 1800 CARDIO
(1800 227 346)

Programmer: Orchestra

Sorin Group Australia Pty Ltd

Unit 2,
30 Sylvan Road
Toowong QLD 4066

Contacts:

Customer Service: 1800 452 650
info.australia@sorin.com

Programmer: 3120 ZOOM Boston Scientific Boston Scientific ANZ

Level 5,
247 Coward Street
Mascot NSW 2020

Contacts:

Customer Service: 1800 245 559

Programmer: Merlin Programmer, Model 3650

St Jude Medical Australia Pty Ltd

17 Orion Road
Lane Cove NSW 2066

Contacts:

Customer Service: 02 9936 1350

Programmer: Medtronic 2090 CareLink

Medtronic Australasia Pty Ltd

97 Waterloo Road
North Ryde NSW 2113

Contacts:

Customer Service: 1800 668 670