

**HRUK**

Heart Rhythm UK



CERTIFICATE OF ACCREDITATION  
(NURSE - DEVICES)

**PRACTICAL LOGBOOK**

**BY**

## **DIRECTIONS FOR CANDIDATE AND ASSESSOR**

### **Time scale for Completion of log book**

The log book needs to be submitted by 31<sup>st</sup> December of the year following successful completion of the HRUK examination.

### **Successful completion of the logbook**

All sections of the logbook should be fully completed and signed off by the candidate and assessor. Assessment should take place within the clinical area.

**One assessment of competence should be performed for each of the following implantable devices: pacemaker, implantable cardioverter defibrillator (ICD), cardiac resynchronisation pacemaker (CRT-P), cardiac resynchronisation ICD (CRT-D).**

### **Assessors**

Assessors should be senior members of staff with the appropriate experience and qualifications.

## PRE IMPLANT ASSESSMENT OF PATIENT

### CLINICAL & TECHNICAL KNOWLEDGE

<p>Describes detailed knowledge of indications for device implant</p>	<ul style="list-style-type: none"> <li>• Demonstrates ability to explain the cardiac conduction system</li> <li>• Demonstrates ability to describe indications for device implant and mechanisms of underlying rhythm, varying degrees of heart block, sick sinus syndrome, carotid hypersensitivity, chronotropic incompetence, atrial fibrillation, long QT syndrome, VT, VF, left ventricular dyssynchrony</li> </ul>
<p>Describes in detail, to patients the reasons for implant, the implant procedure and the patient journey</p>	<ul style="list-style-type: none"> <li>• Discusses reason for implant to the patient</li> <li>• Discusses implant procedure to the patient including risks and benefits <ul style="list-style-type: none"> <li>▪ Discusses types of analgesia and antibiotic therapy if required</li> <li>▪ Discusses recovery procedure with patient and any post procedure checks that are required</li> <li>▪ Discusses length of hospital stay/discharge and follow up procedure with patient</li> </ul> </li> <li>• Discusses any pertinent DVLA regulations or any other restrictions with the patient</li> <li>• Encourages the patient to ask questions</li> </ul>

### PATIENT ASSESSMENT

<p>Takes accurate history</p>	<ul style="list-style-type: none"> <li>• Obtains history of presenting complaint</li> <li>• Obtains complete health history</li> <li>• Obtains details of current drug therapy, concordance and any adverse reactions</li> </ul>
<p>Assesses patient psychological status and explains to patient possible implications of device implant on future lifestyle</p>	<ul style="list-style-type: none"> <li>• Explains to patient any possible implications on future lifestyle e.g. ICD/CRT-D patients are told about possible shocks and what they may feel like; restrictions on driving and working at heights; electromagnetic interference and how this may effect them at work etc.</li> <li>• Assessment tools such as HAD score is completed and dates for reassessment are set</li> </ul>
<p>Performs and documents comprehensive physical examination of cardiovascular system and respiratory system</p>	<ul style="list-style-type: none"> <li>• Examines cardiovascular system</li> <li>• Examines respiratory system</li> </ul>

Obtains ECG and bloods (FBC & U & Es) and competently analyses findings	<ul style="list-style-type: none"> <li>• Obtains relevant tests and competently analyses findings</li> <li>• Demonstrates ability to act appropriately with regards to any abnormal findings</li> </ul>
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**LEGAL AND ETHICAL ISSUES SURROUNDING AUTONOMY AND CONSENT**

Discusses and reiterates the risks and benefits of device implant in accordance with local and national guidance	<ul style="list-style-type: none"> <li>• Explains commonly occurring risks and benefits to the patient</li> <li>• Answers patients questions competently</li> </ul>
Explains the consent form and invites the patient to sign	<ul style="list-style-type: none"> <li>• Can discuss legal and ethical issues               <ul style="list-style-type: none"> <li>○ Department of Health policy,</li> <li>○ Hospital Trust policy on consent / nurse led consent policy</li> </ul> </li> </ul>

**DOCUMENTATION**

Records relevant data accurately and clearly	<ul style="list-style-type: none"> <li>• Documents clinical details on clinic &amp; clerking proforma</li> </ul>
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## DEVICE IMPLANT ASSESSMENT

