

HRUK

Heart Rhythm UK



CERTIFICATE OF ACCREDITATION
(PHYSIOLOGIST-DEVICES)

PRACTICAL LOGBOOK

BY

INTRODUCTION TO LOGBOOK AND INSTRUCTIONS FOR USE

This logbook forms part of the requirements for the Heart Rhythm UK certificate of accreditation. It is specifically aimed at practitioners with a particular interest in cardiac device implantation and management.

All sections of the logbook must be completed with cases from the time of registration to 31st December of the year of sitting the examination (maximum 18 months).

You must obtain verification of the information and completion of the assessment sections from your supervisor, who must be experienced in device management and ideally hold the HRUK certificate of accreditation or the NASPEXAM/IBHRE qualification (pacing and devices).

Further information on the logbook can be obtained from HRUK, 9 Fitzroy Square, London W1T 5HW. Tel +44 207 692 5433; e-mail hruk@bcs.com

SUMMARY OF INFORMATION REQUIRED

	Number
<u>Pacemaker</u>	
Implant	30
Box change	10
Follow-up	30
Case studies	5
<u>ICD / CRT</u>	
ICD implants	5
CRT implants	3
ICD follow-up	5
CRT follow-up	5
ICD case studies	3
CRT ± ICD case studies	3
Skills assessment	
Data interpretation and patient questions	

PACEMAKER IMPLANT

No.	Date	Patient Hospital Number	Symptom Code	ECG Code	Aetiology Code	Generator (Manufacturer and model)	Atrial lead (Manufacturer and model)	Ventricular lead (Manufacturer and model)	Amplitude (mV)		Pacing Threshold (V)		Impedance (Ω)		Mode	Supervisor Initials
									A	V	A	V	A	V		
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

PACEMAKER IMPLANT (continued)

No.	Date	Patient Hospital Number	Symptom Code	ECG Code	Aetiology Code	Generator (Manufacturer and model)	Atrial lead (Manufacturer and model)	Ventricular lead (Manufacturer and model)	Amplitude (mV)		Pacing Threshold (V)		Impedance (Ω)		Mode	Supervisor Initials
									A	V	A	V	A	V		
16																
17																
18																
19																
20																
21																
22																
23																
24																
25																
26																
27																
28																
29																
30																

PACEMAKER BOX CHANGE

No.	Date	Patient Hospital Number	Initial implant date	New Generator (Manufacturer and model)	Atrial lead (Manufacturer and model)	Ventricular lead (Manufacturer and model)	Amplitude (mV)		Pacing Threshold (V)		Impedance (Ω)		Mode	Was patient pacing dependent? Was a temporary pacing wire used?	Supervisor Initials
							A	V	A	V	A	V			
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															

PACEMAKER FOLLOW-UP

No.	Implant Date	Patient Hospital Number	Generator (Manufacturer and model)	Amplitude (mV)		Pacing Threshold (V)		Impedance (Ω)		Battery		Wound Site OK?	Describe any parameters reprogrammed?	Final Mode Code	Supervisor Initials
				A	V	A	V	A	V	Imp	V				
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															

PACEMAKER FOLLOW-UP (continued)

No.	Implant Date	Patient Hospital Number	Generator (Manufacturer and model)	Amplitude (mV)		Pacing Threshold (V)		Impedance (Ω)		Battery		Wound Site OK?	Describe any parameters reprogrammed?	Final Mode Code	Supervisor Initials
				A	V	A	V	A	V	Imp	V				
16															
17															
18															
19															
20															
21															
22															
23															
24															
25															
26															
27															
28															
29															
30															

PACEMAKER CASE STUDY 1

Date		Patient ID	
Clinical History			
Indication for pacemaker implant			
Rationale for pacing mode prescription & hardware selection			
Other comments			

	YES/NO	Result
Investigations and Results		ECG
		Echocardiogram
		Holter monitor
		ILR (loop recorder)
		Exercise test
		Coronary angiogram
		Tilt table test
		Carotid sinus massage
		EP studies
		Other (specify)

PACEMAKER CASE STUDY 1 (continued)

IMPLANT DETAILS

Anaesthesia	Local	<input type="radio"/>	General	<input type="radio"/>	
Access route	Subclavian	<input type="radio"/>	Cephalic	<input type="radio"/>	Other _____
Lead	Endocardial	<input type="radio"/>	Epicardial	<input type="radio"/>	
Generator position	Subcutaneous	<input type="radio"/>	Subpectoral	<input type="radio"/>	

Generator Manufacturer and Model

	Atrial lead	Ventricular lead
Manufacturer		
Model		
Fixation		
Steroid-eluting?		
Insulation material		
High impedance?		
Lead position e.g. RV apex		
Threshold @ 0.5 ms - V		
Impedance - Ω		
Amplitude - mV		
Slew rate - Vs^{-1}		
Pacing mode at end of procedure		

