Doncaster and Bassetlaw Teaching Hospitals
NHS Foundation Trust

Please Note: This policy is currently under review.

Deactivation of Implantable Cardioverter Defibrillator (ICD) and Cardiac Resynchronisation Therapy Defibrillator (CRT-D) Devices - Procedure (adults and young people aged 16 years and over)

This procedural document supersedes: PAT/T 55 v.3 – Deactivation of Implantable Cardioverter Defibrillator (ICD) and Cardiac Resynchronisation Therapy (CRT) Devices - Procedure (adults and young people aged 16 years and over)

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Executive Sponsor(s):	Dr Gillian Payne: Consultant Cardiologist
Author/reviewer: (this version)	Scott Walton: Chief Cardiac Physiologist
Date written/revised:	May 2020
Approved by:	Policy Approval and Compliance Group
Date of approval:	21 August 2020
Date issued:	11 September 2020
Next review date:	July 2023
Target audience:	Clinical Staff

Amendment Form

Please record brief details of the changes made alongside the next version number. If the procedural document has been reviewed **without change**, this information will still need to be recorded although the version number will remain the same.

Version	Date Issued	Brief Summary of Changes	Author
Version 4	11 Sept 2020	• References, companies & weblinks updated • ReSPECT Form referenced • Protocol changed to Procedure • BH End of Life (EOL) and deceased deactivations added • EOL deactivation form added (Appendix 2) • Magnet placement info sheet added (Appendix 3) • Wording changes throughout • Addition of 'best interest' related to relative risks of deactivation/not deactivated for procedures/verbal authorisation • Addition of Rotherham General Hospital to contact Hospitals/ICD centres	Scott Walton
Version 3	27 October 2017	• References & weblinks updated • Appendix 1 updated • Appendix 2 updated • New Trust name updated throughout. Contact numbers updated throughout • Section 4.5. Wording changed to reflect the legal responsibility of the doctor completing the death certificate • Section 4.6 Clarification regarding referral process in emergencies. • Section 4.6 Further clarification regarding use of ring magnet • Appendix 2 removed	Howard Briggs
Version 2	2 December 2014	• References updated • Appendix 1 updated • Amended to new style APD Template (new branding)	Vivienne Hayward
Version 1	December 2011	• This is a new procedural document, please read in full.	Vivienne Hayward

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1. INTRODUCTION

Implantable Cardioverter Defibrillators (ICDs) are implanted in patients at risk of developing life threatening ventricular arrhythmias. Many of these patients have associated heart failure and coronary heart disease. Patients with ventricular dysynchrony may be implanted with a Cardiac Resynchronisation Therapy device which may have a defibrillation function (CRT-D).

The purpose of an ICD is to continuously monitor heart rhythm and respond to arrhythmias. An ICD may provide automatic defibrillation therapy to terminate ventricular fibrillation (VF) or fast ventricular tachycardia (VT), anti-tachycardia pacing to terminate VT, cardioversion of VT and anti-bradycardia pacing where required.

Heart failure is a progressive illness and a leading cause of death. Patients approaching end of life with end-stage heart failure or another illness frequently exhibit metabolic or biochemical disturbances and are at risk of developing complex agonal rhythms that may trigger defibrillation. Shocks experienced during the dying phase would be painful for the patient and cause distress. In such situations it is no longer appropriate to maintain the ICD in active defibrillation mode.

Bradycardia pacing functions of such devices should NOT be disabled as withdrawing pacing support may induce symptoms and accelerate the dying process.

In an otherwise well ICD/CRT-D patient, electrical interference created during surgery or endoscopy may cause tachycardia detection and inappropriate delivery of defibrillation energy, which could harm patients by causing cardiac arrest and damaging heart muscle tissue. Device deactivation removes this risk; however failure to reactivate devices following procedures introduces prolonged risk of experiencing untreated arrhythmias after leaving the hospital.

2. PURPOSE

Patients with an ICD or CRT-D are regularly reviewed by a hospital providing a Specialist ICD Service, who maintains the ultimate responsibility for their care related to their implanted device therapy.

Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust does not provide a routine ICD or CRT-D Follow-Up Service. The main ICD Centre within our region is Northern General Hospital in Sheffield, with satellite services at Rotherham General Hospital.

Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust aims to provide a basic deactivation service, and this document was produced in order to:

- Provide an efficient deactivation service for patients admitted to the Doncaster Royal Infirmary site.
- Clarify the procedure for ICD/CRT-D deactivation.
- Ensure appropriate documentation and requesting of deactivation procedures.

This procedure **includes** all in-patients with ICD/CRT-D who are:

- Admitted to the Doncaster Royal Infirmary or Bassetlaw Hospital sites with deterioration and approaching end of life (BH - Medtronic and Abbott only).
- Admitted to the Doncaster Royal Infirmary or Bassetlaw Hospital site and covered by an active ReSPECT form with a documented advance decision not to resuscitate. (BH - Medtronic and Abbott only)
- Admitted to the Doncaster Royal Infirmary site for routine/emergency surgery or procedures requiring diathermy/electrocautery.
- Admitted to the Doncaster Royal Infirmary site with device malfunction causing inappropriate shock therapy.
- Deceased patients within Doncaster Royal Infirmary or Bassetlaw Hospital Mortuary (BH Medtronic and Abbott only).

This procedure **excludes**:

- In-Patients at Mexborough Montagu Hospital.
- In-Patients at Bassetlaw Hospital with suspected ICD/CRT-D shock therapy or syncope (see 4.7 - interrogation for diagnostic purposes).
- Outpatients attending any Doncaster and Bassetlaw Hospitals sites; permanent deactivations for patients approaching End-of-Life should be arranged by the patients' ICD Centre.

3. DUTIES AND RESPONSIBILITIES

Responsibility for decisions regarding Deactivation/ Reactivation of ICD/CRT-D rests with the Consultant managing the current admission in consultation with the patient and their families/carers. Where necessary, decisions should be taken after liaison with the ICD centre or Cardiologist. The Consultant (and/or Deputy) is therefore responsible for ensuring they are fully aware and comply with this document.

Appropriately trained pacing physiologists from the Cardio-Respiratory Department have technical responsibility for the reprogramming of devices upon authorisation/in patient's best interest. This is undertaken with the full approval of the Consultant Cardiologists.

Due to the highly specialised nature of these devices, this service will depend on availability of specialist staff/equipment and may be adversely affected by unplanned staff absence.

Overall responsibility for implantable device therapy lies with the patients' ICD centre.

It is the responsibility of ward/nursing staff to identify the make/model of implanted devices. For patients approaching end-of-life, it is the responsibility of the ward nursing staff to ensure that a palliative care nurse specialist/heart failure nurse specialist or member of staff known to the patient is present during deactivation to answer any patient/family concerns. Ward nursing staff have the responsibility to ensure the Mortuary is informed of the presence of an ICD/CRT-D.

Mortuary staff are responsible for arranging deactivation of ICD/CRT-D prior to removal of device for cremation.

4. PROCEDURE

4.1 Indications for Deactivation

Permanent ICD/CRT-D Deactivation will only be performed where there is written authorisation from the Physician managing the current admission documented in the medical notes. Ideally a written referral to the Department should be made.

Consideration to deactivate an ICD or CRT-D should be given in the following situations:

- **Where continued use of an ICD is inconsistent with patient outcome.**

- **While an active ReSPECT form decision rules out cardio-pulmonary resuscitation order is in force.**

- **Imminent death**
  Active tachycardia therapies are inappropriate in the dying phase, and patients may choose to have their devices deactivated prior to significant clinical deterioration.

- **After death**
  Safe deactivation of ICD/CRT-D devices must be performed after death, particularly as these devices must be explanted prior to cremation, and cannot be safely handled whilst active.

- **During surgical procedures using diathermy/electrocautery**
  Safe deactivation of ICD/CRT-D devices may be required before surgery, particularly if diathermy/electrocautery is to be used. Diathermy creates electrical interference which may cause inappropriate shock delivery if detected, potentially causing damage to cardiac tissue and cardiac arrest.

- **Due to inappropriate shock therapy**
  Temporary deactivation may be considered whilst patient awaits transfer to specialist ICD centre for comprehensive device assessment. In urgent circumstances this can be performed at the discretion of the physiologist, and must be clearly documented and communicated to medical staff.

