Cardiology Audit and Registration Data Standards for Clinical Electrophysiology [pacemakers, implantable cardioverter defibrillators (ICDs) and ablation).

A Report of the CARDS Expert Committee on Electrophysiology

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FOREWARD

During Ireland's Presidency of the European Union (EU) (January to June 2004), the Department of Health and Children in Ireland worked with the European Society of Cardiology, the Irish Cardiac Society and the European Commission to develop data standards for use in clinical cardiology. The Cardiology Audit and Registration Data Standards (CARDS) Project aimed to agree data standards for three modules of cardiovascular health information systems, viz. - acute coronary syndromes (ACS), percutaneous coronary interventions (PCI), and clinical electrophysiology (EP) (pacemakers, implantable cardioverter defibrillators and ablation procedures).

A Coordination Committee and three multidisciplinary Expert Committees were established to develop the data standards, for use throughout the Europe, for each of the three modules. All existing databases, registries and surveys data sets were obtained, scrutinised very carefully and compiled into one large matrix for each of the modules. The main objective of each of the Expert Committees was to produce standardised data sets limited to less than 100 variables. The variables derived had to reflect current treatment guidelines, and also were to be of use for clinical audit, clinical care of patients, service planning and epidemiology. The process involved regular meetings of the Expert Committees, electronic communication between members, and consultation with specialist groups and cardiac societies represented by the European Society of Cardiology. The development of the draft data standards for the three modules was completed in April 2004.

These draft data standards were reviewed, discussed and formally adopted at a conference involving EU Member States in Cork, Ireland, in May 2004. Members of the Expert Committees have carried out pilot tests within their own institutions to test the clarity and feasibility of using the data standards. The data standards and accompanying descriptive information will be disseminated to stakeholders throughout Europe from September to December 2004. The European Society of Cardiology will act as steward in this initiative.

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1.1 Description of data standard

These are data standards for recording data on Electrophysiology (pacemakers, implantable cardioverter defibrillators [ICDs], ablation) procedures.

1.2 Description of the Electrophysiology Data Standard structure

The data standards are set out under headings, as follows:

1. Field ID Number – each data field has an identification number. Data items that are common to the three modules [CCU/ACS, PCI and EP] have the same Field ID Number.

2. Field name – this is a prompt or title for the field that could be used on a data entry form or screen, for example *Date of birth.*

3 & 4. Field content – the field may have options. These contain two types of items for coding. It contains a short numerical code for classification and also a short string, again identifying a classification. For example the data field Sex has the options (1) Male, (2) Female and (9) Unknown, the numerical codes are (1), (2) and (9) and the short string includes male, female and unknown.

5. Definition of field – This is a description/explanation of the field name.

6. Definition of field options - This is a definition of the field content. Additional pages with definitions accompany the data standards

7. Data format – this identifies the field's format. Example of formats include date, date and time, numeric, text single value and text multiple values. The classification used can be seen in appendix 1.

1.3 Source Documents used to develop the Clinical Electrophysiology Data Standards

Source documents included national and international registers, databases and surveys. Below is a list of the national and international databases, registers, surveys and guidelines that were used to compile the electrophysiology matrix from which the data standards were derived. A brief description of these is given in section 1.6.

Databases, Registries and Surveys on Clinical Electrophysiology

Electrophysiology – Pacemakers

- National Pacing Database (BPDB) – CCAD (UK and Ireland)
- The Swedish Pacemaker Registry
- The European Pacemaker Register
- The Danish Pacemaker Register
- The Spanish Pacemaker Register

Electrophysiology – ICDs

- Implantable Cardioverter Defibrillators (ICD) database – CCAD (UK)
- The European Registry for Implantable Defibrillators
- The Danish ICD Register
- The Swedish ICD Register
- The Spanish ICD Register

Electrophysiology – Ablation

- Electrophysiology database (EPS) – CCAD (UK)
- The Spanish ablation register

Guidelines relating to clinical electrophysiology

- The European Society of Cardiology **[ESC]** Guidelines: Management (diagnosis and treatment) of Syncope (2001)
- National Institute for Clinical Excellence **[NICE**] Guidelines: The use of Implantable Cardioverter Defibrillators for Arrhythmias (2000)
- **ACC/AHA/NAPSE** Guidelines: Update for Implantation of Cardiac Pacemakers and Antiarrhythmia Devices (2002)
- European Society of Cardiology **[ESC]** Guidelines: Task Force on Sudden Cardiac Death (2003)
- **ACC/AHA/ESC** Guidelines: Management of patients with Supraventricular Arrhythmias (2003)
- **ACC/AHA/ESC** guidelines: Management of patients with Atrial Fibrillation (2001)
- A Statement from a Joint Expert Group from the Working Group of Arrhythmias of the European Society of Cardiology and the North American Society of Pacing and Electrophysiology **[ESC / NASPE]**: Classification of Atrial Flutter and Regular Atrial Tachycardia According to Electrophysiologic Mechanism and Anatomic Bases (2001).

- European Society of Cardiology Guidelines **[ESC]**: Diagnosis and treatment of Chronic Heart Failure (2001)
- **NASPE** policy statement on catheter ablation: Personnel, policy, procedures, and therapeutic recommendations (2002)
- Report of the 1995 World Health Organization/International Society and Federation of Cardiology Task Force: Definition and Classification of Cardiomyopathies

1.4 Priority Ratings

Priority rating refers to the overall importance of the variable to be collected in relation to the following objectives: -

- Clinical audit
- Service planning and funding agencies
- Epidemiological research

Variables to be collected are to be considered under three priority groupings, viz.

High - these variables will be of prime importance in relation to the above objectives

NB - the variables in this group would be essential components of a minimum core data set and include variables without which the data would be considered useless, e.g. sex, age, diagnosis. These variables include those, which would be essential in order to link up with other cardiovascular disease surveillance datasets.

Medium – these would help build up a complete picture of the patient but would not necessarily alter the definitive care of the patient.

Low – these are variables that do not impact on patient care in hospital. Again they would help complete the information in relation to the event leading to the patient's admission. However, they may in the future be available from other cardiac disease information surveillance modalities. Also these variables would be considered of least importance in meeting the objectives of collecting the data.

NOTE: All data items are seen as high priority unless otherwise stated. Data items deemed as medium priority are marked MP and low priority data items are marked as LP in the field ID number.

1.5 Description of the Clinical Electrophysiology Data Standards -sections

The data standards for ablation are subdivided into the following sections for:

- **Demographics**: the demographic section contains data fields such as date of birth and sex.
- **Past history:** includes data on the patients previous medical history such as previous cerebrovascular embolic disease, and risk factors such as hypertension and diabetes. This section also includes data fields for interventions and procedures such as percutaneous coronary interventions (PCI), coronary artery bypass graft (CABG), previous heart valvular surgery and previous heart transplant
- **Medication pre hospital:** this captures information on medications taken by the patient before the procedure and prior to this hospital admission
- **Underlying disease and clinical presentation:** includes data on the patient's presenting symptoms, dyspnoea status and left ventricular function.
- **Relevant cardiac diagnosis:** this section collects data on the patients cardiac history relevant to the ablation procedure. Examples of data items included in this section are as follows: congenital heart disease, valvular heart disease and cardiomyopathy
- **Arrhythmia indication:** this section records the arrhythmia indication
- **Ablation target:** collects data on the ablation target, for example indicate if the ablation target is the sinus node
- **Procedure:** collects data on the procedure itself for example procedure date, total procedure duration etc
- **Ablation technique:** this section captures data on the ablation technique used, for example 'Indicate if cryoablation was used as the ablation technique.
- **Medication during procedure:** collects data on the medication administered during ablation procedure
- **Post-procedure complications:** collects immediate and long-term complication post procedure.
- **Discharge:** collects data and vital status at discharge
- **Medications at discharge:** includes data items on medication on discharge from hospital.

- **Follow up**: This section captures information on whether the patient is dead /alive at the time of follow- up.

The data standards for ICD and PM are subdivided into the following sections:

- **Demographics**: the demographic section contains data fields such as date of birth and sex.
- **Past history**
- **Medication pre procedure**
- **Underlying disease and clinical presentation**
- **Relevant cardiac diagnosis**
- **Procedure**
- **Reposition/Repair/Replacement/Explant Procedure**
- **Procedure/Programming**
- **Post-procedure complications**
- **Discharge**
- **Medications at discharge**
- **Follow-up**

1.6 Description of registers and databases

The following is a description of **some** of the national and international databases, registers and surveys used to make up the data standards. A brief description is given for each of the examples under the headings; - devised by, type, details on data set and coverage.

Electrophysiology – ICDs

Implantable Cardiac Defibrillator Database (ICD) database – CCAD (UK)

Devised by: This database started in January 1989 and was approved by the British Pacing and Electrophysiology group (BPEG). It is part of CCAD.

Type: Collects data on patients fitted with a permanent implantable cardioverter defibrillator (ICD). It is a computer-based database connected to an external network.

Details on data set: Collects data on the following; Identifier, administration information, condition, intervention, short-term outcome, major known confounders, and long-term outcome.

Coverage: Greater than 99% coverage in the United Kingdom

European Register for Implantable Defibrillators (EURID)

Devised by: The European Register for Implantable Defibrillators (EURID) was conceived in 1992 and started in Germany as EURID Deutschland in late 1993. The manufacturers of ICDs currently fund EURID. The European Register for Implantable Defibrillators (EURID) Committee designs the structure of the database and data set to be collected. National committees authorised by the national cardiology societies organise data collection and analysis.