Must observe at least one of each device implant pacemaker/ICD/CRT device

Procedure	Comments
Knowledge of patient history and rationale for implant	<ul style="list-style-type: none"> <li>• Demonstrates knowledge with regards to indication for device implant</li> <li>• Demonstrates knowledge with regards to national guidance and device implant e.g. NICE guidelines</li> </ul>
Demonstrates knowledge with regards to selection of appropriate device and leads	<ul style="list-style-type: none"> <li>• Discusses with operator physiologist/specialist nurse appropriate lead selection</li> </ul>
Observes attachment of electrodes and leads	<ul style="list-style-type: none"> <li>• Demonstrates understanding of rationale behind electrode and lead placement</li> </ul>
Observes correct placement of external defibrillator pads	<ul style="list-style-type: none"> <li>• Demonstrates understanding of rationale behind placement of external defibrillator pads</li> </ul>
Observes administration of drugs during procedure and demonstrates understanding of drug action	<ul style="list-style-type: none"> <li>• Demonstrates knowledge of action of any drugs used during procedure and appropriate reversal agents where applicable: <ul style="list-style-type: none"> <li>○ antibiotics</li> <li>○ sedatives</li> <li>○ analgesia</li> <li>○ local anaesthesia</li> </ul> </li> </ul>
Observes monitoring of patient observations throughout procedure and demonstrates knowledge with regards to rationale behind this	<ul style="list-style-type: none"> <li>• Demonstrates knowledge of observations to be monitored</li> <li>• Demonstrates ability to recognise and act appropriately if observations deviate from normal limits</li> </ul>
Demonstrates knowledge with regards to importance of correct programmer being available	<ul style="list-style-type: none"> <li>• Demonstrates understanding with regards to importance of correct programmer being available</li> </ul>
Observes preparation of device site and incision being made	<ul style="list-style-type: none"> <li>• Demonstrates knowledge with regards to rationale behind preparation of device site</li> </ul>
Observes lead/device positioning including positioning of LV lead (CRT devices)	<ul style="list-style-type: none"> <li>• Demonstrates knowledge with regards to lead/device positioning</li> <li>• Demonstrates understanding of coronary sinus anatomy</li> </ul>

<b>Procedure</b>	<b>Comments</b>
Observes measurement of lead amplitude(s)	<ul style="list-style-type: none"> <li>• Demonstrates understanding of rationale behind measurement of lead amplitude(s)</li> <li>• Demonstrates knowledge of appropriate range of measurement</li> </ul>
Observes measurement of lead impedance(s)	<ul style="list-style-type: none"> <li>• Demonstrates understanding of rationale behind measurement of lead impedance(s) through PSA</li> <li>• Demonstrates knowledge of appropriate range of measurement</li> </ul>
Observes measurement of lead threshold(s)	<ul style="list-style-type: none"> <li>• Demonstrates understanding of rationale behind measurement of lead threshold(s) (including LV leads)</li> <li>• Demonstrates knowledge of appropriate range of measurement</li> </ul>
Observes suturing of wound	<ul style="list-style-type: none"> <li>• Demonstrates knowledge with regards to choice of suture and suture technique</li> </ul>
Observes programming of bradycardia mode <ul style="list-style-type: none"> <li>• Standard and post-shock</li> <li>• Correct mode selection</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrates understanding of need for programming of bradycardia mode</li> </ul>
Observes battery status check	<ul style="list-style-type: none"> <li>• Demonstrates understanding of battery status check</li> </ul>
Observes manual auto-cap reform being performed	<ul style="list-style-type: none"> <li>• Demonstrates understanding of rationale behind auto-cap reform</li> </ul>
Observes checking of device being switched off prior to hand-over for implantation	<ul style="list-style-type: none"> <li>• Demonstrates understanding of importance of checking that device is switched off prior to hand-over for implantation</li> </ul>
Demonstrates knowledge with regards to correct positions for lead connection to device	<ul style="list-style-type: none"> <li>• Demonstrates understanding of correct positions for lead connection to device</li> </ul>
Observes measurement of lead amplitude(s) through device	<ul style="list-style-type: none"> <li>• Demonstrates understanding of rationale behind measurement of lead amplitude(s) through device</li> <li>• Demonstrates knowledge of appropriate range of measurement</li> </ul>
Observes measurement of lead impedance(s) through device	<ul style="list-style-type: none"> <li>• Demonstrates understanding of rationale behind measurement of lead impedance(s) through device</li> <li>• Demonstrates knowledge of appropriate range of measurement</li> </ul>

<b>Procedure</b>	<b>Comments</b>
Observes measurement lead threshold(s) through device	<ul style="list-style-type: none"> <li>• Demonstrates understanding of rationale behind measurement of lead threshold(s) through device</li> <li>• Demonstrates knowledge of appropriate range of measurement</li> </ul>
Observes set up of device pre-induction <ul style="list-style-type: none"> <li>• Tachycardia detection</li> <li>• Tachycardia therapy</li> <li>• Sensitivity</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrates understanding of device pre induction</li> </ul>
Demonstrates knowledge of induction methods	<ul style="list-style-type: none"> <li>• Demonstrates knowledge with regards to induction methods</li> </ul>
Observes post induction analysis of EGMs	<ul style="list-style-type: none"> <li>• Demonstrates knowledge with regards to post induction EGMs</li> </ul>
Observes post implant device programming <ul style="list-style-type: none"> <li>• Bradycardia</li> <li>• Tachycardia detection and therapies</li> <li>• Sensitivity</li> <li>• Other</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrates knowledge with regards to post implant device programming</li> </ul>
Observes completion of appropriate documentation <ul style="list-style-type: none"> <li>• ID card</li> <li>• Implant forms</li> <li>• Save to disk/programmer</li> <li>• Medical records</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstrates knowledge with regards to appropriate documentation</li> </ul>