If system mode is AAI(R), Wenckebach rate (bpm)

Total procedure time (m)

PACEMAKER CASE STUDY 1 (continued)

POST-IMPLANT CLINICAL CONDITION

Incision and pocket

TECHNICAL DETAILS

Magnet Rate _____ bpm

Any parameters changed? YES NO

	Atrial lead	Ventricular lead
Threshold @ 0.5 ms – V		
Impedance - Ω		
Amplitude - mV		

If yes, give reasons:

PACEMAKER CASE STUDY 2

Date		Patient ID	
Clinical History			
Indication for pacemaker implant			
Rationale for pacing mode prescription & hardware selection			
Other comments			

	YES/NO	Result
Investigations and Results		ECG
		Echocardiogram
		Holter monitor
		ILR (loop recorder)
		Exercise test
		Coronary angiogram
		Tilt table test
		Carotid sinus massage
		EP studies
		Other (specify)

PACEMAKER CASE STUDY 2 (continued)

IMPLANT DETAILS

Anaesthesia	Local	<input type="radio"/>	General	<input type="radio"/>	
Access route	Subclavian	<input type="radio"/>	Cephalic	<input type="radio"/>	Other _____
Lead	Endocardial	<input type="radio"/>	Epicardial	<input type="radio"/>	
Generator position	Subcutaneous	<input type="radio"/>	Subpectoral	<input type="radio"/>	

Generator Manufacturer and Model

	Atrial lead	Ventricular lead
Manufacturer		
Model		
Fixation		
Steroid-eluting?		
Insulation material		
High impedance?		
Lead position e.g. RV apex		
Threshold @ 0.5 ms - V		
Impedance - Ω		
Amplitude - mV		
Slew rate - Vs^{-1}		
Pacing mode at end of procedure		

If system mode is AAI(R), Wenckebach rate (bpm)

Total procedure time (m)

PACEMAKER CASE STUDY 2 (continued)

POST-IMPLANT CLINICAL CONDITION

Incision and pocket

TECHNICAL DETAILS

Magnet Rate _____ bpm

Any parameters changed? YES NO

	Atrial lead	Ventricular lead
Threshold @ 0.5 ms – V		
Impedance - Ω		
Amplitude - mV		

If yes, give reasons:

PACEMAKER CASE STUDY 3

Date		Patient ID	
Clinical History			
Indication for pacemaker implant			
Rationale for pacing mode prescription & hardware selection			
Other comments			

	YES/NO	Result
Investigations and Results		
ECG		
Echocardiogram		
Holter monitor		
ILR (loop recorder)		
Exercise test		
Coronary angiogram		
Tilt table test		
Carotid sinus massage		
EP studies		
Other (specify)		

PACEMAKER CASE STUDY 3 (continued)

IMPLANT DETAILS

Anaesthesia	Local	<input type="radio"/>	General	<input type="radio"/>	
Access route	Subclavian	<input type="radio"/>	Cephalic	<input type="radio"/>	Other _____
Lead	Endocardial	<input type="radio"/>	Epicardial	<input type="radio"/>	
Generator position	Subcutaneous	<input type="radio"/>	Subpectoral	<input type="radio"/>	

Generator Manufacturer and Model

	Atrial lead	Ventricular lead
Manufacturer		
Model		
Fixation		
Steroid-eluting?		
Insulation material		
High impedance?		
Lead position e.g. RV apex		
Threshold @ 0.5 ms - V		
Impedance - Ω		
Amplitude - mV		
Slew rate - Vs^{-1}		
Pacing mode at end of procedure		

If system mode is AAI(R), Wenckebach rate (bpm)

Total procedure time (m)

PACEMAKER CASE STUDY 3 (continued)

POST-IMPLANT CLINICAL CONDITION

Incision and pocket

TECHNICAL DETAILS

Magnet Rate _____ bpm

Any parameters
changed?

YES NO

	Atrial lead	Ventricular lead
Threshold @ 0.5 ms – V		
Impedance - Ω		
Amplitude - mV		

If yes, give reasons:

PACEMAKER CASE STUDY 4

Date		Patient ID	
Clinical History			
Indication for pacemaker implant			
Rationale for pacing mode prescription & hardware selection			
Other comments			

	YES/NO	Result
Investigations and Results		
ECG		
Echocardiogram		
Holter monitor		
ILR (loop recorder)		
Exercise test		
Coronary angiogram		
Tilt table test		
Carotid sinus massage		
EP studies		
Other (specify)		

PACEMAKER CASE STUDY 4 (continued)