Type: Data are then sent to a co-ordinating centre digitally or using the paper-based data sheet.
Details on data set:

- Demographics (13 items)
- Implantable Procedures and implantable devices (29 items) and programmed therapy (6 items)
- Follow-up on mortality (6 items), morbidity (11 items), quality of life (6 items) and anti-tachyarrhythmia therapy (9 items)
- Revision of ICD system or end of follow-up (43 items)

Coverage: Countries that contribute to this register include Austria, Belgium, Croatia, Czech, Germany, Hungary, Italy, Lithuania, Poland, Slovak, Slovenia, Sweden, and Switzerland.

The Danish ICD Register

Devised by: the Danish Cardiac Society devised this in 1997.

Type: - Data are sent to the Department of Cardiology in Odense University Hospital in paper format.

Details on data set: The European Patient Identification Card for Implantable/Defibrillator is used to collect the data.

Coverage: Data are collected from all 5 implanting hospitals in Denmark (100% coverage).

Electrophysiology – Pacemakers

National Pacing Database (BPDB) – CCAD (UK and Ireland)

Devised by: Devised and approved by the British Pacing and Electrophysiology Group (BPEG). This database is part of CCAD (Central Cardiac Audit Database).

Type: This computer-based database started in January 1997 and records data on patients fitted with a permanent pacemaker.

Details on data set: Collects data on the following: Identifier, administration information, condition, intervention, short-term outcome, major known confounders, and long-term outcome.

Coverage: It collects data on 97% of patients fitted with a pacemaker in the United Kingdom and Ireland

Swedish Pacemaker Registry

Devised by: the Stockholm County Council are the health authority responsible for the registry. This was set up in 1989.

Type: The recorded data is based on the European Pacemaker Card. Registration takes place either when the European Pacemaker Card, which contains all the necessary data for entry in the registry, or reports are emailed to the Swedish Pacemaker registry. This is done on a quarterly basis.
Details on data set: The registry includes data on age, sex, indications, i.e. the electrical disturbance of heart rhythm, underlying heart disease, type and serial number of electrodes and pacemaker's mode of stimulation, perioperative complications and the reason for suspending pacemaker treatment i.e. usually death. Replacement of pacemakers and electrodes are recorded, as well as the reasons for replacement.

Coverage: Data is collected from all 47 units (100% coverage) in Sweden.

The European Pacemaker Register – (The European Pacemaker Patient Identification Card)

Devised by: The European Registry for Cardiac Pacing was established more than 25 years ago by the ESC Working Group on Cardiac Pacing.

Type: Data collection forms are packed along with the pacemaker devices filled out after implantation procedures and forwarded to a central European registry.

Details on data set: The data collected include patient characteristics, indication for the implant and implantation procedures, and are limited to those available at the time of pacemaker implantation.

Coverage: Countries that participate in the register include Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, France, Germany, Greece, Hungary, Italy, The Netherlands, Norway, Poland, Portugal, Romania, Slovenia, Spain, Sweden, Switzerland, UK, and Yugoslavia. Since 1992, incidence and prevalence data of more than 160,000 pacemakers are collected yearly.

The Danish Pacemaker Register (DPR)

Devised by: This register commenced in January 1982 by the Danish Cardiac Society

Type: Uses the European Pacemaker Patient Identification Card proposed by the European Working group in cardiac pacing for collecting data. Data are sent to the Department of Cardiology in Odense University Hospital. Data collection is based on paper based self-reporting from each of the 14 implanting hospitals in Denmark.

Details on data set: Same as the European Pacemaker Patient Identification card. External audit on quality of data collected has been performed.

Coverage: Collects data from all 14 implanting hospitals in Denmark (100% coverage)

Ablation Data Standards

Ablation Data Standards

Ablation Data Standards						
ID	**Field name/prompt**	**Short Code**	**Field content**	**Definition**	**Field content**	**Data Format**
Demographics						
A 1.01	Hospital identification number			Indicate the hospital identification number		Id an100
A 1.02	Patient identification number			Indicate the patient identification number		Id an100
A 1.03	Date of birth			The date the patient was born as recorded on their birth certificate		Date
A 1.04	Sex	1	Male	The sex of the patient		Code n2
		2	Female			
		99	Unknown		Information missing	
A 1.05	Height			Height in cms		n3
A 1.06	Weight			Weight in kgs		n3.1
Past History Previous history may be documented in the patient's medical notes, GP letter or other referral letters or the patient or the patient's family may have positive information from medical professionals that confirm history.						
A 2.01	History of cerebrovascular embolic disease	1	No	Indicate if the patient has a history of cerebrovascular embolic disease. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 2.02	Other arterial embolic episodes	1	No	Indicate if the patient has had any other arterial embolic episodes, apart from cerebro-embolic.		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 2.03	Diabetes mellitus	1	Non-diabetic	Indicate if the patient has a history of diabetes mellitus diagnosed prior to the current admission	Patient does not have diabetes	Code n2
		2	Diabetic (dietary control)		The patient has received dietary advice appropriate to their condition but is not receiving medication	
		3	Diabetic (oral medication)		The patient uses oral medication to control their condition	
		4	Diabetic (insulin)		The patient uses insulin treatment, with or without oral therapy, to control their condition	
		5	Newly diagnosed diabetic		If a patient is admitted with new (not previously diagnosed) diabetes use option "newly diagnosed diabetes" as final treatment modality will not be known	
		99	Unknown		Information missing	

ID	Field name/prompt	Short Code	Field content	Definition	Field content	Data Format
A 2.04	Hypertension	1	No	Indicate if the patient has a history of hypertension diagnosed and/or treated by a physician		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 2.05	Previous implantable cardioverter defibrillator (ICD) implanted	1	No	Indicate if the patient had a previous ICD implanted		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 2.06	Previous pacemaker implanted	1	No	Indicate if the patient had a previous permanent pacemaker implanted		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 2.07	Previous electrophysiology study (diagnostic)	1	No	Indicate if the patient had a previous EP diagnostic study		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 2.08	Previous catheter ablation for supraventricular tachycardia	1	No	Indicate if the patient had a previous catheter ablation for supraventricular tachycardia		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 2.09	Previous catheter ablation for ventricular tachycardia	1	No	Indicate if the patient had a previous catheter ablation for ventricular tachycardia		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 2.10	Previous percutaneous intervention- coronary	1	No	Indicate if the patient had a previous percutaneous intervention for coronary artery disease		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 2.11	Previous percutaneous intervention- valvular	1	No	Indicate if the patient had a previous percutaneous intervention for valvular heart disease		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 2.12	Previous percutaneous intervention- congenital	1	No	Indicate if the patient had a previous percutaneous intervention for congenital heart disease		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 2.13	Previous percutaneous intervention - chemical septal ablation	1	No	Indicate if the patient had a previous percutaneous intervention in the form of chemical septal ablation		Code n2
		2	Yes			
		99	Unknown		Information missing	

ID	Field name/prompt	Short Code	Field content	Definition	Field content	Data Format
A 2.14	Previous coronary artery bypass graft (CABG)	1	No	Indicate if the patient had a previous CABG		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 2.15	Previous valvular heart surgery	1	No	Indicate if the patient had previous valvular heart surgery		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 2.16	Previous cardiac surgery for congenital disease	1	No	Indicate if the patient had previous cardiac surgery for congenital disease		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 2.17	Previous heart transplant	1	No	Indicate if the patient had a previous cardiac transplant irrespective of aetiology of underlying cardiomyopathy.		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 2.18	Other previous cardiac surgical or percutaneous procedures	1	No	Indicate if the patient had any other previous cardiac surgical or percutaneous procedures (including implantation of loop recorder)		Code n2
		2	Yes			
		99	Unknown		Information missing	
Medication: pre procedure This refers to medications taken by the patient before the procedure, including prior to this hospital admission. Medication administered as a single (*stat*) or occasional dose should not be included.						
A 3.01	Class I AAD	1	No	Indicate if the patient has in the past or prior to this procedure taken class I anti arrhythmic drug(s)	The patient has never taken class I AAD	Code n2
		2	Current		The patient was taking class I AAD regularly prior to this procedure	
		3	Former		The patient had taken class I AAD previously, but not regularly prior to this procedure	
		99	Unknown		Information missing	
A 3.02	Class III AAD (excluding amiodarone)	1	No	Indicate if the patient has in the past or prior to this procedure taken class III anti arrhythmic drug(s), excluding amiodarone	The patient has never taken class III AAD (excluding amiodarone)	Code n2
		2	Current		The patient was taking class III AAD (excluding amiodarone) regularly prior to this procedure	
		3	Former		The patient had taken class III AAD (excluding amiodarone) previously, but not regularly prior to this procedure	
		99	Unknown		Information missing	