## **DISCHARGE PROCEDURE**

### **CLINICAL & TECHNICAL KNOWLEDGE**

Establishes with the patient that the planned treatment is completed	<ul style="list-style-type: none"> <li>• Discusses details of procedure with the patient</li> <li>• Answers patient questions competently</li> <li>• Explains need for re do procedure as necessary</li> </ul>
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### **ENSURES THAT PATIENT MEETS THE RELEVANT DISCHARGE CRITERIA**

Ensures patient observations are within normal limits	<ul style="list-style-type: none"> <li>• Checks BP/pulse/temperature</li> </ul>
Ensure that device site is satisfactory i.e. no signs of bleeding, bruising infection. Checks that sutures have been trimmed (when appropriate)	<ul style="list-style-type: none"> <li>• Checks wound site and takes any necessary action if abnormalities detected</li> </ul>

<p>Ensures that patient is advised of any medication changes(if any)</p>	<ul style="list-style-type: none"> <li>• Reviews current medication</li> <li>• Identifies any medications that may be discontinued and discusses changes with the patient</li> <li>• Identifies any medications that may need to be prescribed and discuss with patient</li> <li>• Identifies any medications that may need to be increased and discuss with the patient</li> <li>• Ensure patient has supply of prescribed medication prior to discharge</li> </ul>
<p>Ensures that the patient is informed of the current DVLA regulations with regards to device implant</p>	<ul style="list-style-type: none"> <li>• Explains to the patient that they should not drive for time span specified in DVLA (this will vary dependent on device and reason for implant)</li> <li>• Explains rationale for driving restrictions to the patient</li> <li>• Explains procedure for reporting to DVLA when appropriate</li> </ul>
<p>Advises patient with regards to follow up appointment</p>	<ul style="list-style-type: none"> <li>• Informs patient that they will need a follow up appointment</li> <li>• Gives a time scale for expected appointment date to patient</li> <li>• Explains to patient rationale and importance of follow up appointment</li> </ul>

## **PATIENT FOLLOW-UP**

### **CLINICAL & TECHNICAL KNOWLEDGE**

<p>Demonstrates awareness of appropriate clinic preparation/set up</p>	<ul style="list-style-type: none"> <li>• Access to resuscitation equipment</li> <li>• ICD file and medical notes available prior to clinic</li> <li>• Relevant programmer available</li> <li>• Understanding of current DVLA guidelines</li> </ul>
<p>Observes/demonstrates physical examination of patient</p>	<ul style="list-style-type: none"> <li>• Demonstrates understanding of rationale behind examination of wound. Check for:             <ul style="list-style-type: none"> <li>○ Inflammation, redness, exudates</li> <li>○ Wound discomfort, erosion, migration</li> </ul> </li> <li>• Symptomatic clinical assessment:             <ul style="list-style-type: none"> <li>○ Tachycardia related</li> <li>○ Other cardiac symptoms e.g. angina, presyncope, syncope, heart failure</li> </ul> </li> <li>• Cardiovascular/respiratory examination (if necessary)</li> </ul>

<p>Demonstrates knowledge of patient medications and their actions</p>	<ul style="list-style-type: none"> <li>• Demonstrates ability to assess current patient medications</li> <li>• Demonstrates knowledge with regards to indications and use of cardiac medications, doses, interactions and common side-effects</li> <li>• Liaises with medical staff with regards to any potential changes to drug therapy that may be required</li> <li>• Discusses any potential changes to drug therapy with the patient</li> </ul>
<p>Demonstrates knowledge with regards to possible psychological implications of device implant</p>	<ul style="list-style-type: none"> <li>• Communicates with the patient effectively</li> <li>• Assesses patients psychological status using assessment tool such HAD scoring system</li> <li>• Demonstrates ability to act on any adverse findings</li> <li>• Refers on to appropriate health care professionals when necessary</li> </ul>
<p>Observes examination of stored data</p>	<ul style="list-style-type: none"> <li>• Demonstrates understanding of rationale behind full device interrogation including printing of all parameter and diagnostic information (e.g. therapy summary, episode log, counters, lead impedance trends etc.)</li> <li>• Demonstrates understanding of rationale behind retrieval and examination of episode data (stored EGMs, intervals and markers)</li> </ul>
<p>Observes testing of device</p>	<ul style="list-style-type: none"> <li>• Demonstrates understanding of rationale behind examination of real-time ECG/EGMs checking for noise/far field signals</li> <li>• Demonstrates understanding of rationale behind battery status check</li> <li>• Demonstrates understanding of rationale behind last auto-capacitor formation check</li> <li>• Demonstrates understanding of rationale behind measurement of intracardiac signal(s)</li> <li>• Demonstrates understanding of rationale behind measurement of lead impedance(s)</li> <li>• Demonstrates understanding of rationale behind measurement of high voltage lead impedance</li> <li>• Demonstrates understanding of rationale behind performing pacing threshold(s)</li> <li>• Demonstrates understanding of rationale behind storage of all data to disc/programmer/clear counters</li> </ul>
<p>Demonstrates knowledge with regards to advisories</p>	<ul style="list-style-type: none"> <li>• Demonstrates awareness and understanding of advisories and manufacturer/ MHRA recommendations for individually affected devices</li> </ul>