4.2 Procedure for Deactivation - Patients imminently approaching End of Life, or with an advance decision to refuse treatment.

Patients must have a ReSPECT form completed with advance decision to refuse resuscitation.

The Physician managing current admission (or deputy) is to authorise deactivation of ICD/ CRT-D and clearly document in medical records; ideally using the form provided by us. Where necessary, liaison with the ICD centre or consultant cardiologist may be required.

The Physician requesting deactivation is to complete patient consent and education (+/- discussion with relatives) prior to contacting pacing physiologists.

Ward nursing staff to ascertain make/model of implanted device. The device cannot be deactivated without this information:

- Each patient should carry their ICD Identification Card
- Contact ICD clinic at Sheffield Northern General Hospital, ICD Clinic at Leeds General Infirmary, Cardiac Device suite at Rotherham General Hospital

Contact pacing physiologists to request deactivation/reactivation:

- Contact Cardio-respiratory Department ext. 642456
- Ward nursing staff MUST state manufacturer of device

Pacing physiologist to **disable <u>ALL TACHYARRHYTHMIA THERAPIES</u>** and clearly document in medical records and/or sign and complete the departmental deactivation form and attach to ReSPECT form. Please note that Bradycardia pacing therapy **must** remain active.

- Programmer printout to be stored in Departmental Records within the Cardio-respiratory Department to confirm device status
- Wherever possible, diagnostics data to be stored electronically or printed.

Ideally a member of nursing staff known to the patient should be present during deactivation to discuss any patient/family concerns.

If the RePECT is reversed, Physician is to request re-activation of VT/VF shock and ATP therapy. The above steps should be repeated/reversed.

4.3 Procedure for Deactivation – Patients Undergoing Surgery

This service is not currently available at Bassetlaw Hospital; therefore procedures for patients with ICD/CRT-D should be arranged for Doncaster Royal Infirmary.

The greatest risks to ICD/CRT-D patients in relation to surgery are inappropriate therapies delivered during the procedure should the device remain active, and failure of ICD reactivation following the procedure, either of which may damage health or cause death.

Effective communication and planning will ensure that therapies are deactivated and reactivated by appropriate staff at an appropriate time. Planned procedure dates and device details are to be provided to Cardio-Respiratory Manager via e-mail (dbth.invasivecardiology@nhs.net) to ensure adequate staffing and timescales.

Pre-Op Assessment Service to identify patients with ICD/CRT-D. The Consultant anaesthetist/Consultant surgeon (or deputy) must determine whether deactivation is required.

This will depend on the type of surgical procedure. Consideration should be given to the use of surgical diathermy/electrocautery, and other high voltage equipment.

Consultant anaesthetist/surgeon (or deputy) managing the surgical admission to authorise deactivation of ICD for surgery and clearly document in care plan. Liaison with the ICD centre or consultant cardiologist may be required.

Physician requesting deactivation must complete patient consent and education prior to procedure.

Pre-Op Assessment Service or Consultant team to ascertain make/model of implanted device. The device cannot be deactivated without this information:

- Each patient should carry their ICD Identification Card
- Contact ICD clinic at Sheffield Northern General Hospital, ICD Clinic at Leeds General Infirmary, or Cardiac Device suite at Rotherham General Hospital

On date of procedure, contact pacing physiologist (ext. 642456) to attend and **disable <u>ALL TACHYARRHYTHMIA THERAPIES/or DETECTION</u>** on device and clearly document in medical record. Please note: Bradycardia pacing therapy **must** remain active. The patient should be closely monitored from the time of deactivation until the time of reactivation, with an external defibrillator readily available.

- Programmer printout to be stored in Departmental Records within the Cardio-respiratory Department to confirm device status
- Where-ever possible, diagnostics data to be stored electronically or printed

The physiologist will deactivate the device after confirming that it is clearly documented and authorised for them to do so, or with verbal authorisation from physician should the procedure be clearly in the best interests of the patient and organisation: which will be documented by the physiologist.

Following completion of surgery, the physician is to contact pacing physiologist to perform **re-activation of TACHYARRHYTHMIA THERAPIES** and document in ICP/medical records.