IMPLANT DETAILS

Anaesthesia	Local	<input type="radio"/>	General	<input type="radio"/>	
Access route	Subclavian	<input type="radio"/>	Cephalic	<input type="radio"/>	Other _____
Lead	Endocardial	<input type="radio"/>	Epicardial	<input type="radio"/>	
Generator position	Subcutaneous	<input type="radio"/>	Subpectoral	<input type="radio"/>	

Generator Manufacturer and Model

	Atrial lead	Ventricular lead
Manufacturer		
Model		
Fixation		
Steroid-eluting?		
Insulation material		
High impedance?		
Lead position e.g. RV apex		
Threshold @ 0.5 ms - V		
Impedance - Ω		
Amplitude - mV		
Slew rate - Vs^{-1}		
Pacing mode at end of procedure		

If system mode is AAI(R), Wenckebach rate (bpm)

Total procedure time (m)

PACEMAKER CASE STUDY 4 (continued)

POST-IMPLANT CLINICAL CONDITION

Incision and pocket

TECHNICAL DETAILS

Magnet Rate _____ bpm

Any parameters
changed?

YES NO

	Atrial lead	Ventricular lead
Threshold @ 0.5 ms – V		
Impedance - Ω		
Amplitude - mV		

If yes, give reasons:

PACEMAKER CASE STUDY 5

Date		Patient ID	
Clinical History			
Indication for pacemaker implant			
Rationale for pacing mode prescription & hardware selection			
Other comments			

	YES/NO	Result
Investigations and Results		ECG
		Echocardiogram
		Holter monitor
		ILR (loop recorder)
		Exercise test
		Coronary angiogram
		Tilt table test
		Carotid sinus massage
		EP studies
		Other (specify)

PACEMAKER CASE STUDY 5 (continued)

IMPLANT DETAILS

Anaesthesia	Local	<input type="radio"/>	General	<input type="radio"/>	
Access route	Subclavian	<input type="radio"/>	Cephalic	<input type="radio"/>	Other _____
Lead	Endocardial	<input type="radio"/>	Epicardial	<input type="radio"/>	
Generator position	Subcutaneous	<input type="radio"/>	Subpectoral	<input type="radio"/>	

Generator Manufacturer and Model

	Atrial lead	Ventricular lead
Manufacturer		
Model		
Fixation		
Steroid-eluting?		
Insulation material		
High impedance?		
Lead position e.g. RV apex		
Threshold @ 0.5 ms - V		
Impedance - Ω		
Amplitude - mV		
Slew rate - Vs^{-1}		
Pacing mode at end of procedure		

If system mode is AAI(R), Wenckebach rate (bpm)

Total procedure time (m)

PACEMAKER CASE STUDY 5 (continued)

POST-IMPLANT CLINICAL CONDITION

Incision and pocket

TECHNICAL DETAILS

Magnet Rate _____ bpm

Any parameters
changed?

YES NO

	Atrial lead	Ventricular lead
Threshold @ 0.5 ms – V		
Impedance - Ω		
Amplitude - mV		

If yes, give reasons:

ICD/CRT IMPLANT

No.	Dev	Date	Patient Hospital Number	Symptom Code	ECG Code	Aetiology Code	Generator (Manufacturer and model)	Atrial lead (Manufacturer and model)	Ventricular lead (s) (Manufacturer and model)		Amplitude			Pacing Threshold			Pacing Impedance			Mode	Supervisor Initials		
									RV	LV	A	RV	LV	A	RV	LV	A	RV	LV				
1	ICD																						
2	ICD																						
3	ICD																						
4	ICD																						
5	ICD																						
6	CRT																						
7	CRT																						
8	CRT																						

ICD/CRT FOLLOW-UP

No.	Dev	Implant Date	Patient Hospital Number	Generator (Manufacturer and model)	Amplitude (mV)			Pacing Threshold (V)			Impedance (Ω)			Battery		Wound Site OK?	Describe any parameters reprogrammed?	Pacing Mode	Supervisor Initials
					A	RV	LV	A	RV	LV	A	RV	LV	Imp	V				
1	ICD																		
2	ICD																		
3	ICD																		
4	ICD																		
5	ICD																		
6	CRT																		
7	CRT																		
8	CRT																		
9	CRT																		
10	CRT																		

ICD CASE STUDY 1

Date	<input style="width: 95%;" type="text"/>	Patient ID	<input style="width: 98%;" type="text"/>
Clinical History			
Indication for ICD			
Rationale for pacing mode prescription			
Other comments			

	YES/NO	Result
Investigations and results		
ECG (incl QRS duration)		
Echocardiogram		
Dyssynchrony echo		
Holter monitor		
Exercise test		
Myocardial perfusion scan		
Coronary angiogram		
ILR (loop recorder)		
EP studies		
VT induced		If yes, cycle length (ms)
Previous clinical VT		If yes, cycle length (ms)
Other (specify)		

ICD CASE STUDY 1 (continued)