<p>Demonstrates understanding of current DVLA guidelines</p>	<ul style="list-style-type: none"> <li>• Reiterates to patient any necessary advice with regards to DVLA guidelines and driving restrictions</li> <li>• Documents any advice given with regards to driving restrictions</li> </ul>
<p>Observes alterations to device settings as necessary</p>	<ul style="list-style-type: none"> <li>• Demonstrates understanding of rationale behind any bradycardia alterations thought necessary (e.g. changes in rate response, upper tracking rate, lower rate, hysteresis etc)</li> <li>• Demonstrates understanding of rationale behind any changes to tachycardia detection/therapy thought necessary must be discussed with medical staff</li> </ul>
<p>Observes documentation/storage of all pertinent information and demonstrates understanding of rationale behind this</p>	<ul style="list-style-type: none"> <li>• Observes storage of all data to disc/programmer</li> <li>• Observes printout necessary/relevant device therapies (stored EGM, markers) and any changes to parameters</li> <li>• Observes documentation of findings in pacing file</li> </ul>

# ASSESSMENT OF COMPETENCIES - PACEMAKER

## PRE IMPLANT ASSESSMENT OF PATIENT

- 1 - 3 Unsatisfactory**
- 4 - 6 Satisfactory**
- 7 - 9 Above expected**
- 0 – Not applicable**

**You must justify each score of 1 – 3 with at least one explanation / example**

Date: .....

Name of Assessor: .....

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 – 9)</b>	<b>Assessors Comments</b>
Describes detailed knowledge of indications for device implant		
Describes in detail, to patients, the reasons for implant the implant procedure and the patient journey		

<b>Patient assessment</b>	<b>Score (1 – 9)</b>	<b>Assessors Comments</b>
Takes accurate history		
Assesses patient psychological status and explains to patient possible implications of device implant on future lifestyle		
Performs and documents comprehensive physical examination of cardiovascular system and respiratory system		
Obtains ECG and bloods (FBC & U & Es) and competently analyses findings		

**Legal and ethical issues surrounding autonomy and consent**

**Score  
(1 – 9)**

**Assessors Comments**

Discusses and reiterates the risks and benefits of device implant in accordance with local and national guidance		
Explains the consent form and invites the patient to sign		

**Documentation**

**Score  
(1 – 9)**

**Assessors Comments**

Records relevant data accurately and clearly		
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# ASSESSMENT OF COMPETENCIES - PACEMAKER

## DEVICE IMPLANT ASSESSMENT

- 1 - 3 Unsatisfactory**
- 4 - 6 Satisfactory**
- 7 - 9 Above expected**
- 0 – Not applicable**

**You must justify each score of 1 – 3 with at least one explanation / example**

Date: .....

Name of Assessor: .....

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 – 9)</b>	<b>Assessors Comments</b>
Knowledge of patient history and rationale for implant		
Demonstrates knowledge with regards to selection of appropriate device and leads		
Communicates well with patient		
Observes attachment of electrodes and leads and demonstrates understanding of rationale behind this		
Observes administration of drugs during procedure and demonstrates understanding of drug action		
Observes monitoring of patient observations throughout procedure and demonstrates knowledge with regards to rationale behind this		

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 – 9)</b>	<b>Assessors Comments</b>
Observes preparation of device site and incision being made		
Observes suturing of wound and demonstrates understanding re choice of suture		
Observes measurement of lead amplitude(s) and demonstrates knowledge of appropriate range of measurement		
Observes measurement of lead impedance(s) and demonstrates knowledge of appropriate range of measurement		
Observes measurement of lead threshold(s) and demonstrates knowledge of appropriate range of measurement		
Demonstrates knowledge with regards to correct positions for lead connection to device		
Observes completion of appropriate documentation and demonstrates understanding of rationale behind this <ul style="list-style-type: none"> <li>• ID card</li> <li>• Implant forms</li> <li>• Save to disk/programmer</li> <li>• Medical records</li> </ul>		

# ASSESSMENT OF COMPETENCIES - PACEMAKER

## DISCHARGE PROCEDURE

**1 - 3 Unsatisfactory**

**4 - 6 Satisfactory**

**7 - 9 Above expected**

**0 – Not applicable**

**You must justify each score of 1 – 3 with at least one explanation / example**

Date: .....

Name of Assessor: .....

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 – 9)</b>	<b>Assessors Comments</b>
Establishes with the patient that the planned treatment is completed		
Ensures that patient meets the relevant discharge criteria		
Ensures patient observations are within normal limits		
Ensures that device site is satisfactory i.e. no signs of bleeding, bruising infection. Checks that sutures have been trimmed (when appropriate)		
Ensures that patient is advised of any medication changes (if any)		
Ensures that the patient is informed of the current DVLA regulations with regards to device implant		

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 - 9)</b>	<b>Assessors Comments</b>
Advises patient with regards to follow up appointment		
Discharge letter completed and given to patient		

# ASSESSMENT OF COMPETENCIES - PACEMAKER

## DISCHARGE PROCEDURE

**1 - 3 Unsatisfactory**

**4 - 6 Satisfactory**

**7 - 9 Above expected**

**0 – Not applicable**

**You must justify each score of 1 – 3 with at least one explanation / example**

Date: .....