In urgent circumstances, should appropriately qualified staff be unavailable to perform formal deactivation, temporary deactivation using a magnet should be considered, at the discretion of the physician, who is ultimately responsible for the patient's treatment and safety. See section 4.6 - Emergencies.

4.4 Procedure for Deactivation – Patients Undergoing Endoscopy

This service is not currently available at Bassetlaw Hospital; therefore procedures for patients with ICD/CRT-D should be arranged for Doncaster Royal Infirmary.

The greatest risks to ICD/CRT-D patients in relation to endoscopy are inappropriate therapies delivered during the procedure should the device remain active, and failure of ICD reactivation following the procedure, either of which may damage health or cause death.

Effective communication and planning will ensure that therapies are deactivated and reactivated by appropriate staff at an appropriate time. Planned procedure dates and device details are to be provided to Cardio-Respiratory Manager via e-mail (dbth.invasivecardiology@nhs.net) to ensure adequate staffing and timescales.

Patients with ICD/CRT-D should be identified by the referring physician, and discussed with relevant consultant gastroenterologist/endoscopist to determine whether deactivation is required. This will depend on the type of procedure, whether it is diagnostic only or interventional. Consideration should be given to the likelihood of using surgical diathermy, whether diathermy is to be used in monopolar or bipolar mode, the proximity to the device and potential for interference.

The consultant in charge of the patient needs to authorise deactivation of ICD pre-procedure and clearly document in care plan. Liaison with the ICD centre or consultant cardiologist may be required.

Physician requesting deactivation must complete patient consent and education prior to procedure.

The referring consultant team must ascertain the make/model of implanted device. The device cannot be deactivated without this information:

- Each patient should carry their ICD Identification Card
- Contact ICD clinic at Sheffield Northern General Hospital, ICD Clinic at Leeds General Infirmary, or Cardiac Device suite at Rotherham General Hospital

On date of procedure, contact pacing physiologist (ext. 642456) to attend and **disable ALL TACHYARRHYTHMIA THERAPIES/or DETECTION** on device and clearly document on procedure record. Please note: Bradycardia pacing therapy **must** remain active. The patient should be closely monitored from the time of deactivation until the time of reactivation, with an external defibrillator readily available.

- Programmer printout to be stored in Departmental Records within the Cardio-respiratory Department to confirm device status
- Where-ever possible, diagnostics data to be stored electronically or printed

The physiologist will deactivate the device after confirming that it is clearly documented and authorised for them to do so, or with verbal authorisation from physician should the procedure be clearly in the best interests of the patient and organisation: which will be documented by the physiologist.

Following completion of the procedure, the physician team is to contact pacing physiologist to perform **re-activation of TACHYARRHYTHMIA THERAPIES** and document in ICP/medical records.

In urgent circumstances, should appropriately qualified staff be unavailable to perform formal deactivation, temporary deactivation using a magnet should be considered, at the discretion of the physician, who is ultimately responsible for the patient's treatment and safety. See section 4.6 - Emergencies.

4.5 Procedure for Deactivation - Deceased patients

It is the legal responsibility of the doctor completing the death certificate to inform the Mortuary of the presence of an implantable cardiac device, by completing a 'Deceased Details and Mortuary Transfer Document' stating that a Defibrillator (ICD/CRT-D) is in situ.

Mortuary to confirm presence of ICD/CRT-D

Mortuary staff to source manufacturer of implanted device where possible

- Each patient should carry their ICD Identification Card
- Contact ICD clinic at Sheffield Northern General Hospital or ICD Clinic at Leeds General Infirmary

Mortuary staff to contact pacing physiologists to request deactivation

- Contact Cardio-Respiratory Department on ext. 642456
- Mortuary to state make/model of device

Pacing physiologist to **disable <u>ALL TACHYARRHYTHMIA THERAPIES/or DETECTION</u>** on device, which is verbally communicated with mortuary staff, with a copy of new device parameters stored in Mortuary to confirm device status

- Where-ever possible, diagnostics data to be stored electronically or printed
- Where necessary, send data to ICD Centre for review
- Copies of data to be stored in Departmental Records within the Cardio-Respiratory Dept.

4.6 Emergencies

The pacing physiologists will provide the ICD Deactivation Service **<u>during office hours only Monday- Friday</u>.** Surgical cases should be listed first to ensure adequate time for re-activation.