ID	Field name/prompt	Short Code	Field content	Definition	Field content	Data Format
A 3.03	Amiodarone	1	No	Indicate if the patient has in the past or prior to this procedure taken amiodarone	The patient has never taken amiodarone	Code n2
		2	Current		The patient was taking amiodarone regularly prior to this procedure	
		3	Former		The patient had taken amiodarone previously, but not regularly prior to this procedure	
		99	Unknown		Information missing	
A 3.04	Beta-blockers	1	No	Indicate if the patient has in the past or prior to this procedure taken beta-blocker(s)	The patient has never taken beta-blocker(s)	Code n2
		2	Current		The patient was taking beta-blocker(s) regularly prior to this procedure	
		3	Former		The patient had taken beta-blocker(s) previously, but not regularly prior to this procedure	
		99	Unknown		Information missing	
A 3.05	Calcium antagonists	1	No	Indicate if the patient has in the past or prior to this procedure taken non-dihydropyridine calcium antagonist(s).	The patient has never taken non-dihydropyridine calcium antagonist(s)	Code n2
		2	Current		The patient was taking non-dihydropyridine calcium antagonist(s) regularly prior to this procedure	
		3	Former		The patient had taken non-dihydropyridine calcium antagonist(s) previously, but not regularly prior to this procedure	
		99	Unknown		Information missing	
A 3.06	Digoxin	1	No	Indicate if the patient has in the past or prior to this procedure taken digoxin	The patient has never taken digoxin	Code n2
		2	Current		The patient was taking digoxin regularly prior to this procedure	
		3	Former		The patient had taken digoxin previously.	
		99	Unknown		Information missing	
A 3.07	Diuretics	1	No	Indicate if the patient has in the past or prior to this procedure been taking diuretic(s)	The patient has never taken diuretic(s)	Code n2
		2	Current		The patient was taking diuretic(s) regularly prior to this hospital procedure	
		3	Former		The patient had taken diuretic(s) previously, but not regularly prior to this procedure	
		99	Unknown		Information missing	

ID	Field name/prompt	Short Code	Field content	Definition	Field content	Data Format
A 3.08	ACE inhibitors/ Angiotensin II blockers / Aldosterone antagonists	1	No	Indicate if the patient had been taking ACE inhibitor(s) or angiotensin II receptor blocker(s) or aldosterone antagonist(s) prior to this procedure	The patient has never taken ACE Inhibitor(s), angiotensin II receptor blocker(s) or aldosterone antagonists(s)	Code n2
		2	Current		The patient was taking ACE Inhibitor(s), angiotensin II receptor blocker(s) or aldosterone antagonists(s) regularly prior to this hospital procedure	
		3	Former		The patient had taken ACE Inhibitor(s), angiotensin II receptor blocker(s) or aldosterone antagonists(s) previously, but not regularly prior to this procedure	
		99	Unknown		Information missing	
A 3.09	Antiplatelet - aspirin	1	No	Indicate if the patient has been taking acetylsalicylic acid (ASA / aspirin) regularly prior to this procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 3.10	Antiplatelet - clopidogrel/ ticlopidine	1	No	Indicate if the patient has been taking ticlopidine or clopidogrel regularly prior to this procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 3.11	Antiplatelet - other	1	No	Indicate if the patient has been taking any other antiplatelet agent regularly prior to this procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 3.12	Heparin / LMWH	1	No	Indicate if the patient had been taking heparin or low molecular weight heparin [LMWH] (either intravenous or subcutaneous) agent(s) prior to this procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 3.13	Direct thrombin inhibitors	1	No	Indicate if the patient had been taken direct antithrombin agent(s) regularly prior to this procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 3.14	Coumarin anticoagulants	1	No	Indicate (specifically) if the patient had been taking anticoagulant medication regularly prior to this procedure	The patient was not taking warfarin or any other coumarin derivative regularly prior to this procedure	Code n2
		2	Warfarin		The patient was taking warfarin regularly prior to this procedure	
		3	Other coumarin derivatives		The patient was taking any other coumarin derivative (not warfarin) regularly prior to this procedure	
		99	Unknown		Information missing	

ID	Field name/prompt	Short Code	Field content	Definition	Field content	Data Format
Underlying Disease and Clinical Presentation						
A 4.01	Predominant presenting symptom	1	Asymptomatic	Indicate the **predominant** symptom / reason why the patient presented for medical attention (see definitions)		Code n2
		2	Fatigue			
		3	Palpitations			
		4	Dyspnoea			
		5	Chest pain			
		6	Near / pre-syncope			
		7	Syncope			
		8	Chronic heart failure			
		9	Systemic embolic event			
		10	Cardiac arrest / aborted sudden death			
		88	Other symptoms			
		99	Unknown		Information missing	
A 4.02	Functional class	1	NYHA I	Record the New York Heart Association (NYHA) functional status of the patient	No limitation of physical activity. Ordinary physical activity does not cause undue fatigue, dyspnoea or palpitations.	Code n2
		2	NYHA II		Slight limitation of physical activity. Comfortable at rest, but ordinary physical activity results in fatigue, palpitations or dyspnoea.	
		3	NYHA III		Marked limitation of physical activity. Comfortable at rest, but less than ordinary activity results in symptoms.	
		4	NYHA IV		Unable to carry on any physical activity without discomfort. Symptoms are present even at rest with increased discomfort with any physicial activity.	
		99	Unknown		Information missing	
A 4.03	Left ventricular (LV) function	1	Normal (>50%)	Indicate the patients estimated or calculated ejection fraction. This categorises the percentage of the blood emptied from the left ventricle at the end of the contraction. Data may have been derived from angiography, echocardiography, nuclear imaging, magnetic resonance imaging etc.		Code n2
		2	Slightly reduced (41-50%)			
		3	Moderately reduced (31-40%)			
		4	Severely reduced (<30%)			
		5	LV function not assessed			
		99	Unknown		Information missing	

ID	Field name/prompt	Short Code	Field content	Definition	Field content	Data Format
Relevant cardiac diagnoses						
A 5.01	Apparently normal heart	1	No	Indicate if the patient has an apparently normal heart		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 5.02	Ischaemic heart disease	1	No	Indicate if the patient has underlying ischaemic heart disease	The patient has no history of ischaemic heart disease (angina / acute coronary syndrome)	Code n2
		2	Yes, without Q wave MI		The patient has a history of ischaemic heart disease, without evidence or history of Q wave myocardial infarction	
		3	Yes, with Q wave MI		The patient has a history of ischaemic heart disease, with evidence or history of Q wave myocardial infarction	
		99	Unknown		Information missing	
A 5.03	Cardiomyopathy - hypertrophic	1	No	Indicate if the patient has hypertrophic cardiomyopathy. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 5.04	Cardiomyopathy - dilated	1	No	Indicate if the patient has dilated cardiomyopathy. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 5.05	Cardiomyopathy - (arrhythmogenic) right ventricular	1	No	Indicate if the patient has right ventricular cardiomyopathy. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 5.06	Cardiomyopathy - other	1	No	Indicate if the patient has any other cardiomyopathy. This includes cardiomyopathy secondary to subacute / acute myocarditis, restrictive cardiomyopathy or unclassified cardiomyopathy. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 5.07	Congenital heart disease	1	No	Indicate if the patient has congenital heart disease. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 5.08	Valvular heart disease	1	No	Indicate if the patient has valvular heart disease		Code n2
		2	Yes			
		99	Unknown		Information missing	

ID	Field name/prompt	Short Code	Field content	Definition	Field content	Data Format
A 5.09	Primary electrical disease - idiopathic ventricular fibrillation (normal heart)	1	No	Indicate if the patient has had idiopathic ventricular fibrillation. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 5.10	Primary electrical disease - Wolff-Parkinson-White trait	1	No	Indicate if the patient has Wolff-Parkinson-White trait. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 5.11	Primary electrical disease - congenital long QT	1	No	Indicate if the patient has a congenital long QT syndrome. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 5.12	Primary electrical disease - Brugada syndrome	1	No	Indicate if the patient has Brugada syndrome. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 5.13	Primary electrical disease - other	1	No	Indicate if the patient has any other primary electrical disease		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 5.14	Heart block	1	No	Indicate if the patient has any degree of heart block (first degree, any second degree or third degree AV block). [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 5.15	Neurally mediated syncope	1	No	Indicate if the patient has neurally mediated syncope. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
Arrhythmia indication						
A 6.01	SVT	1	No	Indicate (specifically) if the arrhythmia indication is that of a supraventricular tachycardia (one option only). [See definitions]		Code n2
		2	Sinus tachycardia			
		3	Atrial tachycardia			
		4	SVT - narrow complex			
		5	SVT aberrant- wide complex tachycardia			
		6	Wide complex tachycardia - pre excited			
		99	Unknown		Information missing	

ID	Field name/prompt	Short Code	Field content	Definition	Field content	Data Format
A 6.02	Atrial flutter	1	No	Indicate (specifically) if the arrhythmia indication is atrial flutter (one option only). [See definitions]		Code n2
		2	Yes, typical			
		3	Yes, atypical			
		99	Unknown		Information missing	
A 6.03	Atrial fibrillation	1	No	Indicate if the arrhythmia indication is atrial fibrillation. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 6.04	Ventricular tachycardia	1	No	Indicate if the arrhythmia indication is ventricular tachycardia. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 6.05	Ventricular fibrillation	1	No	Indicate if the arrhythmia indication is ventricular fibrillation. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 6.06	Other indication	1	No	Indicate (specifically) the arrhythmia indication, if not listed above	No other indication	Code n2
		2	No documented arrhythmia		There was no arrhythmia documented prior to the procedure	
		3	Atrial ectopics		Indicate if the arrhythmia indication is atrial ectopics	
		4	Wide complex tachycardia - unspecified		Wide-QRS tachycardia can be divided into three groups: SVT with bundle-branch block (BBB) or aberration, SVT with AV conduction over an accessory pathway, and VT. Wide complex implies a QRS duration greater then 120 mSec. Unspecified implies undetermined or uncertain mechanism of the wide complex tachycardia.	
		5	Ventricular ectopics		Ventricular ectopics: A ventricular ectopic is characterised by a QRS complex that is abnormal in shape and has a duration usually exceeding the dominant QRS complex, generally greater than 120 milliseconds.	
		88	Other		Other arrhythmia indication. Please specify	
		99	Unknown		Information missing	
Ablation target						
A 7.01	Sinus node	1	No	Indicate if the ablation target is the sinus node. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	

