

# The Withdrawal of Implantable Cardioverter Defibrillator therapy (ICD) in an Adult Patient



December 2011

Review date December 2012

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## **(1) Introduction**

An implantable cardioverter defibrillator (ICD) is a device that is placed in the chest or abdomen. The device uses electrical pulses or shocks to help control life-threatening heart rhythms and therefore reduce the risk of sudden death. All ICDs also provide bradycardiac pacing in addition. Currently ICD can either be standalone ICDs (Single Chamber (Right Ventricle) or Dual Chamber (Right Atrium and Right Ventricle) and in combination with a Cardiac Resynchronisation therapy device (CRT-D).

ICDs are initially implanted to reduce the risk of sudden death in a selected group of patients. However patients with an ICD often suffer from progressive conditions in which case as the end of life nears, peri death arrhythmias may occur, causing the ICD to activate and deliver shocks, which may cause distress to the patients and family. This eventuality is obviously undesirable and therefore at an earlier stage in the patient's condition, and following discussion with the patient, their family, carers and medical team, a decision can be made to turn off the device.

It would be considered good practice to discuss the eventuality of ICD deactivation in the future in patients undergoing ICD implantation. The risk of peri death arrhythmia and the discomfort of ICD shocks should be part of the discussions with patients to allow informed consent.

It is important to understand that deactivation of ICD only switches off the anti-tachycardia treatments. The pacemaker part of the ICD will provide bradycardiac pacing if required. ICD deactivation will not result in instantaneous death; simply it removes the resuscitation if an arrhythmic cardiac arrest occurs subsequently.

The purpose of this document is to provide a framework for best practice in deactivating ICDs in patients reaching end of life scenarios. This document does not deal with deactivation and reactivation of devices during surgery or radiotherapy.

The Shropshire and Staffordshire Heart & Stroke network multidisciplinary working group acknowledge the work of the North of England cardiovascular network and their policy on which this document is based.

## **(2) Scope**

This operational policy will identify the process of deactivation of ICDs implanted in the Shropshire and Staffordshire Heart & Stroke network region and is intended to help and advise everyone responsible for the care of patients receiving ICD therapy.

### **Deactivation in hospital**

Cardiorespiratory departments should ensure that all areas of their organisation know how to arrange for deactivation during the day, and what procedure to use outside of normal working hours.

### **Deactivation for patients in the community.**

Primary care staff will have increasing contact with ICD patients towards the end of their life. Placement of patients on a palliative care register such as the GSF (Gold Standards Framework) register should prompt discussion about deactivation of ICD between the GP or cardiologist, specialist nurse or other health care worker and the patient, their carers and relatives. This will help ensure that decisions are taken when the patient has capacity to participate, and that the procedure can be planned and carried out in a timely fashion.

### **Deactivation outside of normal working hours**

This policy explains how to contact cardiac physiology services during and outside of normal working hours (page 4). Temporary deactivation by an appropriate ring magnet (usually available from CCU) can be carried out if urgent deactivation is required, but proper planning with the local or tertiary cardiology department will help avoid this situation

### **(3) Selection Criteria – when should deactivation be considered?**

This decision will normally be made in conjunction with discussions about the patient's resuscitation status. Patients will be assessed and identified as suitable for deactivation or reactivation of ICD if they fulfill one of the following selection criteria:

1	Following discussion between the medical team, patient and carers, a decision has been made that continued use of an ICD is inconsistent with patient goals of care.
2	The patient is considered to be imminently dying and eligible to be started on the Care of the Dying Pathway (Liverpool Care Pathway).
3	The patient has end stage terminal disease or palliative care requirements and has requested that their device be deactivated.

The decision may be made in conjunction with the patient, carers and family by any members of the medical team:

- Cardiology Consultant or cardiology Registrar.
- General practitioner (GP).
- Palliative care practitioners (in consultation with consultant/GP).
- Specialist nurse or experienced hospital/community nurse. This must be in consultation with consultant/GP.
- Hospital consultant or experienced doctor.

Ideally there should be consensus between all parties involved that ICD deactivation is needed. In cases where there is debate about the ICD deactivation a second opinion should be sought.

If the patient lacks the capacity to consent and also has no family then PCT/Trust has a duty to provide the patient with access to an Independent Mental Capacity Advocate.

**Recommendation:** If a health professional that is not a cardiology Consultant or cardiology Registrar requests deactivation, contact should be sought with a deactivating specialist physiologist in good time, and not later than when consideration is first given to activation of the Liverpool Care Pathway that deals with the last few days or hours of life.