IMPLANT DETAILS

Anaesthesia Local General

Sedation used Specify: _____

Access route Subclavian Cephalic Other _____

Lead site Endocardial Epicardial _____

Generator Manufacturer and Model

Generator site Subcutaneous Subpectoral

	Atrial lead	Ventricular
Manufacturer		
Model		
Fixation		
Lead site e.g. RV apex		
Steroid-eluting?		
Threshold @ 0.5 ms – V		

	Atrial lead	Ventricular
Impedance - Ω		
Amplitude – mV		
Slew rate – Vs ⁻¹		
Shock impedance - Ω		
Lowest successful shock –		
Pacing Mode		

Details of VF induction and termination:

ICD CASE STUDY 1 (continued)

POST-IMPLANT CLINICAL CONDITION

Incision and pocket

TECHNICAL DETAILS

Any parameters changed? YES NO

	Atrial lead	Ventricular lead
Amplitude – mV		
Threshold @ 0.5 ms – V		
Impedance - Ω		
Shock impedance - Ω		

If yes, give reasons:

ICD CASE STUDY 1 (continued)

COMPLICATIONS AND CXR COMMENTS

Clinical and/or technical
CXR COMMENT Lead Position: Evidence of pneumothorax:

ECG AND FINAL PROGRAMMING PRINTOUT *(Please attach)*

Please also give details of setup of detection criteria and any anti-tachycardia pacing

--

Supervisor's Signature:

ICD CASE STUDY 2

Date	<input style="width: 95%;" type="text"/>	Patient ID	<input style="width: 98%;" type="text"/>
Clinical History			
Indication for ICD			
Rationale for pacing mode prescription			
Other comments			

	YES/NO	Result
Investigations and results		
ECG (incl QRS duration)		
Echocardiogram		
Dyssynchrony echo		
Holter monitor		
Exercise test		
Myocardial perfusion scan		
Coronary angiogram		
ILR (loop recorder)		
EP studies		
VT induced		If yes, cycle length (ms)
Previous clinical VT		If yes, cycle length (ms)
Other (specify)		

ICD CASE STUDY 2 (continued)

IMPLANT DETAILS

Anaesthesia Local General

Sedation used Specify: _____

Access route Subclavian Cephalic Other _____

Lead site Endocardial Epicardial _____

Generator Manufacturer and Model

Generator site Subcutaneous Subpectoral

	Atrial lead	Ventricular
Manufacturer		
Model		
Fixation		
Lead site e.g. RV apex		
Steroid-eluting?		
Threshold @ 0.5 ms – V		

	Atrial lead	Ventricular
Impedance - Ω		
Amplitude – mV		
Slew rate – Vs ⁻¹		
Shock impedance - Ω		
Lowest successful shock –		
Pacing Mode		

Details of VF induction and termination:

ICD CASE STUDY 2 (continued)

POST-IMPLANT CLINICAL CONDITION

Incision and pocket

TECHNICAL DETAILS

Any parameters changed? YES NO

	Atrial lead	Ventricular lead
Amplitude – mV		
Threshold @ 0.5 ms – V		
Impedance - Ω		
Shock impedance - Ω		

If yes, give reasons:

ICD CASE STUDY 3

Date	<input type="text"/>	Patient ID	<input type="text"/>
Clinical History	<input type="text"/>		
Indication for ICD	<input type="text"/>		
Rationale for pacing mode prescription	<input type="text"/>		
Other comments	<input type="text"/>		

	YES/NO	Result
Investigations and results		
ECG (incl QRS duration)		
Echocardiogram		
Dyssynchrony echo		
Holter monitor		
Exercise test		
Myocardial perfusion scan		
Coronary angiogram		
ILR (loop recorder)		
EP studies		
VT induced		If yes, cycle length (ms)
Previous clinical VT		If yes, cycle length (ms)
Other (specify)		

ICD CASE STUDY 3 (continued)

IMPLANT DETAILS

Anaesthesia Local General

Sedation used Specify: _____

Access route Subclavian Cephalic Other _____

Lead site Endocardial Epicardial _____

Generator Manufacturer and Model

Generator site Subcutaneous Subpectoral

	Atrial lead	Ventricular
Manufacturer		
Model		
Fixation		
Lead site e.g. RV apex		
Steroid-eluting?		
Threshold @ 0.5 ms – V		

	Atrial lead	Ventricular
Impedance - Ω		
Amplitude – mV		
Slew rate – Vs ⁻¹		
Shock impedance - Ω		
Lowest successful shock –		
Pacing Mode		

Details of VF induction and termination:

ICD CASE STUDY 3 (continued)

POST-IMPLANT CLINICAL CONDITION

Incision and pocket

TECHNICAL DETAILS

Any parameters changed? YES NO

	Atrial lead	Ventricular lead
Amplitude – mV		
Threshold @ 0.5 ms – V		
Impedance - Ω		
Shock impedance - Ω		