Assessor: .....

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 – 9)</b>	<b>Assessors Comments</b>
Demonstrates awareness of appropriate clinic preparation/set up		
Demonstrates knowledge with regards to advisories		
Observes examination of stored data and demonstrates understanding of rationale behind this		
Observes testing of device and demonstrates understanding of rationale behind this		
Observes alterations to device settings as necessary and demonstrates understanding of rationale behind this		
Observes/demonstrates physical examination of patient and demonstrates understanding of rationale behind this		

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 – 9)</b>	<b>Assessors Comments</b>
Demonstrates knowledge of patient medications and their actions		
Demonstrates knowledge with regards to possible psychological implications of device implant		
Observes documentation/storage of all pertinent information and demonstrates understanding of rationale behind this		

# ASSESSMENT OF COMPETENCIES - ICD

## PRE IMPLANT ASSESSMENT OF PATIENT

- 1 - 3 Unsatisfactory**
- 4 - 6 Satisfactory**
- 7 - 9 Above expected**
- 0 – Not applicable**

**You must justify each score of 1 – 3 with at least one explanation / example**

Date: .....

Name of Assessor: .....

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 – 9)</b>	<b>Assessors Comments</b>
Describes detailed knowledge of indications for device implant		
Describes in detail, to patients, the reasons for implant the implant procedure and the patient journey		

<b>Patient assessment</b>	<b>Score (1 – 9)</b>	<b>Assessors Comments</b>
Takes accurate history		
Assesses patient psychological status and explains to patient possible implications of device implant on future lifestyle		
Performs and documents comprehensive physical examination of cardiovascular system and respiratory system		
Obtains ECG and bloods (FBC & U & Es) and competently analyses findings		

**Legal and ethical issues surrounding autonomy and consent**

**Score  
(1 – 9)**

**Assessors Comments**

Discusses and reiterates the risks and benefits of device implant in accordance with local and national guidance		
Explains the consent form and invites the patient to sign		

**Documentation**

**Score  
(1 – 9)**

**Assessors Comments**

Records relevant data accurately and clearly		
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# ASSESSMENT OF COMPETENCIES - ICD

## DEVICE IMPLANT ASSESSMENT

**1 - 3 Unsatisfactory**

**4 - 6 Satisfactory**

**7 - 9 Above expected**

**0 – Not applicable**

**You must justify each score of 1 – 3 with at least one explanation / example**

Date: .....

Name of Assessor: .....

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 – 9)</b>	<b>Assessors Comments</b>
Knowledge of patient history and rationale for implant		
Demonstrates knowledge with regards to selection of appropriate device and leads		
Communicates well with patient		
Observes attachment of electrodes and leads and demonstrates understanding of rationale behind this		
Observes correct placement of external defibrillator pads and demonstrates understanding of rationale behind this		
Observes administration of drugs during procedure and demonstrates understanding of drug action		

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 - 9)</b>	<b>Assessors Comments</b>
Observes monitoring of patient observations throughout procedure and demonstrates knowledge with regards to rationale behind this		
Demonstrates knowledge with regards to importance of correct programmer being available		
Observes preparation of device site and incision being made		
Observes suturing of wound and demonstrates understanding re choice of suture		
Observes measurement of lead amplitude(s) and demonstrates knowledge of appropriate range of measurement		
Observes measurement of lead impedance(s) and demonstrates knowledge of appropriate range of measurement		
Observes measurement of lead threshold(s) and demonstrates knowledge of appropriate range of measurement		
Observes programming of bradycardia mode and demonstrates understanding of rationale behind this <ul style="list-style-type: none"> <li>• Standard and post-shock</li> <li>• Correct mode selection</li> </ul>		
Observes battery status check and demonstrates understanding of necessity of check		

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 – 9)</b>	<b>Assessors Comments</b>
Observes manual auto-cap reform being performed and demonstrates understanding of necessity of check		
Observes checking of device being switched off prior to hand-over for implantation and understands the importance of this		
Demonstrates knowledge with regards to correct positions for lead connection to device		
Observes measurement of lead amplitude(s) through device and demonstrates knowledge of appropriate range of measurement		
Observes measurement of lead impedance(s) through device and demonstrates knowledge of appropriate range of measurement		
Observes measurement lead threshold(s) through device and demonstrates knowledge of appropriate range of measurement		
Observes set up of device pre-induction and demonstrates understanding of rationale behind this <ul style="list-style-type: none"> <li>• Tachycardia detection</li> <li>• Tachycardia therapy</li> <li>• Sensitivity</li> </ul>		
Demonstrates knowledge of induction methods and demonstrates understanding of rationale behind this		
Observes post induction analysis of EGMs and demonstrates ability to analyse them		

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 – 9)</b>	<b>Assessors Comments</b>
<p>Observes post implant device programming and demonstrates understanding of rationale behind this</p> <ul style="list-style-type: none"> <li>• Bradycardia</li> <li>• Tachycardia detection and therapies</li> <li>• Sensitivity</li> <li>• Other</li> </ul>		
<p>Observes completion of appropriate documentation and demonstrates understanding of rationale behind this</p> <ul style="list-style-type: none"> <li>• ID card</li> <li>• Implant forms</li> <li>• Save to disk/programmer</li> <li>• Medical records</li> </ul>		

## ASSESSMENT OF COMPETENCIES - ICD

### DISCHARGE PROCEDURE

**1 - 3 Unsatisfactory**

**4 - 6 Satisfactory**

**7 - 9 Above expected**

**0 – Not applicable**

**You must justify each score of 1 – 3 with at least one explanation / example**

Date: .....