ID	Field name/prompt	Short Code	Field content	Definition	Field content	Data Format
A 7.02	AV node re-entry	1	No	Indicate if the ablation target is AV node re-entry. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 7.03	AV conduction (therapeutic AV block / modulation)	1	No	Indicate if the ablation target is the AV node for the purpose of inducing AV block or modulation		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 7.04	Single accessory pathway	1	No	Indicate if the ablation target is a single accessory pathway. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 7.05	Multiple accessory pathway	1	No	Indicate if the ablation targets are multiple accessory pathways. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 7.06	Focal atrial tachycardia	1	No	Indicate if the ablation target is focal atrial tachycardia. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 7.07	Typical flutter	1	No	Indicate if the ablation target is typical atrial flutter. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 7.08	Macroreentrant atrial tachycardia (RA)	1	No	Indicate if the ablation target is a macroreentrant right atrial tachycardia, including atypical flutter. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 7.09	Macroreentrant atrial tachycardia (LA)	1	No	Indicate if the ablation target is a macroreentrant left atrial tachycardia, including atypical flutter. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 7.10	Pulmonary vein foci triggering AF	1	No	Indicate if the ablation target is pulmonary vein foci, shown to trigger atrial fibrillation. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 7.11	Other foci triggering AF	1	No	Indicate if the ablation target is other foci, shown to trigger atrial fibrillation. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 7.12	Pulmonary venous encirclement (AF)	1	No	Indicate (specifically with or without isolation) if the ablation targets are pulmonary veins		Code n2
		2	Yes, with isolation			
		3	Yes, without isolation			
		99	Unknown		Information missing	

ID	Field name/prompt	Short Code	Field content	Definition	Field content	Data Format
A 7.13	Focal VT RVOT / LVOT	1	No	Indicate (specifically) if the ablation target is focal ventricular tachycardia from the right or left ventricular outflow tract. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 7.14	Fascicular VT LV	1	No	Indicate if the ablation target is that of fascicular ventricular tachycardia. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 7.15	LV scar related VT	1	No	Indicate if the ablation target is ventricular tachycardia related to a left ventricular scar		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 7.16	RV scar/dysplasia related VT	1	No	Indicate if the ablation target is ventricular tachycardia related to a right ventricular scar or right ventricular dysplasia. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 7.17	Bundle branch re-entrant VT	1	No	Indicate if the ablation target is that of bundle branch reentry ventricular tachycardia. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 7.18	Other target	1	No	Indicate if the ablation target is any other target		Code n2
		2	Yes			
		99	Unknown		Information missing	
Procedure						
A 8.01	Date of Procedure			Indicate the procedure date		Date
A 8.02	Total procedure duration			Indicate the time (in minutes) from commencement of preparation and draping of the patient until the patient is removed from the table at the end of the procedure.		n4
A 8.03	Total fluoroscopy time			Indicate the total fluoroscopy time (in minutes)		n3
A 8.04	Total exposure dose			Indicate the total radiation dose (cGy cm^-2)		n4
A 8.05	Number of recording electrode catheters			Indicate the number of recording electrode catheters		n1
A 8.06	Number of ablation electrode catheters			Indicate the number of ablation electrode catheters		n1
A 8.07	Fluoroscopy technique	1	Monoplane fluoroscopy	Indicate (specifically) the fluoroscopy technique		Code n2
		2	Biplane fluoroscopy			
		99	Unknown		Information missing	

ID	Field name/prompt	Short Code	Field content	Definition	Field content	Data Format
A 8.08	Basket multielectrode catheter	1	No	Indicate if a basket multielectrode catheter was used for the procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 8.09	Electro-anatomic reconstruction	1	No	Indicate if electro-anatomic reconstruction (*Carto, Navex, RPM*) was used for the procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 8.10	Non contact mapping	1	No	Indicate if non-contact mapping (*Ensite*) was used for the procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 8.11	Electrical field catheter localisation	1	No	Indicate if electrical field catheter localisation (*Localisa*) was used for the procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 8.12	Intracardiac echocardiogram	1	No	Indicate if intra-cardiac echocardiography was used for the procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 8.13	Other intracardiac navigation techniques	1	No	Indicate if other intracardiac navigational technique(s) were used		Code n2
		2	Yes			
		99	Unknown		Information missing	
Ablation technique						
A 9.01	Radiofrequency	1	No	Indicate if radiofrequency energy (including irrigated electrode) was used as the ablation technique		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 9.02	Cryoablation	1	No	Indicate if cryoablation was used as the ablation technique		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 9.03	Ultrasound	1	No	Indicate if ultrasound was used as the ablation technique		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 9.04	Microwave	1	No	Indicate if microwave energy was used as the ablation technique		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 9.05	Other ablation technique	1	No	Indicate if an other ablation technique was used		Code n2
		2	Yes			
		99	Unknown		Information missing	

ID	Field name/prompt	Short Code	Field content	Definition	Field content	Data Format
Ablation details						
A 10.05	Number of energy applications			Indicate the number of energy applications performed during this procedure		n3
A 10.06	Total time of energy applications			Indicate the total time of energy applications during this procedure (seconds)		n3
A 10.07	Post ablation observation time			Indicate the waiting time post ablation (minutes)		n3
A10.08	If ablation was not attempted indicate reason	1	Not applicable (ablation done)	If ablation was not attempted indicate (specifically) the reason	Ablation was performed	Code n2
		2	Not indicated		Ablation was not performed as it is the opinion of the operator that ablation is not indicated	
		3	Target not identified		Ablation was not performed as the target was not identified	
		4	Tachycardia not inducible		Ablation was not performed as tachycardia (the indication) could not be induced	
		5	Target high risk		Ablation was not performed as it is the opinion of the operator that the ablation target is too high risk	
		6	Target not reached		Ablation was not performed as the target was not reached.	
		88	Other		Ablation not performed for another reason	
		99	Unknown		Information missing	
Medication: during procedure						
A 11.01	IV heparin	1	No	Indicate whether intravenous heparin was administered during this procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 11.02	Sedation / anaesthesia	1	No	Indicate if the patient received intravenous sedation or received an anaesthetic (other than local) during this procedure		Code n2
		2	Sedation IV			
		3	General Anaesthetic			
		99	Unknown		Information missing	
A 11.03	IV Atropine	1	No	Indicate whether intravenous atropine was administered during this procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 11.04	IV Isoprenaline	1	No	Indicate whether intravenous isoprenaline was administered during this procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	

ID	Field name/prompt	Short Code	Field content	Definition	Field content	Data Format
A 11.05	IV Class I antiarrhythmic	1	No	Indicate whether intravenous class I antiarrhythmic drug(s) were administered during this procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 11.06	IV Beta-blockers	1	No	Indicate whether intravenous beta-blocker(s) were administered during this procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 11.07	IV Class III antiarrhythmic (including amiodarone)	1	No	Indicate whether intravenous class III antiarrhythmic drug(s) (including amiodarone) were administered during this procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 11.08	IV Calcium antagonist	1	No	Indicate whether intravenous calcium antagonist(s) were administered during this procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 11.09	IV Adenosine ATP	1	No	Indicate whether intravenous adenosine ATP was administered during this procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
Discharge						
A 12.01	Survival status at discharge	1	Alive	Indicate survival status at discharge		Code n2
		2	Dead			
		99	Unknown		Information missing	
A 12.02	Date of discharge / death			Indicate the date the patient was discharged from hospital or if the patient died record the date of death.		Date
Medication at discharge						
A 13.01	Class I AAD	1	No	Indicate if the patient, at the time of discharge, is taking Class I anti-arrhythmic drug(s)		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 13.02	Class III AAD (excluding Amiodarone)	1	No	Indicate if the patient, at the time of discharge, is taking Class III anti-arrhythmic drug(s) (excluding amiodarone)		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 13.03	Amiodarone	1	No	Indicate if the patient, at the time of discharge, is taking amiodarone		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 13.04	Beta-blockers	1	No	Indicate if the patient, at the time of discharge, is taking beta-blocker(s)		Code n2
		2	Yes			
		99	Unknown		Information missing	

ID	Field name/prompt	Short Code	Field content	Definition	Field content	Data Format
A 13.05	Calcium antagonists	1	No	Indicate if the patient, at the time of discharge, is taking non-dihydropyridine calcium antagonist(s).		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 13.06	Digoxin	1	No	Indicate if the patient, at the time of discharge, is taking digoxin		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 13.07	Diuretics	1	No	Indicate if the patient, at the time of discharge, is taking diuretic(s)		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 13.08	ACE inhibitors/ angiotensin II blockers / aldosterone antagonists	1	No	Indicate if the patient, at the time of discharge, is taking ACE inhibitor(s) or angiotensin receptor blocker(s) or aldosterone antagonist(s)		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 13.09	Antiplatelet - aspirin	1	No	Indicate if the patient, at the time of discharge is taking acetylsalicylic acid (ASA/Aspirin)		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 13.10	Antiplatelet -clopidogrel/ ticlopidine l	1	No	Indicate if the patient, at the time of discharge, is taking ticlopidine or clopidogrel		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 13.11	Antiplatelet - other	1	No	Indicate if the patient, at the time of discharge, is taking any other antiplatelet medication		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 13.12	Heparin / LMWH	1	No	Indicate if the patient, at the time of discharge, is taking heparin or low molecular weight heparin [LMWH] (either intravenous or subcutaneous)		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 13.13	Direct thrombin inhibitors	1	No	Indicate if the patient, at the time of discharge, is taking direct antithrombin agent(s)		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 13.14	Coumarin anticoagulants	1	No	Indicate (specifically) if the patient, at the time of discharge is taking anticoagulant medication		Code n2
		2	Warfarin			
		3	Other coumarin derivatives			
		99	Unknown		Information missing	