If yes, give reasons:

ICD CASE STUDY 3 (continued)

COMPLICATIONS AND CXR COMMENTS

Clinical and/or technical
CXR COMMENT Lead Position: Evidence of pneumothorax:

ECG AND FINAL PROGRAMMING PRINTOUT *(Please attach)*

Please also give details of setup of detection criteria and any anti-tachycardia pacing

--

Supervisor's Signature:

CRT (\pm ICD) CASE STUDY 1

Date	<input style="width: 95%;" type="text"/>	Patient ID	<input style="width: 95%;" type="text"/>
Clinical History			
Indication for CRT \pm ICD			
Rationale for pacing mode prescription			
Other comments			

	YES/NO	Result
Investigations and results		
ECG (incl QRS duration)		
Echocardiogram		
Dyssynchrony echo		
Holter monitor		
Exercise test		
Myocardial perfusion scan		
Coronary angiogram		
ILR (loop recorder)		
Abnormal blood results		
EP studies		
VT induced		If yes, cycle length (ms)
Previous clinical VT		If yes, cycle length (ms)
Other (specify)		

CRT (\pm ICD) CASE STUDY 1 (continued)

IMPLANT DETAILS

Anaesthesia Local General

Sedation used Specify: _____

Access route Subclavian Cephalic Other _____

Lead site Endocardial Epicardial

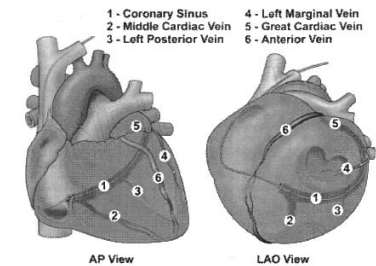
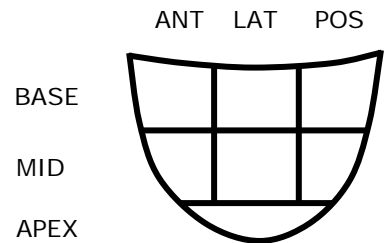
Generator Manufacturer and Model

Generator site Subcutaneous Subpectoral

	Atrial lead	RV lead	LV lead
Manufacturer			
Model			
Fixation			
Lead site e.g. RV apex			
Steroid-eluting?			
Threshold @ 0.5 ms - V			

	Atrial lead	RV lead	LV lead
Impedance - Ω			
Amplitude - mV			
Slew rate - Vs^{-1}			
Shock impedance - Ω			
Lowest successful shock - j			
Pacing mode			

LV LEAD DETAILS



Lead tip position (mark on diagram)

Successful Guide Catheter shape

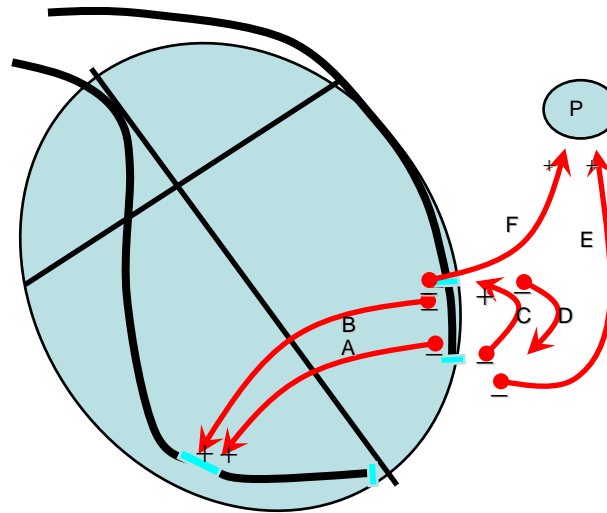
Vein Used

CRT (\pm ICD) CASE STUDY 1 (continued)

Procedural comment:

Was final LV lead position/vein used the operators initial choice? If not why?

- A – LV tip to RV ring
- B – LV ring to RV ring
- C – LV tip to LV ring
- D – LV ring to LV tip
- E – LV tip to can
- F – LV ring to can



LV lead electronic position

CRT (\pm ICD) CASE STUDY 1 (continued)

PRE AND POST-IMPLANT ECG (RV, LV AND BIV PACING) *(Please attach)*

CRT (\pm ICD) CASE STUDY 1 (continued)

POST-IMPLANT CLINICAL CONDITION

Incision and pocket

TECHNICAL DETAILS

Any parameters changed? YES NO

	Atrial lead	RV lead	LV lead
Amplitude - mV			
Threshold @ 0.5 ms – V			
Impedance - Ω			
Shock impedance - Ω			

If yes, give reasons:

CRT (\pm ICD) CASE STUDY 1 (continued)