Name of Assessor: .....

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 – 9)</b>	<b>Assessors Comments</b>
Establishes with the patient that the planned treatment is completed		
Ensures that patient meets the relevant discharge criteria		
Ensures patient observations are within normal limits		
Ensures that device site is satisfactory i.e. no signs of bleeding, bruising infection. Checks that sutures have been trimmed (when appropriate)		
Ensures that patient is advised of any medication changes (if any)		
Ensures that the patient is informed of the current DVLA regulations with regards to device implant		

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 - 9)</b>	<b>Assessors Comments</b>
Advises patient with regards to follow up appointment		
Discharge letter completed and given to patient		

## ASSESSMENT OF COMPETENCIES - ICD

### DISCHARGE PROCEDURE

**1 - 3 Unsatisfactory**

**4 - 6 Satisfactory**

**7 - 9 Above expected**

**0 – Not applicable**

**You must justify each score of 1 – 3 with at least one explanation / example**

Date: .....

Assessor: .....

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 – 9)</b>	<b>Assessors Comments</b>
Demonstrates awareness of appropriate clinic preparation/set up		
Demonstrates knowledge with regards to advisories		
Observes examination of stored data and demonstrates understanding of rationale behind this		
Observes testing of device and demonstrates understanding of rationale behind this		
Observes alterations to device settings as necessary and demonstrates understanding of rationale behind this		
Observes/demonstrates physical examination of patient and demonstrates understanding of rationale behind this		

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 – 9)</b>	<b>Assessors Comments</b>
Demonstrates knowledge of patient medications and their actions		
Demonstrates understanding of current DVLA guidelines		
Demonstrates knowledge with regards to possible psychological implications of device implant		
Observes documentation/storage of all pertinent information and demonstrates understanding of rationale behind this		

## ASSESSMENT OF COMPETENCIES – CRT-P

### PRE IMPLANT ASSESSMENT OF PATIENT

- 1 - 3 Unsatisfactory**
- 4 - 6 Satisfactory**
- 7 - 9 Above expected**
- 0 – Not applicable**

**You must justify each score of 1 – 3 with at least one explanation / example**

Date: .....

Name of Assessor: .....

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 – 9)</b>	<b>Assessors Comments</b>
Describes detailed knowledge of indications for device implant		
Describes in detail, to patients, the reasons for implant the implant procedure and the patient journey		

<b>Patient assessment</b>	<b>Score (1 – 9)</b>	<b>Assessors Comments</b>
Takes accurate history		
Assesses patient psychological status and explains to patient possible implications of device implant on future lifestyle		
Performs and documents comprehensive physical examination of cardiovascular system and respiratory system		
Obtains ECG and bloods (FBC & U & Es) and competently analyses findings		

**Legal and ethical issues surrounding autonomy and consent**

**Score  
(1 – 9)**

**Assessors Comments**

Discusses and reiterates the risks and benefits of device implant in accordance with local and national guidance		
Explains the consent form and invites the patient to sign		

**Documentation**

**Score  
(1 – 9)**

**Assessors Comments**

Records relevant data accurately and clearly		
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# ASSESSMENT OF COMPETENCIES – CRT-P

## DEVICE IMPLANT ASSESSMENT

- 1 - 3 Unsatisfactory**
- 4 - 6 Satisfactory**
- 7 - 9 Above expected**
- 0 – Not applicable**

**You must justify each score of 1 – 3 with at least one explanation / example**

Date: .....

Name of Assessor: .....

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 – 9)</b>	<b>Assessors Comments</b>
Knowledge of patient history and rationale for implant		
Demonstrates knowledge with regards to selection of appropriate device and leads		
Communicates well with patient		
Observes attachment of electrodes and leads and demonstrates understanding of rationale behind this		
Observes administration of drugs during procedure and demonstrates understanding of drug action		

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 - 9)</b>	<b>Assessors Comments</b>
Observes monitoring of patient observations throughout procedure and demonstrates knowledge with regards to rationale behind this		
Demonstrates knowledge with regards to importance of correct programmer being available		
Observes preparation of device site and incision being made		
Observes lead/device positioning including positioning of LV lead and demonstrates knowledge with regards to anatomy		
Observes suturing of wound and demonstrates understanding re choice of suture		
Observes measurement of lead amplitude(s) and demonstrates knowledge of appropriate range of measurement		
Observes measurement of lead impedance(s) and demonstrates knowledge of appropriate range of measurement		
Observes measurement of lead threshold(s) and demonstrates knowledge of appropriate range of measurement		