ID	Field name/prompt	Short Code	Field content	Definition	Field content	Data Format
Post-procedure complications (from date of procedure to date of first follow-up)						
A 14.01	Immediate post procedure success	1	Successful	Indicate (specifically the degree) if there was immediate post procedure success	Indicate if the procedure was successful	Code n2
		2	Partially successful		Indicate if, in the opinion of the operator, if the procedure was partially successful [See definitions]	
		3	Unsuccessful		Indicate if the procedure was unsuccessful	
		99	Unknown		Information missing	
A 14.02	Unintended AV block	1	No	Indicate (specifically) if the patient experienced AV block post ablation		Code n2
		2	First degree AV block		During first-degree AV block, every atrial impulse conducts to the ventricles and a regular ventricular rate is produced, but the PR interval exceeds 0.20 second in adults.	
		3	Second degree AV block		Second degree type I (Wenckebach) block is characterised by progressive prolongation of the PR interval until an impulse is not conducted. Second degree type II (Mobitz) denotes occasional or repetitive sudden block of conduction of an impulse without prior measurable lengthening of conduction time. 2:1 AV block is when AV conduction occurs in a 2:1 pattern, block cannot be unequivocally classified as type I or type II.	
		5	Complete AV block		Third degree AV block is defined as absence of AV conduction	
		99	Unknown		Information missing	
A 14.03	Unanticipated pacemaker implant required	1	No	Indicate if an unplanned pacemaker was implanted post ablation		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 14.04	Haematoma / pseudoaneurysm/ AV fistula at access site	1	No	Indicate if the patient had a haematoma or a pseudoaneurysm or an AV fistula at the access site.		Code n2
		2	Yes, not requiring repair			
		3	Yes, requiring repair			
		99	Unknown		Information missing	
A 14.05	Arterial occlusion	1	No	Indicate if the patient experienced an arterial occlusion post ablation		Code n2
		2	Yes, not requiring repair			
		3	Yes, requiring repair			
		99	Unknown		Information missing	

ID	Field name/prompt	Short Code	Field content	Definition	Field content	Data Format
A 14.06	Central venous complications	1	No	Indicate if the patient experienced an intrathoracic vein thrombosis or laceration		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 14.07	Deep venous thrombosis	1	No	Indicate if the patient experienced a deep vein thrombosis post ablation, felt to be related to this procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 14.08	Pulmonary embolism	1	No	Indicate if the patient experienced a pulmonary embolism post ablation, felt to be related to this procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 14.09	Pneumothorax	1	No	Indicate if the patient experienced a pneumothorax post ablation		Code n2
		2	Yes, not requiring drainage			
		3	Yes, requiring drainage			
		99	Unknown		Information missing	
A 14.10	Haemothorax	1	No	Indicate if the patient experienced a haemothorax post ablation		Code n2
		2	Yes, not requiring drainage			
		3	Yes, requiring drainage			
		99	Unknown		Information missing	
A 14.11	Pericardial effusion / tamponade	1	No	Indicate if the patient experienced a pericardial effusion / tamponade post ablation		Code n2
		2	Yes, not requiring pericardiocentesis			
		3	Yes, requiring pericardiocentesis			
		4	Yes, requiring thoracotomy			
		99	Unknown		Information missing	
A 14.12	Stroke or RIND or TIA	1	No	Indicate if the patient experienced a stroke or RIND or TIA post ablation. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
A 14.13	Myocardial infarction	1	No	Indicate if the patient experienced a myocardial infarction post ablation. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	

ID	Field name/prompt	Short Code	Field content	Definition	Field content	Data Format
A 14.14	Pulmonary vein stenosis	1	No	Indicate if the patient experienced pulmonary vein stenosis post ablation		Code n2
		2	Yes, asymptomatic			
		3	Yes, symptomatic			
		99	Unknown		Information missing	
A 14.15	Other complication	1	No	Indicate if patient experienced any other complication		Code n2
		2	Yes			
		99	Unknown		Information missing	
Recurrence						
A 15.01	If recurrence, time to recurrence (days)	0	None	Indicate (specifically) when the arrhythmia recurred.		Code n2
		1	Tachycardia recurrence, early (< 7 days)			
		2	Tachycardia recurrence, late (> 7 days)			
		3	Preexcitation recurrence, early (< 7 days)			
		4	Preexcitation recurrence, late (> 7 days)			
		5	AV conduction recurrence, early (< 7 days)			
		6	AV conduction recurrence, late (> 7 days)			
		99	Unknown		Information missing	
Follow Up						
A 16.01	Date of follow up			Indicate the date of last follow up alive. This may be the date of follow up or the date the patient is last seen alive by verifiable sources		Date
A 16.02	Survival status at follow up	1	Alive	Indicate survival status at follow up		Code n2
		2	Dead			
		99	Unknown		Information missing	

Ablation Definitions

Ablation Data Standards (definitions)		
ID No	**Field**	**Definitions**
A 2.01	History of cerebrovascular embolic disease	**History of cerebrovascular embolic event as defined by one or more of :** a) Cerebrovascular Accident (CVA): patient has a history of stroke i.e. loss of neurological function caused by an ischaemic event with residual symptoms at least 72 hours after onset. b) Reversible ischaemic neurological deficit (RIND): patient has a history of loss of neurological function caused by ischaemia with symptoms at least 24 hours after onset but complete return of function within 72 hours. c) Transient Ischaemic Attack (TIA): Patient has a history of loss of neurological function caused by ischaemia that was abrupt in onset but with complete return of function within 24 hours **[ACC]**
A 4.01	Predominant presenting symptom	**Asymptomatic** means having no symptoms of illness or disease
		Fatigue (loss of energy, lassitude, listlessness, languor) refers to a weariness and loss of that sense of well-being typically found in patients healthy of body and mind **[Harrison's Principles of Internal Medicine]**
		Palpitations may be defined as an awareness of the beating of the heart, either fast or slow, an awareness most commonly brought about by a change in the heart's rhythm or an augmentation of its contractility. **[Harrison's Principles of Internal Medicine (altered)]**
		Dyspnoea is defined as abnormal or uncomfortable breathing in the context of what is normal for a person according to his or her level of fitness and exertional threshold for breathlessness. **[Silvestri GA, Mahler DA. Evaluation of dyspnoea in the elderly patient. Clin Chest Med 1993;14:393-404]**
		Chest pain may be defined as a sensation of chest discomfort, heaviness or pressure.
		Near / pre-syncope is a descriptive term for all sensations directly preceding syncope whether or not they are followed by complete loss of consciousness. **[ESC Guidelines on management (diagnosis and treatment) of syncope (2001) (altered)]**
		Syncope is a symptom, defined as a transient, self-limited loss of consciousness, usually leading to falling. The onset of syncope is relatively rapid, and the subsequent recovery is spontaneous, complete, and usually prompt. The underlying mechanism is a transient global cerebral hypoperfusion. **[ESC Guidelines on management (diagnosis and treatment) of syncope (2001)]**

ID No	Field	Definitions
		Chronic heart failure. Criteria 1 and 2 should be fulfilled in all cases 1. Symptoms of heart failure (at rest or during exercise) and 2. Objective evidence of cardiac dysfunction (at rest) and (in cases where the diagnosis is in doubt) 3. Response to treatment directed towards heart failure One commonly used definition is: heart failure is a pathophysiological state in which an abnormality of cardiac function is responsible for the failure of the heart to pump blood at a rate commensurate with the requirements of the metabolising tissues. **[Task Force for the Diagnosis and Treatment of Chronic Heart Failure, European Society of Cardiology]**
		Cardiac arrest / aborted sudden death. Sudden cardiac death - 'Natural death due to cardiac causes, heralded by abrupt loss of consciousness within one hour of the onset of acute symptoms; preexisting heart disease may have been known to be present, but the time and mode of death are unexpected. **[Task Force on Sudden Cardiac Death of the European Society of Cardiology (2001)]**
		Any other symptom causing the patient to seek medical attention, not listed above. Please specify
		Unknown Information missing
A 5.02	Ischaemic heart disease	**Q-wave MI**: Development of any Q wave in leads V1 through V3, or the development of a Q wave greater than or equal to 30 ms (0.03 s) in leads I, II, aVL, aVF, V4, V5, or V6. (Q-wave changes must be present in any 2 contiguous leads and be greater than or equal to 1 mm in depth.) [**European Society of Cardiology / American College of Cardiology Definition of Myocardial Infarction** **Reference: Myocardial infarction redefined- a consensus document of the Joint European Society of Cardiology /** **American College of Cardiology Committee for the redefinition of myocardial infarction. Euro Heart Journal. 2000;** **21:1502-1513.]**
A 5.03	Cardiomyopathy - hypertrophic	**Hypertrophic cardiomyopathy (HCM)** is an inherited heart muscle disorder caused by mutations in genes encoding cardiac sarcomeric proteins. HCM has a highly characteristic pathology (myocardial hypertrophy, myocyte disarray and fibrosis) which contributes to a broad spectrum of functional abnormalities that includes myocardial ischaemia, diastolic dysfunction and left ventricular outflow obstruction, resulting in congestive heart failure, clinically important arrhythmias (such as atrial fibrillation) and SCD in some patients. **[Task Force on Sudden Cardiac Death of the European Society of Cardiology (2001)]**
A 5.04	Cardiomyopathy - dilated	**Idiopathic dilated cardiomyopathy (DCM)** is a chronic heart muscle disease characterised by left ventricular dilatation and impairment of systolic function. **[Task Force on Sudden Cardiac Death of the European Society of Cardiology (2001)]**
A 5.05	Cardiomyopathy - (arrhythmogenic) right ventricular	**Right ventricular cardiomyopathy (RVC),** originally termed arrhythmogenic right ventricular dysplasia, is a disease of the myocardium, characterised by regional or global fibro-fatty replacement of the right ventricular myocardium, with or without left ventricular involvement and with relative sparing of the septum. **[Task Force on Sudden Cardiac Death of the European Society of Cardiology (2001)]**