Ward nursing staff or referring physician/surgeon to source manufacturer of implanted device. The device cannot be deactivated without this information:

- Each patient should carry their ICD Identification Card
- Contact ICD clinic at Sheffield Northern General Hospital, ICD Clinic at Leeds General Infirmary, or Cardiac Device suite at Rotherham General Hospital

Contact pacing physiologists to request deactivation/reactivation:

- Contact Cardio-respiratory Department ext. 642456
- Ward nursing staff MUST state manufacturer of device

In the event of an emergency outside these hours, a **ring magnet** (contact Sister on CCU for magnet) can be secured over the device and will temporarily disable shock/ATP therapy in most, but not all, ICD/CRT-D; advice should be sought from the implanting centre to ascertain the magnet response before proceeding, and to determine any specific ICD aftercare.

Nursing staff should position the magnet after appropriate documentation in the medical record from the consultant or deputy.

Please be aware that the magnet must be correctly and securely positioned, otherwise it may not deactivate the device (Appendix 3). The device must be reprogrammed as de-activated by the pacing physiologist at the earliest opportunity – if applicable.

4.7 Interrogation for Diagnostic Purposes

This procedure document would like to acknowledge the value of interrogating ICD/CRT-D devices to aid diagnosis. In cases where patients are admitted following ICD/CRT-D discharge or syncope, appropriately trained physiologists may interrogate the device to determine whether shock therapy was appropriate or arrhythmias occurred. This can aid the decision to transfer patients to the tertiary centre for comprehensive ICD/CRT-D assessment.

Within the scope of the physiologist's professional role it may be clear that tachycardia therapies require deactivating for patient safety (lead fracture, lead displacement). This should be performed and clearly documented in the patient's notes and communicated to the medical team, ensuring there is a plan to remedy the presenting problem.

Although BH cannot provide staff to deactivate devices for surgery/endoscopy, or interrogate devices to investigate therapies and symptoms, in urgent circumstances, Medtronic and Abbott devices can be downloaded for review by physiologists at DRI. It is also possible, with negotiation, that staff from DRI may attend the hospital with Boston Scientific/MicroPort/Biotronik programmers to interrogate other devices.

4.8 Magnetic Resonance Imaging (MRI)

The Radiology Department does not yet support MRI scanning for patients with cardiac devices, despite them being CE marked as MRI conditional. This situation will hopefully change in the near future, and with it will come requests to reprogram pacemakers, CRT-P, ICD, and CRT-D devices into MRI safe modes; which is essentially the same as ICD/CRT-D deactivation.

We anticipate a similar service structure to our current model, with planned scans being communicated to the departmental manager, who will allocate time and staff on our rota for such activities.

4.9 Patients lacking capacity

Sometimes it will be necessary to provide care and treatment to patients who lack the capacity to make decisions related to the content of this policy. In these instances staff must treat the patient in accordance with the Mental Capacity Act 2005 (MCA 2005).

- A person lacking capacity should not be treated in a manner which can be seen as discriminatory.
- Any act done for, or any decision made on behalf of a patient who lacks capacity must be done, or made, in the persons Best Interest.
- Further information can be found in the MCA policy, and the Code of Practice, both available on the intranet.

There is no single definition of Best Interest. Best Interest is *determined on an individual basis. All factors relevant to the decision must be taken into account, family and friends should be consulted, and the decision should be in the Best interest of the individual. Please see S5 of the MCA code of practice for further information.*

5. TRAINING/ SUPPORT

Cardiac physiologist/s providing this service will maintain their skills with Partner Trusts e.g. Northern General Hospital, Sheffield & Leeds General Infirmary, Rotherham General Hospital. This is monitored through the Cardio-Respiratory department.

Manufacturing companies provide support with training courses when required/available and for device related advice. In rare instances the representatives may attend to deactivate devices or provide technical support. Boston Scientific subcutaneous ICDs are the only device which we do not have access to a programmer for; hence we would need their support and assistance for such devices.

Information regarding ring magnet positioning is in Appendix 3, and further detailed in the British Heart Rhythm Society Guidelines for the management of Patients with cardiac Implantable Electronic Devices (CIEDs) around the Time of Surgery (BHRS, 2020).