COMPLICATIONS AND CXR COMMENTS

Clinical and/or technical
CXR COMMENT Lead Position: Evidence of pneumothorax:

ECG AND FINAL PROGRAMMING PRINTOUT *(Please attach)*

Please also give details of setup of detection criteria and any anti-tachycardia pacing

--

Supervisor's Signature:

CRT (\pm ICD) CASE STUDY 2

Date Patient ID

Clinical History	
Indication for CRT \pm ICD	
Rationale for pacing mode prescription	
Other comments	

	YES/NO	Result
Investigations and results		
ECG (incl QRS duration)		
Echocardiogram		
Dyssynchrony echo		
Holter monitor		
Exercise test		
Myocardial perfusion scan		
Coronary angiogram		
ILR (loop recorder)		
Abnormal blood results		
EP studies		
VT induced		If yes, cycle length (ms)
Previous clinical VT		If yes, cycle length (ms)
Other (specify)		

CRT (\pm ICD) CASE STUDY 2 (continued)

IMPLANT DETAILS

Anaesthesia Local General

Sedation used Specify: _____

Access route Subclavian Cephalic Other _____

Lead site Endocardial Epicardial

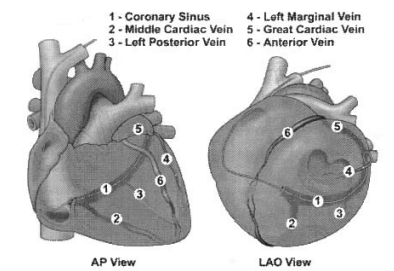
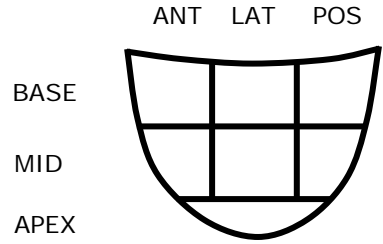
Generator Manufacturer and Model

Generator site Subcutaneous Subpectoral

	Atrial lead	RV lead	LV lead
Manufacturer			
Model			
Fixation			
Lead site e.g. RV apex			
Steroid-eluting?			
Threshold @ 0.5 ms - V			

	Atrial lead	RV lead	LV lead
Impedance - Ω			
Amplitude - mV			
Slew rate - Vs ⁻¹			
Shock impedance - Ω			
Lowest successful shock - j			
Pacing mode			

LV LEAD DETAILS



Lead tip position (mark on diagram)

Successful Guide Catheter shape

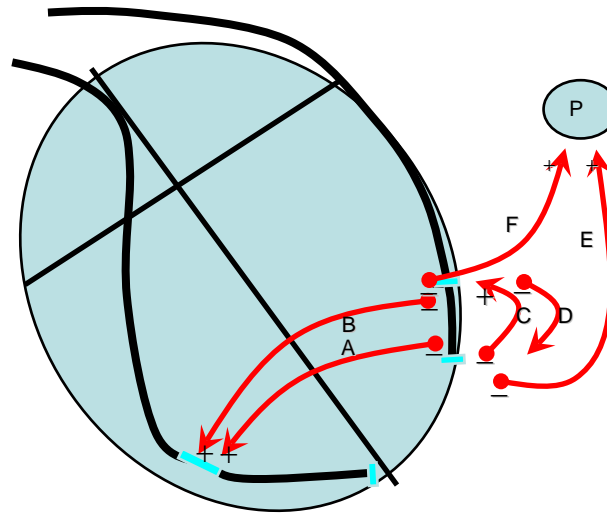
Vein Used

CRT (\pm ICD) CASE STUDY 2 (continued)

Procedural comment:

Was final LV lead position/vein used the operators initial choice? If not why?

- A – LV tip to RV ring
- B – LV ring to RV ring
- C – LV tip to LV ring
- D – LV ring to LV tip
- E – LV tip to can
- F – LV ring to can



LV lead electronic position

CRT (\pm ICD) CASE STUDY 2 (continued)

PRE AND POST-IMPLANT ECG (RV, LV AND BIV PACING) *(Please attach)*

CRT (\pm ICD) CASE STUDY 2 (continued)

POST-IMPLANT CLINICAL CONDITION

Incision and pocket

TECHNICAL DETAILS

Any parameters changed? YES NO

	Atrial lead	RV lead	LV lead
Amplitude - mV			
Threshold @ 0.5 ms – V			
Impedance - Ω			
Shock impedance - Ω			

If yes, give reasons:

CRT (\pm ICD) CASE STUDY 3

Date Patient ID

Clinical History	
Indication for CRT \pm ICD	
Rationale for pacing mode prescription	
Other comments	