ID No	Field	Definitions
A 5.06	Cardiomyopathy - other	According to the definition of the World Health Organisation '**myocarditis** is an inflammatory heart muscle disease associated with cardiac dysfunction'. Myocarditis may occur as the consequence of a systemic infective disease or may be the consequence of a silent infection. Clinical diagnoses of myocarditis may be difficult as the clinical manifestations are frequently non-specific ranging from chest pain to arrhythmias and from heart failure to SCD. **[Task Force on Sudden Cardiac Death of the European Society of Cardiology (2001)]** **Restrictive cardiomyopathy i**s characterised by restrictive filling and reduced diastolic volume of either or both ventricles with normal or near-normal systolic function and wall thickness. Increased interstitial fibrosis may be present. It may be idiopathic or associated with other disease (eg, amyloidosis; endomyocardial disease with or without hypereosinophilia). **[Report of the 1995 World Health Organization/International Society and Federation of Cardiology Task Force on the Definition and Classification of Cardiomyopathies (Circulation. 1996;93:841-842.)]** **Unclassified Cardiomyopathies** include a few cases that do not fit readily into any group (eg, fibroelastosis, noncompacted myocardium, systolic dysfunction with minimal dilatation, mitochondrial involvement). **[Report of the 1995 World Health Organisation/International Society and Federation of Cardiology Task Force on the Definition and Classification of Cardiomyopathies (Circulation. 1996;93:841-842.)]**
A 5.07	Congenital heart disease	**Congenital heart disease** is defined as an abnormality in cardiac structure or function that is present at birth, even if it is discovered much later. **[Heart Disease 6th Ed. Braunwald Zipes Libby (altered)]**
A 5.09	Primary electrical disease - idiopathic ventricular fibrillation (normal heart)	Ventricular fibrillation in the absence of structural heart disease, well characterised cardiac electrophysiologic abnormalities, cardiotoxicity, electrolyte abnormalities, known heritable arrhythmogenic conditions and other transient conditions. **[Task Force on Sudden Cardiac Death of the European Society of Cardiology European Heart Journal (2001) 22, 1374–1450 (altered)]**
A 5.10	Primary electrical disease - Wolff-Parkinson-White trait	Three basic features typify the ECG abnormalities of patients with the usual form of **WPW** conduction caused by an anomalous AV connection: (1) PR interval less than 120 milliseconds during sinus rhythm; (2) QRS complex duration exceeding 120 milliseconds with a slurred, slowly rising onset of the QRS in some leads (delta wave) and usually a normal terminal QRS portion; and (3) secondary ST-T wave changes that are generally directed in an opposite direction to the major delta and QRS vectors. **[Heart Disease 6th Ed. Braunwald Zipes Libby (altered)]**
A 5.11	Primary electrical disease - congenital long QT	The **long QT syndrome (LQTS)** is a familial disease characterised by an abnormally prolonged QT interval and, usually, by stress-mediated life threatening ventricular arrhythmias. This is a primary electrical disorder, usually without evidence of structural heart disease or LV dysfunction. **[Task Force on Sudden Cardiac Death of the European Society of Cardiology (2001) (altered)]**
A 5.12	Primary electrical disease - Brugada syndrome	**Brugada syndrome** - Individuals with syncope, resuscitated cardiac arrest, and/or family history of unexplained sudden cardiac death who have variants of right bundle branch block QRS morphology and ST-segment elevation in leads V1 and V3 **[Task Force on Sudden Cardiac Death of the European Society of Cardiology (2001)] (altered)**

ID No	Field	Definitions
A 5.14	Heart block	**Third degree AV block** is defined as absence of AV conduction **Second degree type I** (Wenckebach) block is characterised by progressive prolongation of the PR interval until an atrial impulse is not conducted to the ventricles. **Second degree type II** (Mobitz) denotes occasional or repetitive sudden block of conduction of an impulse without prior significant lengthening of conduction time (<80 ms). **2:1 AV block** is when AV conduction occurs in a 2:1 pattern, every other P wave not being conducted to the ventricles. Block cannot be unequivocally classified as type I or type II. **First degree** During first-degree AV block, every atrial impulse conducts to the ventricles and a regular ventricular rate is produced, but the PR interval exceeds 0.20 second in adults less than 75 years or exceeds 0.24 second in persons 75 years or older. **Normal AV conduction** There is no degree of heart block
A 5.15	Neurally mediated syncope	**'Neurally-mediated reflex syncopal syndrome' refers to a reflex that, when triggered, gives rise to vasodilatation and bradycardia, although the contribution of both to systemic hypotension and cerebral hypoperfusion may differ considerably.** **[Task Force Report Guidelines on management (diagnosis and treatment) of syncope (European Heart Journal (2001) 22, 1256–1306)]**
A 6.01	SVT	**No**: The arrhythmia indication is not an SVT as detailed below
		Sinus tachycardia- **Inappropriate sinus tachycardia** is a persistent increase in resting heart rate or sinus rate unrelated to, or out of proportion with, the level of physical, emotional, pathological, or pharmacological stress. **Sinus node re-entry tachycardia** arise from re-entrant circuits involving the sinus node's production of paroxysmal, often nonsustained bursts of tachycardia with P waves that are similar, if not identical, to those in sinus rhythm. They are usually triggered and terminated abruptly by an atrial premature beat. **[European Society of Cardiology and the North American Society of Pacing and Electrophysiology]** **And** **[ACC/AHA/ESC Guidelines for the Management of Patients with Supraventricular Arrhythmias (2003)]**

ID No	Field	Definitions
		Atrial tachycardia Focal ATs are characterised by regular atrial activation from atrial areas with centrifugal spread to both atria. It can be due to enhanced automaticity, triggered activity, or microreentry (very small reentrant circuits). Neither the sinus nor the AV node plays a role in the initiation or perpetuation of the tachycardia. **[ACC/AHA/ESC Guidelines for the management of patients with Supraventricular Arrhythmias (2003) (altered)]** **and** **[Classification of Atrial Flutter and Regular Atrial Tachycardia According to Electrophysiologic Mechanism and Anatomic Bases: A Statement from a Joint Expert Group from the Working Group of Arrhythmias of the European Society of Cardiology and the North American Society of Pacing and Electrophysiology] European Heart Journal 2001;22:1162-1182.]**
		SVT, narrow complex SVT is used to describe re-entrant arrhythmias involving the atrioventricular (AV) junction (atrioventricular nodal reciprocating tachycardia [AVNRT]), atrium [atrial tachycardia (AT)], or AV-reciprocating rhythms [atrioventricular reciprocating tachycardia (AVRT)]). Narrow complex implies a QRS duration less than 120 mSec. **[ACC/AHA/ESC Guidelines for the Management of Patients with Supraventricular Arrhythmias (2003)]**
		SVT, wide complex is an SVT with bundle-branch block (BBB) or aberration, or SVT with AV conduction over an accessory pathway. The diagnosis is made with absolute certainty only at EPS. Wide complex implies a QRS duration greater then 120 mSec. **[ACC/AHA/ESC Guidelines for the management of patients with Supraventricular Arrhythmias (2003) (altered)]**
		Wide complex tachycardia pre-excited is an SVT with AV conduction over an accessory pathway. Wide complex implies a QRS duration greater than 120 mSec. The diagnosis is made with absolute certainty only at EPS. **[ACC/AHA/ESC Guidelines for the management of patients with Supraventricular Arrhythmias (2003)(altered)]**
		Unknown

ID No	Field	Definitions
A 6.02	Atrial flutter	Electrocardiographically, **flutter** refers classically to a pattern of regular tachycardia (characterised by a saw-tooth pattern of regular atrial activation called flutter (f) waves on the ECG, particularly visible in leads II, III, and aVF) with rate greater than or equal to 240 beats/min (cycle length less than or equal to 250 mSec) lacking an isoelectric baseline between deflections. In **typical atrial flutter**, activation of the RA is reentrant, bounded anteriorly by the tricuspid orifice and posteriorly by a combination of anatomic obstacles (orifices of superior vena cava [SVC] and inferior vena cava [IVC] and eustachian ridge) and functional barriers (region of the crista terminalis). The most common direction of activation in the circuit (90% of clinical cases) is descending the anterior and lateral walls and ascending the septal and posterior walls of the RA. This has been described as counterclockwise reentry, when viewed in the left anterior oblique, fluoroscopic perspective. In the untreated state, the atrial rate typically ranges from 240 to 320 beats per min, with f waves inverted in ECG leads II, III, and aVF and upright in lead V1. The opposite direction of activation, descending the septum and ascending the anterior (clockwise reentry), occurs in 10% of clinical cases and characterises reverse typical atrial flutter. This results in f waves that are upright in leads II, III, and aVF and inverted in lead V1. **Atypical Atrial Flutter** is a descriptive term for an atrial tachycardia with an ECG pattern of continuous undulation of the atrial complex, different from typical or reverse typical flutter, at a rate greater than or equal to 240 beats/min. **[ACC/AHA/ESC guidelines for the management of patients with atrial fibrillation (2001)]** **and** **[Classification of Atrial Flutter and Regular Atrial Tachycardia According to Electrophysiologic Mechanism and Anatomic Bases: A Statement from a Joint Expert Group from the Working Group of Arrhythmias of the European Society of Cardiology and the North American Society of Pacing and Electrophysiology. European Heart Journal 2001;22:1162-1182.]**
A 6.03	Atrial fibrillation	**Atrial fibrillation** is a supraventricular tachyarrhythmia characterised by uncoordinated atrial activation with consequent deterioration of atrial mechanical function. On the electrocardiogram (ECG), AF is described by the replacement of consistent P waves by rapid oscillations or fibrillatory waves that vary in size, shape, and timing, associated with an irregular, frequently rapid ventricular response when atrioventricular (AV) conduction is intact. **[Task Force Report ACC/AHA/ESC guidelines for the management of patients with atrial fibrillation (2001)]**
A 6.04	Ventricular tachycardia	**Ventricular tachycardia** as defined as a broad complex (QRS greater than 120mSec in duration) tachycardia (three or more consecutive complexes), originating from the ventricle(s) (shown not to be SVT with bundle-branch block (BBB) or aberration or SVT with AV conduction over an accessory pathway) **[ACC/AHA/ESC Guidelines for the Management of Patients with Supraventricular Arrhythmias (2003) (altered)]**
A 6.05	Ventricular fibrillation	**Ventricular fibrillation** - ineffective, rapid, disorganised ventricular arrhythmia, resulting in no uniform ventricular contraction and no appreciable cardiac output