6. MONITORING COMPLIANCE WITH THE PROCEDURAL DOCUMENT

What is being Monitored	Who will carry out the Monitoring	How often	How Reviewed/ Where Reported to
The service will be reviewed when new national or international guidance are received	Pacing/ICD Service Lead, Cardio-Respiratory Department Clinical Governance	Bi-monthly	Reported to Cardiology Clinical Governance.
When newly published evidence demonstrates the need to change current practice	Pacing/ICD Service Lead, Cardio-Respiratory Department Clinical Governance	Bi-monthly	Reported to Cardiology Clinical Governance.

7. DEFINITIONS & ABBREVIATIONS

DRI	Doncaster Royal Infirmary
BH	Bassetlaw Hospital
ICD	Implantable Cardioverter Defibrillator
CRT-D	Cardiac Resynchronisation Therapy device with Defibrillation Function
ReSPECT	Recommended Summary Plan for Emergency Care and Treatment
VT	Ventricular Tachycardia
VF	Ventricular Fibrillation
ATP	Anti-Tachycardia Pacing
ICP	Integrated Care Pathway
CCU	Coronary Care Unit
EOL	End of Life

8. EQUALITY IMPACT ASSESSMENT

The Trust aims to design and implement services, policies and measures that meet the diverse needs of our service, population and workforce, ensuring that none are disadvantaged over others. Our objectives and responsibilities relating to equality and diversity are outlined within our equality schemes. When considering the needs and assessing the impact of a procedural document any discriminatory factors must be identified.

An Equality Impact Assessment (EIA) has been conducted on this procedural document in line with the principles of the Equality Analysis Policy (CORP/EMP 27) and the Fair Treatment For All Policy (CORP/EMP 4).

The purpose of the EIA is to minimise and if possible remove any disproportionate impact on employees on the grounds of race, sex, disability, age, sexual orientation or religious belief. No detriment was identified. EIA included, see Appendix 4.

9. ASSOCIATED TRUST PROCEDURAL DOCUMENTS

PAT/EC 8 – Recommended Summary Plan for Emergency Care and Treatment (ReSPECT) Policy
PAT/PA 27 – Advance Decision to Refuse Treatment (ADRT) Policy
PAT/T 65 – End of Life: Guidelines for the Management of Patients in last hours/days of life
CORP/EMP 27 – Equality Analysis Policy
CORP/EMP 11 – Professional Registrations Policy – Fitness to Practice
PAT/PA 19 – Mental Capacity Act 2005 Policy and Procedure, including Deprivation of Liberty Safeguards (DoLS)
PAT/PA 28 – Privacy and Dignity Policy
COMP/EMP 4 – Fair Treatment for All Policy

10. DATA PROTECTION

Any personal data processing associated with this policy will be carried out under 'Current data protection legislation' as in the Data Protection Act 2018 and the General Data Protection Regulation (GDPR) 2016.

For further information on data processing carried out by the trust, please refer to our Privacy Notices and other information which you can find on the trust website:
https://www.dbth.nhs.uk/about-us/our-publications/information-governance/

11. REFERENCES

This procedure document was developed following a review of the following documents and guidelines:

Arrhythmia Alliance (2017). CRT / ICD /S-ICD Patient Information. Booklet, April 2005 reviewed April 2020. Available at URL:
http://www.heartrhythmalliance.org/resources/view/274/pdf

British Heart Foundation: ICD deactivation at the end of life: Principles and practice. Accessed August 2020 at URL:
https://www.bhf.org.uk/informationsupport/publications/living-with-a-heart-condition/icd-deactivation-at-the-end-life

British Heart Rhythm Society (2016). British Heart Rhythm Society: Guidelines for the management of Patients with cardiac Implantable Electronic Devices (CIEDs) around the Time of Surgery. Accessed April 2020 at URL:
https://bhrs.com/wp-content/uploads/2019/05/Revised-guideline-CIED-and-surgery-Feb-19.pdf

British Society for Dermatological Surgery & British Heart Rhythm Society (2020): Guidance on Implanted Devices & Dermatological Surgery. Accessed April 2020 at URL:
https://bhrs.com/wp-content/uploads/2019/05/170711-tl-BSDS-BHRS-Implanted-Cardiac-Devices-Skin-Surgery-v1_8.pdf