	YES/NO	Result
Investigations and results		
ECG (incl QRS duration)		
Echocardiogram		
Dyssynchrony echo		
Holter monitor		
Exercise test		
Myocardial perfusion scan		
Coronary angiogram		
ILR (loop recorder)		
Abnormal blood results		
EP studies		
VT induced		If yes, cycle length (ms)
Previous clinical VT		If yes, cycle length (ms)
Other (specify)		

CRT (\pm ICD) CASE STUDY 3 (continued)

IMPLANT DETAILS

Anaesthesia Local General

Sedation used Specify: _____

Access route Subclavian Cephalic Other _____

Lead site Endocardial Epicardial

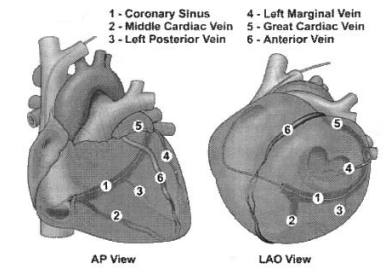
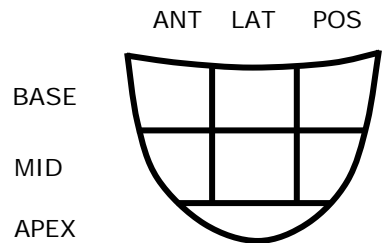
Generator Manufacturer and Model

Generator site Subcutaneous Subpectoral

	Atrial lead	RV lead	LV lead
Manufacturer			
Model			
Fixation			
Lead site e.g. RV apex			
Steroid-eluting?			
Threshold @ 0.5 ms - V			

	Atrial lead	RV lead	LV lead
Impedance - Ω			
Amplitude - mV			
Slew rate - Vs^{-1}			
Shock impedance - Ω			
Lowest successful shock - j			
Pacing mode			

LV LEAD DETAILS



Lead tip position (mark on diagram)

Successful Guide Catheter shape

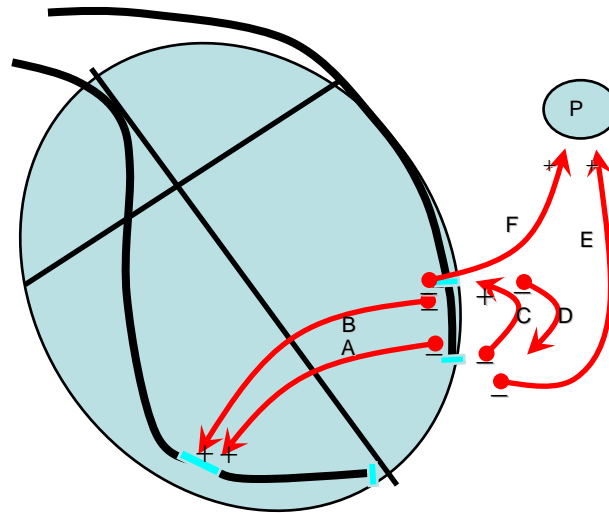
Vein Used

CRT (\pm ICD) CASE STUDY 3 (continued)

Procedural comment:

Was final LV lead position/vein used the operators initial choice? If not why?

- A – LV tip to RV ring
- B – LV ring to RV ring
- C – LV tip to LV ring
- D – LV ring to LV tip
- E – LV tip to can
- F – LV ring to can



LV lead electronic position

CRT (\pm ICD) CASE STUDY 3 (continued)

PRE AND POST-IMPLANT ECG (RV, LV AND BIV PACING) *(Please attach)*

CRT (\pm ICD) CASE STUDY 3 (continued)

POST-IMPLANT CLINICAL CONDITION

Incision and pocket

TECHNICAL DETAILS

Any parameters changed? YES NO

	Atrial lead	RV lead	LV lead
Amplitude - mV			
Threshold @ 0.5 ms – V			
Impedance - Ω			
Shock impedance - Ω			

If yes, give reasons:

ICD BASIC FOLLOW UP – SKILLS ASSESSMENT

Assessor:	Date:
-----------	-------

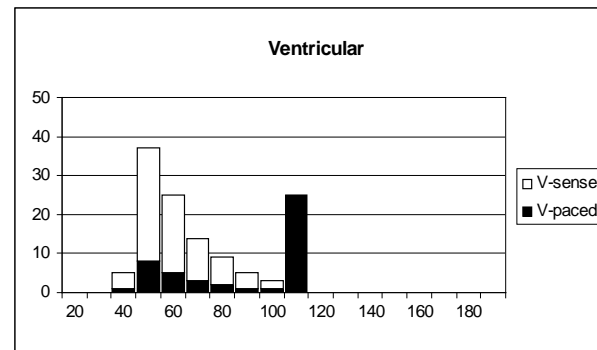
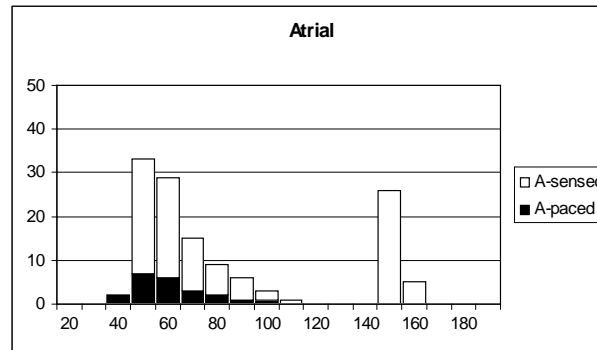
Method of Assessment: 1 - 3 Unsatisfactory
 4 - 6 Satisfactory
 7 - 9 Above expected
 (0 not applicable)