ID No	Field	Definitions
A 7.01	Sinus Node	The **SA node** is a collection of morphologically and electrically distinct cells. The central portion of the sinus node, which houses the dominant pacemaking function, contains cells with longer action potentials and faster rates of phase 4 diastolic depolarisation than other cardiac cells. **[ACC/AHA/ESC Guidelines for the management of patients with Supraventricular Arrhythmias (2003)]** **Sinus nodal ablation** consists of application of RF to the endocardial origin of right atrial activation, usually in the high posterior right atrium, or even the superior vena cava, in a descending pattern, until sinus rate decreases significantly. **[Lee RJ, Kalman JM, Fitzpatrick AP, Epstein LM, Fisher WG, Olgin JE, Lesh MD, Scheinman MM. Radiofrequency catheter modification of the sinus node for "inappropriate" sinus tachycardia. Circulation 1995;92:2918-28.]**
A 7.02	AV node re-entry	**Atrioventricular nodal reciprocating tachycardia** involves reciprocation between two functionally and anatomically distinct pathways. In most cases, the fast pathway appears to be located near the apex of Koch's triangle. This triangle is bounded by the tendon of Tadaro superiorly, and the tricuspid annulus is the base. The slow pathway extends inferoposterior to the compact AV-node tissue and stretches along the septal margin of the tricuspid annulus at the level of, or slightly superior to, the coronary sinus, and constitutes generally the main target for ablation. Other pathways may be involved. **[ACC/AHA/ESC Guidelines for the Management of Patients with Supraventricular Arrhythmias (2003) (altered)]**
A 7.04	Single accessory pathway	Typical **accessory pathways** are extra nodal pathways that connect the myocardium of the atrium and the ventricle across the AV groove. **[ACC/AHA/ESC Guidelines for the Management of Patients with Supraventricular Arrhythmias (2003)]**
A 7.05	Multiple accessory pathway	Typical **accessory pathways** are extra nodal pathways that connect the myocardium of the atrium and the ventricle across the AV groove. **[ACC/AHA/ESC Guidelines for the Management of Patients with Supraventricular Arrhythmias (2003)]**
A 7.06	Focal atrial tachycardia	**Focal ATs** are characterised by regular atrial activation from atrial areas with centrifugal spread to both atria. It can be due to enhanced automaticity, triggered activity, or microreentry (very small reentrant circuits). Neither the sinus nor the AV node plays a role in the initiation or perpetuation of the tachycardia. **[ACC/AHA/ESC Guidelines for the management of patients with Supraventricular Arrhythmias (2003) (altered)]** **and** **[Classification of Atrial Flutter and Regular Atrial Tachycardia According to Electrophysiologic Mechanism and Anatomic Bases: A Statement from a Joint Expert Group from the Working Group of Arrhythmias of the European Society of Cardiology and the North American Society of Pacing and Electrophysiology. European Heart Journal 2001;22:1162-1182. (altered)]**
A 7.07	Typical flutter	Typical flutter includes the "common" counterclockwise rotation around the tricuspid ring in the left anterior oblique view and the less common clockwise rotation. Ablation target is the inferior vena cava-tricuspid ring isthmus and the endpoint is bidirectional block **[ACC/AHA/ESC Guidelines for the Management of Patients with Supraventricular Arrhythmias (2003)]**

ID No	Field	Definitions
A 7.08	Macroreentrant atrial tachycardia (RA)	Atypical flutter or macroreentrant right atrial tachycardia is defined by a large reentry circuit, not dependent on the inferior vena cava-tricuspid isthmus as a necessary link. In the RA the circuits can be centred around the superior vena cava, with or without areas of lines of conduction block and around surgical scars or septal patches. The critical isthmus targeted for ablation has to be located individually in each tachycardia. There may be more than one circuit and typical flutter may coexist in the same patient. **[ACC/AHA/ESC Guidelines for the Management of Patients with Supraventricular Arrhythmias (2003)]** **and** **[Classification of Atrial Flutter and Regular Atrial Tachycardia According to Electrophysiologic Mechanism and Anatomic Bases: A Statement from a Joint Exper Group from the Working Group of Arrhythmias of the European Society of Cardiology and the North American Society of Pacing and Electrophysiology. European Heart Journal 2001;22:1162-1182.]**
A 7.09	Macroreentrant atrial tachycardia (LA)	Left atrial atypical flutter or macroreentrant tachycardia can have many different configurations, rotating about the mitral ring, the right or left pulmonary veins, areas of low voltage suggestive of scarred myocardium, lines of functional block, or a combination of any of the above. There may be more than one circuit. The critical isthmus targeted for ablation has to be located individually in each tachycardia. [**Cosío FG, Martín-Peñato A, Pastor A, Núñez A, Goicolea A. Atypical Flutter: A Review. PACE 2003;26:2157-2169]**
A 7.10	Pulmonary vein foci triggering AF	**Atrial fibrillation** is a supraventricular tachyarrhythmia characterized by uncoordinated atrial activation with consequent deterioration of atrial mechanical function. On the electrocardiogram (ECG), AF is described by the replacement of consistent P waves by rapid oscillations or fibrillatory waves that vary in size, shape, and timing, associated with an irregular, frequently rapid ventricular response when atrioventricular (AV) conduction is intact. **[Task Force Report ACC/AHA/ESC guidelines for the management of patients with atrial fibrillation (2001)]** **Ablation of pulmonary vein foci** includes direct ablation of the foci inside the vein, as well as electrical exclusion of the pulmonary veins, as shown by recording and pacing inside the target vein, while applying ablation energy at the pulmonary vein-atrial junction.
A 7.11	Other foci triggering AF	Other foci triggering atrial fibrillation that can be located in the superior vena cava, coronary sinus, ligament of Marshall, or right or left atrial walls. **[ACC/AHA/ESC Guidelines for the Management of Patients with Supraventricular Arrhythmias (2003) (altered)]** **[ACC/AHA/ESC guidelines for the management of patients with atrial fibrillation (2001)(altered)]**
A 7.13	Focal VT RVOT / LVOT	Ventricular tachycardia of focal origin, in the absence of known heart disease, often in the form of non-sustained repetitive bursts . ECG showing wide QRS with inferior axis and RBBB pattern. Focus of origin located generally in the right ventricular outflow tract, but also occasionally in the left ventricular outflow tract. **[NASPE Policy statement on catheter ablation : Personnel, policy, procedures, and therapeutic recommendations (2002) (altered)]**
A 7.14	Fascicular VT LV	**Fascicular tachycardia** is a left septal VT, generally paroxysmal and sustained, arising in the left inferior septum, often preceded by a fascicular potential. Entrainment has been demonstrated, which suggests reentry as a cause of some of the tachycardias.