N.B Precise documentation is mandatory to document ICD deactivation. The network has not specified a specific documentation form to be filled out upon ICD deactivation, individual trusts may wish to develop a local document. However at the minimum a clear entry must be in the patient notes detailing the following:

- ⇒ The reason for deactivation
- ⇒ Whether the patient has decision making capacity
  - If not then is there is a lasting power of attorney
  - If no lasting power of attorney then documentation of the process undertaken to make a best interest decision
- ⇒ Time and date of deactivation and the person performing deactivation
- ⇒ The authorizing person,
- ⇒ Indication for deactivation
- ⇒ Person who has performed the deactivation.

#### **4. Process of requesting deactivation of device**

Contact the nearest local hospital to ask about deactivation or reactivation. Once the type of device has been confirmed and the correct equipment identified, arrangements can be made for a cardiac physiologist to carry out the procedure. See contact details below in table 1.

Where the local hospital does not hold the required equipment the implanting centre should be contacted to arrange the deactivation. The physiologist performing deactivation must have access to signed, documented evidence that correct discussions and processes have been undertaken [see section 3].

A ring magnet can be used to prevent the ICD delivering tachycardia therapy until the programmer and equipment are available for full deactivation.

Ring magnets are held in the CCU at each hospital, where advice will be given. The ring magnet should be placed over the ICD (usually left pre-pectoral) and secured with appropriate tape.

**Table 1: Contact details to arrange ICD deactivation**

	<b>Contact 9am-5pm</b>	<b>Contact 5pm to 9 am</b>	<b>Responsible person and job title</b>
<b>University Hospital of North Staffordshire</b>	<b>Pacing clinic:</b> 01782 553635 or 01782 552348	<b>Coronary Care Unit:</b> 01782 553196	<b>Dr A Patwala</b> Consultant Cardiologist
<b>Mid Staffordshire Hospital</b>	<b>Cardiology Dept:</b> 01785 257731 Ext 2730/2	<b>Coronary Care Unit (UHNS):</b> 01782 553196	<b>Dr I Crossley</b> Consultant Cardiologist
<b>Burton Hospital</b>	<b>Cardiology Dept:</b> 01283566 333 Ext 5334	<b>Coronary Care Unit:</b> 01283 511 511 Ext 4191 or 4247	<b>Mrs S Toy</b> Head of Cardiorespiratory Department
<b>Royal Shrewsbury Hospital</b>	<b>Cardiology Dept:</b> 01952 641 222 ext 4162	<b>Coronary Care Unit:</b> 01952 641222 ext 4505	<b>Mrs L Taylor</b> Head of Cardiorespiratory Department
<b>Princess Royal Hospital</b>	<b>Cardiology Dept:</b> 01952 641 222 ext 4162	<b>Coronary Care Unit:</b> 01952 641222 ext 4505	<b>Mrs L Taylor</b> Head of Cardiorespiratory Department

## **5. Responsibilities of Staff working in Primary Care, Acute Hospital Services or Palliative Care**

- (a) Making the decision to deactivate or reactivate as appropriate [see section 3], usually in conjunction with resuscitation status.
- (b) Contacting the local or tertiary hospital at their *earliest convenience* to ask for support with equipment, local contacts or actual deactivation.
- (c) Informing the patient and their carers of the procedure and advantages/disadvantages for deactivation.
- (d) Explaining to the patient and carers when and why contact is being made with the hospital and who will be performing the procedure.
- (e) Completing appropriate documentation for the patient record.
- (f) Ensuring contact details for deactivation of ICDs is available in the patient notes.
- (g) It is the duty of local staff to tell the implantation centre that deactivation has been carried out and to document the details in medical records and patient's notes.
- (h) An identified key worker should be nominated and where appropriate a referral to palliative care should be made for families or carers for further support.

## **6. Cardiac physiologist duties**

Staff in the pacing department need to amend the devices database accordingly on being informed of deactivation of a patient's device.