SKILL	ASSESSMENT (AS PER KEY)
ECG / EGM interpretation	
History	
Arrhythmia interpretation	
Diagnostics interpretation	
P and R wave measurement	
A and V lead impedance	
A and V threshold tests	
Shock impedance	
Reprogramming / recommendations	
Patients support	

Assessor comments *(You must justify each score of 1 – 3 with at least one explanation / example):*

HISTOGRAM INTERPRETATION

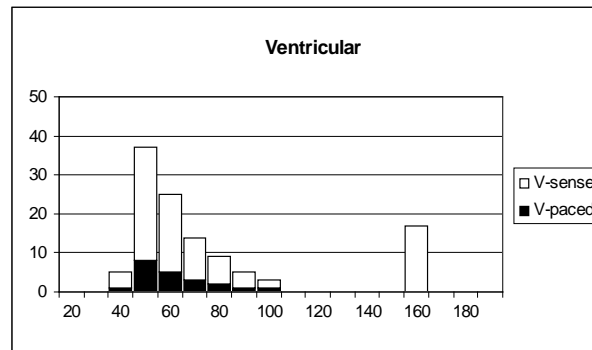
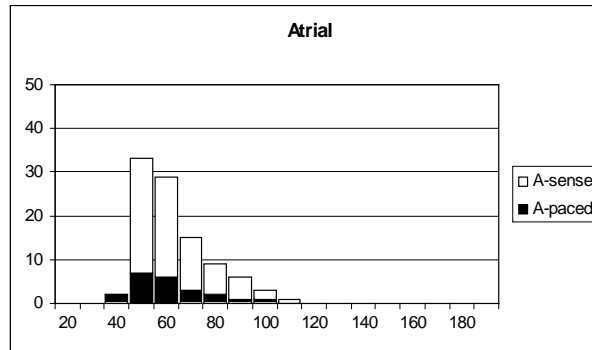
Describe what these histograms show and the programming changes, recommendations or referrals you would make.



Comments:

HISTOGRAM INTERPRETATION

Describe what these histograms show and the programming changes, recommendations or referrals you would make.



Comments:

PATIENT QUESTIONS

Write a paragraph about the answers you would give to patients when they ask the following questions in clinic:

Q1: [\(Relating to an ICD patient implanted for prophylactic reasons\)](#) I understand that I am restricted from driving. When can I drive and do I need to inform anybody?

A:

Q2: [\(Relating to a patient with a VVIR pacemaker\)](#) I am still fairly young at heart and on my holiday next month I will be doing scuba diving. I am assuming that it is okay?

A:

Q3: With my [pacemaker](#), is it still okay to use my mobile phone and my new induction hob?

A:

Q4: How long will my pacemaker last? The nurses on the ward said 10 years ...

A:

Q5: I always get really frightened when you test my device as it makes me feel so dizzy and sick – do you really need to do it?

A:

Q6: I am worried about what happens to me when the battery runs down ...

A:

FOLLOW UP DISCUSSION QUESTIONS

Please write up to 6 actions you would take if the following situations presented at a device follow up:

Q1: A patient with a dual chamber pacemaker presented with ventricular fusion and pseudo fusion beats on his initial ECG/EGM. He has no symptoms (2 methods to cure).

-
-
-
-
-
-

Q2: A patient presents with an ECG/EGM which looks like the atrial lead might be dislodged. [What steps would you take to verify this?](#)

-
-
-
-
-
-

Q3: The device counters show 1206 mode switches in the last month but the patient has not previously presented with atrial arrhythmias. How would you check if they indeed had AF and if not what would you do?

-
-
-
-
-
-

Q4: Pacemaker patient complains of intermittent presyncope. He has had his device for many years, what would you do to diagnose potential device related cause?

-
-
-
-
-
-

Q5: CRT-D patient is referred to the clinic from the GP with greatly increased breathlessness and reduced exercise capacity. What tests would you do and which diagnostics would you examine?

-
-
-
-
-
-

Q6: An ICD patient presents routinely with >1000 episodes treated with ATP all starting 3 weeks ago. What would you suspect and what would you check?

-
-
-
-
-
-