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 – 9)</b>	<b>Assessors Comments</b>
<p>Observes programming of bradycardia mode and demonstrates understanding of rationale behind this</p> <ul style="list-style-type: none"> <li>• Correct mode selection</li> </ul>		
<p>Observes battery status check and demonstrates understanding of necessity of check</p>		
<p>Demonstrates knowledge with regards to correct positions for lead connection to device</p>		
<p>Observes measurement of lead amplitude(s) through device and demonstrates knowledge of appropriate range of measurement</p>		
<p>Observes measurement of lead impedance(s) through device and demonstrates knowledge of appropriate range of measurement</p>		
<p>Observes measurement lead threshold(s) through device and demonstrates knowledge of appropriate range of measurement</p>		
<p>Observes post implant device programming and demonstrates understanding of rationale behind this</p>		
<p>Observes completion of appropriate documentation and demonstrates understanding of rationale behind this</p> <ul style="list-style-type: none"> <li>• ID card</li> <li>• Implant forms</li> <li>• Save to disk/programmer</li> <li>• Medical records</li> </ul>		

## ASSESSMENT OF COMPETENCIES – CRT-P

### DISCHARGE PROCEDURE

**1 - 3 Unsatisfactory**

**4 - 6 Satisfactory**

**7 - 9 Above expected**

**0 – Not applicable**

**You must justify each score of 1 – 3 with at least one explanation / example**

Date: .....

Name of Assessor: .....

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 – 9)</b>	<b>Assessors Comments</b>
Establishes with the patient that the planned treatment is completed		
Ensures that patient meets the relevant discharge criteria		
Ensures patient observations are within normal limits		
Ensures that device site is satisfactory i.e. no signs of bleeding, bruising infection. Checks that sutures have been trimmed (when appropriate)		
Ensures that patient is advised of any medication changes (if any)		
Ensures that the patient is informed of the current DVLA regulations with regards to device implant		

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 - 9)</b>	<b>Assessors Comments</b>
Advises patient with regards to follow up appointment		
Discharge letter completed and given to patient		

## ASSESSMENT OF COMPETENCIES – CRT-P

### DISCHARGE PROCEDURE

**1 - 3 Unsatisfactory**

**4 - 6 Satisfactory**

**7 - 9 Above expected**

**0 – Not applicable**

**You must justify each score of 1 – 3 with at least one explanation / example**

Date: .....

Assessor: .....

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 – 9)</b>	<b>Assessors Comments</b>
Demonstrates awareness of appropriate clinic preparation/set up		
Demonstrates knowledge with regards to advisories		
Observes examination of stored data and demonstrates understanding of rationale behind this		
Observes testing of device and demonstrates understanding of rationale behind this		
Observes alterations to device settings as necessary and demonstrates understanding of rationale behind this		
Observes/demonstrates physical examination of patient and demonstrates understanding of rationale behind this		

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 – 9)</b>	<b>Assessors Comments</b>
Demonstrates knowledge of patient medications and their actions		
Demonstrates knowledge with regards to possible psychological implications of device implant		
Observes documentation/storage of all pertinent information and demonstrates understanding of rationale behind this		

## ASSESSMENT OF COMPETENCIES – CRT-D

### PRE IMPLANT ASSESSMENT OF PATIENT

- 1 - 3 Unsatisfactory**
- 4 - 6 Satisfactory**
- 7 - 9 Above expected**
- 0 – Not applicable**

**You must justify each score of 1 – 3 with at least one explanation / example**

Date: .....

Name of Assessor: .....

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 – 9)</b>	<b>Assessors Comments</b>
Describes detailed knowledge of indications for device implant		
Describes in detail, to patients, the reasons for implant the implant procedure and the patient journey		

<b>Patient assessment</b>	<b>Score (1 – 9)</b>	<b>Assessors Comments</b>
Takes accurate history		
Assesses patient psychological status and explains to patient possible implications of device implant on future lifestyle		
Performs and documents comprehensive physical examination of cardiovascular system and respiratory system		
Obtains ECG and bloods (FBC & U & Es) and competently analyses findings		

**Legal and ethical issues surrounding autonomy and consent**

**Score  
(1 – 9)**

**Assessors Comments**

Discusses and reiterates the risks and benefits of device implant in accordance with local and national guidance		
Explains the consent form and invites the patient to sign		

**Documentation**

**Score  
(1 – 9)**

**Assessors Comments**

Records relevant data accurately and clearly		
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# ASSESSMENT OF COMPETENCIES – CRT-D

## DEVICE IMPLANT ASSESSMENT

- 1 - 3 Unsatisfactory**
- 4 - 6 Satisfactory**
- 7 - 9 Above expected**
- 0 – Not applicable**

**You must justify each score of 1 – 3 with at least one explanation / example**

Date: .....

Name of Assessor: .....