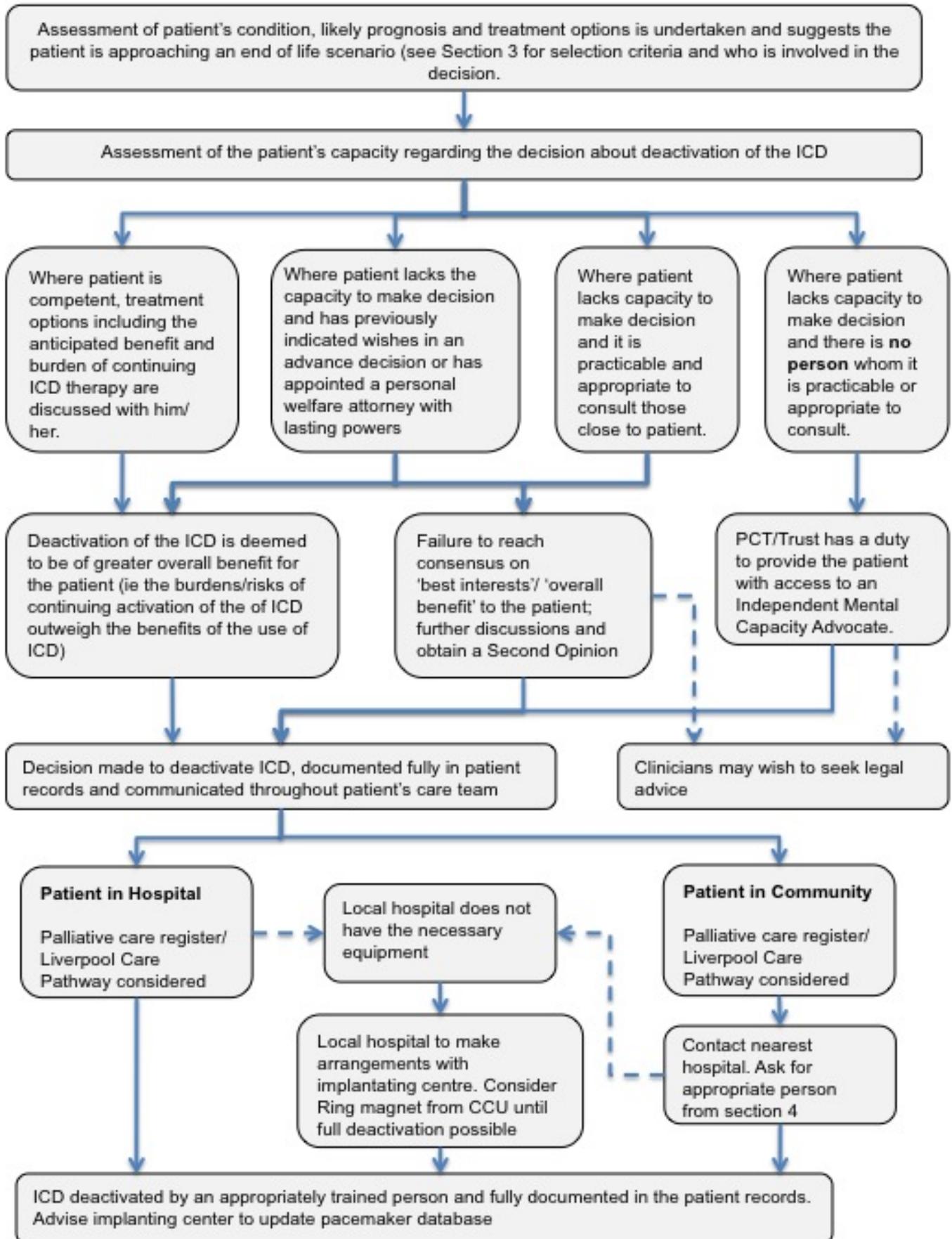
It is essential that the individual deactivating any device adheres to the lone worker policy relevant to their employer, providing contact details during any community visits.

## **7. Removal of ICD post mortem**

If a pre-mortem decision is taken not to deactivate and subsequently an autopsy or cremation are considered, the device must be deactivated before either can take place. Please refer to section 4.

**NB: All devices must be explanted before a body is cremated.**

## Algorithm tree for deactivation of ICD in an Adult Patient



## **Acknowledgements**

Dr Ashish Patwala - Consultant Cardiologist UHNS  
Dr Jon Creamer - Clinical Lead Consultant Cardiologist UHNS  
Dr Rhys Beynon - Consultant Cardiologist & Electrophysiologist, UHNS  
Dr Adrian Morley-Davies Consultant Cardiologist UHNS  
Dr Duwarakan Satchithananda - Consultant Cardiologist UHNS  
Eunice Foster - Assistant Director Shropshire and Staffordshire Heart and Stroke Network  
Natalie Brown – IMCA Project Co-ordinator, Assist  
Martin Twigg - IMCA Project Co-ordinator, Assist  
Janet Cooke - Matron- Cardiothoracic Medicine UHNS  
Dr Ian Crossley - Consultant Cardiologist MSFT  
Tony Gill - Clinical Practice in Governance Manager - West Mercia, WMAS  
Kathy Harding - Senior Chief Cardiac Physiologist, MSFT  
Claire Hookey - Consultant Palliative Care, Douglas Macmillan Hospice  
Angie Ingram - BHF Heart Failure Nurse, Tunstall  
Kate Rashid - Acting Assistant Clinical Governance and Risk Manager, UHNS  
Karen Robinson - Heart Assessment Lead Nurse, SaTH  
Paula Wells - PPI Lead, Shropshire & Staffordshire Heart & Stroke Network  
Brenda & James Lyons - ICD Patient Support Group  
Carol Webb - Nurse Consultant Cardiology – SaTH  
Charlotte Aston - Directorate Manager - Cardiothoracic Medicine, UHNS