Stoelevaar et al (2020). Implantable cardioverter defibrillator deactivation and advance care planning: a focus group study (BMJ 106/3). Accessed April 2020 at URL:
https://heart.bmj.com/content/106/3/190

Fahlberg B. Deactivating ICDs at end of life (2018). Nursing Centre (Nursing 2020 48/6). Accessed April 2020 at URL:
https://www.nursingcenter.com/journalarticle?Article_ID=4676802

APPENDIX 1 – CONTACT DETAILS – DEVICE MANUFACTURER

Contact Details - Device Manufacturer

Manufacturer	Address	Contact Details
Biotronik	Biotronik UK Ltd Biotronik House Avonbury Business Park Bicester OX26 2UA	Tel: 01869 362100 Fax: 01869 362101 Mob: 07850 407940 ***24 hour Helpline*** ***0800 1951030***
Boston Scientific	Boston Scientific Limited Breakspear Park Breakspear Way Hemel Hempstead Herts HP2 4TZ	Tel: 01442 411600 Fax: 01442 411601 **European Technical Service** **003224167222 (24hr helpline)**
Medtronic / Vitatron	Medtronic Ltd Building 9 Croxley Park Watford, Herts WD18 8WW	Tel: 01923 212213 Fax: 01923 241004 ***Direct 24hour Helpline*** ***08702 403304***
MicroPort CRM UK (Previously LivaNova, Sorin Group, ELA Medical)	Willow House, Park West, Sealand Road, Chester, England, CH1 4RJ	Phone: +44 1516032810 Fax: +44 2076600477 ***24hour Helpline*** ***0844 7369637***
Abbott (Previously St. Jude Medical)	Elder House, Blythe Valley Park, Central Boulevard, Shirley, Solihull B90 8AJ Contact number	Tel: 0800 3892711 Fax: 0800 389 2722 Lifeline 24hour helpline ***07808 910454***

APPENDIX 2 – DBTH EOL DEACTIVATION PRO FORMA (AVAILABLE FROM CARDIORESPIRATORY DEPT)

Doncaster and Bassetlaw Teaching Hospitals NHS
NHS Foundation Trust

Cardio-respiratory Dept. Doncaster Royal Infirmary Ext. 642456 / 642468

Deactivation of Implantable Defibrillator (ICD / CRT-D)

(for patients with advance decision to refuse rescusitation or approaching end-of-life)

Date:

Implanting / Follow-up* Hospital: **Make* / Model:**

**details should be available from ID card carried by patient*

Patient: **Physician:**

ID: **DOB:** **Address:**

Reason for request:.....

.....

Current ReSPECT in place, not for rescusitation? **Yes / No**

Does the patient have capacity to make this decision? **Yes / No ****

*** for patients without capacity see trust policy*

The decision could not be discussed with family / NOK but I confirm is in the best interest of the patient [ ]

I confirm that the following has been discussed with the patient and/or family regarding ICD deactivation; [ ]

1. The device will no longer provide life saving therapies for ventricular tachyarrhythmias.
2. Deactivation will not cause immediate death or pain.
3. The patient has been commenced on the individualised plan of care for the last hours/days of life.
4. The decision can be reviewed if necessary.

Signature of Health Professional *Printed name and date*

I am satisfied that the ICD deactivation process has been conducted appropriately, and that the patient and/or family understand and have verbally consented to deactivating ventricular tacharrhythmia therapies.

Signature of Cardiac Physiologist *Printed name and date*

Date and time of ICD deactivation

(please attach programmer print of tachy detection and therapy settings, and consider disabling patient alerts / notifiers).

This completed form is to be filed in Medical Notes.

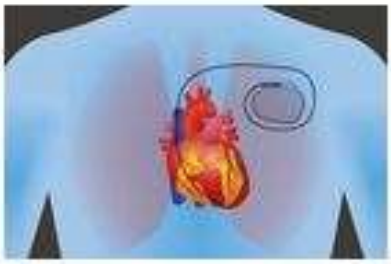
Implanting / Follow-up Hospital must be informed of deactivation.