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 – 9)</b>	<b>Assessors Comments</b>
Knowledge of patient history and rationale for implant		
Demonstrates knowledge with regards to selection of appropriate device and leads		
Communicates well with patient		
Observes attachment of electrodes and leads and demonstrates understanding of rationale behind this		
Observes correct placement of external defibrillator pads and demonstrates understanding of rationale behind this		
Observes administration of drugs during procedure and demonstrates understanding of drug action		

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 - 9)</b>	<b>Assessors Comments</b>
Observes monitoring of patient observations throughout procedure and demonstrates knowledge with regards to rationale behind this		
Demonstrates knowledge with regards to importance of correct programmer being available		
Observes preparation of device site and incision being made		
Observes lead/device positioning including positioning of LV lead (CRT devices) and demonstrates knowledge with regards to anatomy		
Observes suturing of wound and demonstrates understanding re choice of suture		
Observes measurement of lead amplitude(s) and demonstrates knowledge of appropriate range of measurement		
Observes measurement of lead impedance(s) and demonstrates knowledge of appropriate range of measurement		
Observes measurement of lead threshold(s) and demonstrates knowledge of appropriate range of measurement		

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 – 9)</b>	<b>Assessors Comments</b>
<p>Observes programming of bradycardia mode and demonstrates understanding of rationale behind this</p> <ul style="list-style-type: none"> <li>• Standard and post-shock</li> <li>• Correct mode selection</li> </ul>		
<p>Observes battery status check and demonstrates understanding of necessity of check</p>		
<p>Observes manual auto-cap reform being performed and demonstrates understanding of necessity of check</p>		
<p>Observes checking of device being switched off prior to hand-over for implantation and understands the importance of this</p>		
<p>Demonstrates knowledge with regards to correct positions for lead connection to device</p>		
<p>Observes measurement of lead amplitude(s) through device and demonstrates knowledge of appropriate range of measurement</p>		
<p>Observes measurement of lead impedance(s) through device and demonstrates knowledge of appropriate range of measurement</p>		
<p>Observes measurement lead threshold(s) through device and demonstrates knowledge of appropriate range of measurement</p>		

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 – 9)</b>	<b>Assessors Comments</b>
<p>Observes set up of device pre-induction and demonstrates understanding of rationale behind this</p> <ul style="list-style-type: none"> <li>• Tachycardia detection</li> <li>• Tachycardia therapy</li> <li>• Sensitivity</li> </ul>		
<p>Demonstrates knowledge of induction methods and demonstrates understanding of rationale behind this</p>		
<p>Observes post induction analysis of EGMs and demonstrates ability to analyse them</p>		
<p>Observes post implant device programming and demonstrates understanding of rationale behind this</p> <ul style="list-style-type: none"> <li>• Bradycardia</li> <li>• Tachycardia detection and therapies</li> <li>• Sensitivity</li> <li>• Other</li> </ul>		
<p>Observes completion of appropriate documentation and demonstrates understanding of rationale behind this</p> <ul style="list-style-type: none"> <li>• ID card</li> <li>• Implant forms</li> <li>• Save to disk/programmer</li> <li>• Medical records</li> </ul>		

## ASSESSMENT OF COMPETENCIES – CRT-D

### DISCHARGE PROCEDURE

**1 - 3 Unsatisfactory**

**4 - 6 Satisfactory**

**7 - 9 Above expected**

**0 – Not applicable**

**You must justify each score of 1 – 3 with at least one explanation / example**

Date: .....

Name of Assessor: .....

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 – 9)</b>	<b>Assessors Comments</b>
Establishes with the patient that the planned treatment is completed		
Ensures that patient meets the relevant discharge criteria		
Ensures patient observations are within normal limits		
Ensures that device site is satisfactory i.e. no signs of bleeding, bruising infection. Checks that sutures have been trimmed (when appropriate)		
Ensures that patient is advised of any medication changes (if any)		
Ensures that the patient is informed of the current DVLA regulations with regards to device implant		

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 - 9)</b>	<b>Assessors Comments</b>
Advises patient with regards to follow up appointment		
Discharge letter completed and given to patient		

# ASSESSMENT OF COMPETENCIES – CRT-D

## DISCHARGE PROCEDURE

**1 - 3 Unsatisfactory**

**4 - 6 Satisfactory**

**7 - 9 Above expected**

**0 – Not applicable**

**You must justify each score of 1 – 3 with at least one explanation / example**

Date: .....

Assessor: .....

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 – 9)</b>	<b>Assessors Comments</b>
Demonstrates awareness of appropriate clinic preparation/set up		
Demonstrates knowledge with regards to advisories		
Observes examination of stored data and demonstrates understanding of rationale behind this		
Observes testing of device and demonstrates understanding of rationale behind this		
Observes alterations to device settings as necessary and demonstrates understanding of rationale behind this		
Observes/demonstrates physical examination of patient and demonstrates understanding of rationale behind this		

<b>Clinical &amp; technical knowledge</b>	<b>Score (1 – 9)</b>	<b>Assessors Comments</b>
Demonstrates knowledge of patient medications and their actions		
Demonstrates understanding of current DVLA guidelines		
Demonstrates knowledge with regards to possible psychological implications of device implant		
Observes documentation/storage of all pertinent information and demonstrates understanding of rationale behind this		