APPENDIX 3 – MAGNET DEACTIVATION - TEMPORARY

Doncaster and Bassetlaw Teaching Hospitals NHS
NHS Foundation Trust

Urgent Implanted Defibrillator Deactivation (ICD/CRT-D)

The magnet must be removed for at least 30 seconds every 7 hours to prevent high voltage therapies from being automatically reenabled.



Trans-venous ICD

Subcutaneous ICD

Transvenous ICD

Subcutaneous ICD

Magnets are available from CCU, ED, and Cardio-Respiratory Department

If you are unsure please contact us on 01302 642456/642468.

APPENDIX 4 – EQUALITY IMPACT ASSESSMENT PART 1 INITIAL SCREENING

Service/Function/Policy/ Project/Strategy	Division/Executive Directorate and Department	Assessor (s)	New or Existing Service or Policy?	Date of Assessment
Deactivation of Implantable Cardioverter Defibrillator (ICD) and Cardiac Resynchronisation Therapy Defibrillator (CRT-D) Devices – Procedure – PAT/T 55 v.4	Division of Medicine, Cardio-Respiratory Department	Scott Walton	Existing Service/Policy	July 2020

1) Who is responsible for this policy? Name of Division/Directorate Cardio-Respiratory Department, DRI

2) Describe the purpose of the service / function / policy / project/ strategy? Who is it intended to benefit? What are the intended outcomes?
Benefit: Inpatients requiring deactivation of these devices or interrogation of devices to check whether they have had appropriate/inappropriate shocks,
Theatre & Endoscopy patients who require these devices deactivating prior to the procedure,
Mortuary personnel where these devices need deactivating prior to removal from the body.
Intended outcome: To provide an efficient deactivation service for patients admitted to DRI

3) Are there any associated objectives? Legislation, targets national expectation, standards
MHRA medical device alert 22/09/2008 – MDA/2008/068 Implantable Cardioverter Defibrillators

British Heart Rhythm Society (2016, Revised 2019) British Heart Rhythm Society: Guidelines for the management of Patients with cardiac Implantable Electronic Devices (CIEDs) around the Time of Surgery. Accessed April 2020 at:
https://bhrs.com/wp-content/uploads/2019/05/Revised-guideline-CIED-and-surgery-Feb-19.pdf

British Society for Dermatological Surgery (BSDS) & British Heart Rhythm Society (BHRS): Guidance on Implanted Devices & Dermatological Surgery. Accessed April 2020 at:
https://bhrs.com/wp-content/uploads/2019/05/170711-tl-BSDS-BHRS-Implanted-Cardiac-Devices-Skin-Surgery-v1_8.pdf

British Heart Foundation: ICD deactivation at the end of life: Principles and practice. Accessed August 2020 at:
https://www.bhf.org.uk/informationsupport/publications/living-with-a-heart-condition/icd-deactivation-at-the-end-life

4) What factors contribute or detract from achieving intended outcomes? –
Contribute**:** Specific trained staff, in-house facilities (programmers)
Detract: Staffing levels

5) Does the policy have an impact in terms of age, race, disability, gender, gender reassignment, sexual orientation, marriage/civil partnership, maternity/pregnancy and religion/belief? Details: [see Equality Impact Assessment Guidance] –
Positive impact on patients with ICD & CRT-D devices (These patients cover a broad spectrum of ages, gender & race)

- **If yes, please describe current or planned activities to address the impact** [e.g. Monitoring, consultation] –

6) Is there any scope for new measures which would promote equality? [any actions to be taken]

7) Are any of the following groups adversely affected by the policy?

Protected Characteristics	**Affected?**	**Impact**
a) Age	no	
b) Disability	no	
c) Gender	no	
d) Gender Reassignment	no	
e) Marriage/Civil Partnership	no	
f) Maternity/Pregnancy	no	
g) Race	no	
h) Religion/Belief	no	
i) Sexual Orientation	no	

8) Provide the Equality Rating of the service / function /policy / project / strategy – tick outcome box

Outcome 1✓	**Outcome 2**	**Outcome 3**	**Outcome 4**

If you have rated the policy as having an outcome of 2, 3 or 4, it is necessary to carry out a detailed assessment and complete a* **Detailed Equality Analysis form in Appendix 4

Date for next review: 01/09/2023

Checked by: Howard Briggs **Date:** July 2020