ID No	Field	Definitions
A 7.16	RV scar / dysplasia related VT	Ventricular tachycardia, generally sustained and with left bundle branch block morphology, marking its right ventricular origin, in patients with established diagnosis of **right ventricular cardiomyopathy**.
A 7.17	Bundle branch re-entrant VT	**Ventricular tachycardia dependent on both branches of the His bundle for reentry.** A His activation is recorded in each cycle with an H-V interval that equals or exceeds the H-V interval of the baseline supraventricular rhythm outside tachycardia. Changes in VH or HV intervals are reflected in changes of length of the following cycle. **['Cardiac Electrophysiology. From Cell To Bedside.' DP Zipes and J Jalife editors. Saunders, Philadelphia, 2000.]**

ID No	Field	Definitions
A 14.01	Immediate post procedure success	**Partially successful** 1) WPW a. Ablation of anterograde conduction only (delta wave), retrograde conduction persists b. Ablation of one or more accessory pathway(s), but one or more other pathway(s) remain active c. Conduction through accessory pathway persists, but tachycardia is not inducible or is only non-sustained, where it was previously sustained 2) INTRANODAL TACHYCARDIA a. Tachycardia is still inducible, but not sustained, while before it was sustained 3) FOCAL ATRIAL TACHYCARDIA a. One focus is ablated, but others remain. b. Tachycardia that is easily induced becomes difficult to induce and is not sustained 4) TYPICAL ATRIAL FLUTTER a. Flutter is interrupted and becomes not inducible, but isthmus conduction persists, even if slow b. Only unidirectional isthmus block is attained after ablation 5) ATYPICAL ATRIAL FLUTTER / MACROREENTRANT TACHYCARDIA a. One circuit is ablated, but other tachycardias remain inducible 6) FOCAL RV / LV OUTFLOW TRACT VENTRICULAR TACHYCARDIA Tachycardia, even not sustained, is not inducible, but frequent premature ventricular beats with the same morphology persist, including repetitive forms 7) SCAR RELATED RV VENTRICULAR TACHYCARDIA a. One circuit / morphology is made non-inducible, but others remain inducible b. Tachycardia that was very easily inducible becomes difficult to induce and non-sustained. 8) SCAR RELATED LV VENTRICULAR TACHYCARDIA a. One circuit / morphology is made non-inducible, but others remain inducible b. Tachycardia that was very easily inducible becomes difficult to induce and non-sustained. 9) EXCLUSION OF TRIGGERING FOCI IN ATRIAL FIBRILLATION a. Incomplete electrical exclusion of one or more but not all targeted pulmonary veins. (*This does not refer to encircling pulmonary vein ablation procedures where pulmonary vein isolation is not a necessary endpoint and the immediate endpoint is less clear)*

ID No	Field	Definitions
A 14.12	Stroke or RIND or TIA	**History of cerebrovascular embolic event as defined by one or more of :** a) Cerebrovascular Accident (CVA): patient has a history of stroke i.e. loss of neurological function caused by an ischaemic event with residual symptoms at least 24 hours after onset. b) Reversible ischaemic neurological deficit (RIND): patient has a history of loss of neurological function caused by ischaemia with symptoms at least 24 hours after onset but complete return of function within 72 hours. c) Transient ischaemic Attack (TIA): Patient has a history of loss of neurological function caused by ischaemia that was abrupt in onset but with complete return of function within 24 hours **[ACC]**
A 14.13	Myocardial Infarction	**New myocardial infarction after the ablation procedure,** as characterised by clinical symptoms (chest pain) and/or changes in ECG, biochemical markers, or pathological findings. **[European Society of Cardiology / American College of Cardiology Definition of Myocardial Infarction** **Reference: Myocardial infarction redefined- a consensus document of the Joint European Society of Cardiology /** **American College of Cardiology Committee for the redefinition of myocardial infarction. Euro Heart Journal. 2000;** **21:1502-1513.(altered)]**

Implantable Cardioverter Defibrillators Data Standards

ICD Data Standards

ICD Data Standards						
ID No	**Field**	**Short Code**	**Field content**	**Definition of Field**	**Field content**	**Data Format**
Demographics						
ICD 1.01	Hospital identification number			Indicate the hospital identification number		Id an100
ICD 1.02	Patient identification number			Indicate the patient identification number		Id an100
ICD 1.03	Date of birth			The date the patient was born as recorded on their birth certificate		Date
ICD 1.04	Sex	1	Male	The sex of the patient		Code n2
		2	Female			
		99	Unknown		Information missing	
ICD 1.05	Height			Height in cms		n3
ICD 1.06	Weight			Weight in kgs		n3.1
Past History Previous history may be documented in the patient's medical notes, GP letter or other referral letters or the patient or the patient's family may have positive information from medical professionals that confirm history.						
ICD 2.01	History of cerebrovascular embolic disease	1	No	Indicate if the patient has a history of cerebrovascular embolic disease. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 2.02	Other arterial embolic episodes	1	No	Indicate if the patient has had any other arterial embolic episodes, apart from cerebro-embolic.		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 2.03	Diabetes mellitus	1	Non-diabetic	Indicate if the patient has a history of diabetes mellitus diagnosed prior to the current admission	Patient does not have diabetes	Code n2
		2	Diabetic (dietary control)		The patient has received dietary advice appropriate to their condition but is not receiving medication	
		3	Diabetic (oral medication)		The patient uses oral medication to control their condition	
		4	Diabetic (insulin)		The patient uses insulin treatment, with or without oral therapy, to control their condition	
		5	Newly diagnosed diabetic		If a patient is admitted with new (not previously diagnosed) diabetes use option "newly diagnosed diabetes" as final treatment modality will not be known	
		99	Unknown		Information missing	

ID No	Field	Short Code	Field content	Definition of Field	Field content	Data Format
ICD 2.04	Hypertension	1	No	Indicate if the patient has a history of hypertension diagnosed and/or treated by a physician		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 2.05	Previous implantable cardioverter defibrillator (ICD) implanted	1	No	Indicate if the patient had a previous ICD implanted		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 2.06	Previous pacemaker implanted	1	No	Indicate if the patient had a previous permanent pacemaker implanted		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 2.07	Previous electrophysiology study (diagnostic)	1	No	Indicate if the patient had a previous EP diagnostic study		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 2.08	Previous catheter ablation for supraventricular tachycardia	1	No	Indicate if the patient had a previous catheter ablation for supraventricular tachycardia		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 2.09	Previous catheter ablation for ventricular tachycardia	1	No	Indicate if the patient had a previous catheter ablation for ventricular tachycardia		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 2.10	Previous percutaneous intervention - coronary	1	No	Indicate if the patient had a previous percutaneous intervention for coronary artery disease		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 2.11	Previous percutaneous intervention- valvular	1	No	Indicate if the patient had a previous percutaneous intervention for valvular heart disease		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 2.12	Previous percutaneous intervention- congenital	1	No	Indicate if the patient had a previous percutaneous intervention for congenital heart disease		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 2.13	Previous percutaneous intervention - chemical septal ablation	1	No	Indicate if the patient had a previous percutaneous intervention in the form of chemical septal ablation		Code n2
		2	Yes			
		99	Unknown		Information missing	

ID No	Field	Short Code	Field content	Definition of Field	Field content	Data Format
ICD 2.14	Previous coronary artery bypass graft (CABG)	1	No	Indicate if the patient had a previous CABG		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 2.15	Previous valvular heart surgery	1	No	Indicate if the patient had previous valvular heart surgery		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 2.16	Previous cardiac surgery for congenital disease	1	No	Indicate if the patient had previous cardiac surgery for congenital disease		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 2.17	Previous heart transplant	1	No	Indicate if the patient had a previous cardiac transplant irrespective of aetiology of underlying cardiomyopathy.		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 2.18	Other previous surgical or percutaneous procedures	1	No	Indicate if the patient had any other previous cardiac surgical or percutaneous procedures (including implantation of loop recorder)		Code n2
		2	Yes			
		99	Unknown		Information missing	
Medication: pre procedure This refers to medications taken by the patient before the procedure, including prior to this hospital admission. Medication administered as a single (*stat*) or occasional dose should not be included.						
ICD 3.01	Class I AAD	1	No	Indicate if the patient has in the past or prior to this procedure taken class I anti arrhythmic drug(s)	The patient has never taken class I AAD	Code n2
		2	Current		The patient was taking class I AAD regularly prior to this procedure	
		3	Former		The patient had taken class I AAD previously, but not regularly prior to this procedure	
		99	Unknown		Information missing	
ICD 3.02	Class III AAD (excluding Amiodarone)	1	No	Indicate if the patient has in the past or prior to this procedure taken class III anti arrhythmic drug(s), excluding amiodarone	The patient has never taken class III AAD (excluding amiodarone)	Code n2
		2	Current		The patient was taking class III AAD (excluding amiodarone) regularly prior to this procedure	
		3	Former		The patient had taken class III AAD (excluding amiodarone) previously, but not regularly prior to this procedure	
		99	Unknown		Information missing	

ID No	Field	Short Code	Field content	Definition of Field	Field content	Data Format
ICD 3.03	Amiodarone	1	No	Indicate if the patient has in the past or prior to this procedure taken amiodarone	The patient has never taken amiodarone	Code n2
		2	Current		The patient was taking amiodarone regularly prior to this procedure	
		3	Former		The patient had taken amiodarone previously, but not regularly prior to this procedure	
		99	Unknown		Information missing	
ICD 3.04	Beta-blockers	1	No	Indicate if the patient has in the past or prior to this procedure taken beta-blocker(s)	The patient has never taken beta-blocker(s)	Code n2
		2	Current		The patient was taking beta-blocker(s) regularly prior to this procedure	
		3	Former		The patient had taken beta-blocker(s) previously, but not regularly prior to this procedure	
		99	Unknown		Information missing	
ICD 3.05	Calcium antagonists	1	No	Indicate if the patient has in the past or prior to this procedure taken non-dihydropyridine calcium antagonist(s).	The patient has never taken non-dihydropyridine calcium antagonist(s)	Code n2
		2	Current		The patient was taking non-dihydropyridine calcium antagonist(s) regularly prior to this procedure	
		3	Former		The patient had taken non-dihydropyridine calcium antagonist(s) previously, but not regularly prior to this procedure	
		99	Unknown		Information missing	
ICD 3.06	Digoxin	1	No	Indicate if the patient has in the past or prior to this procedure taken digoxin	The patient has never taken digoxin	Code n2
		2	Current		The patient was taking digoxin regularly prior to this procedure	
		3	Former		The patient had taken digoxin previously, but not regularly prior to this procedure	
		99	Unknown		Information missing	
ICD 3.07	Diuretics	1	No	Indicate if the patient has in the past or prior to this procedure been taking diuretic(s)	The patient has never taken diuretic(s)	Code n2
		2	Current		The patient was taking diuretic(s) regularly prior to this hospital procedure	
		3	Former		The patient had taken diuretic(s) previously, but not regularly prior to this procedure	
		99	Unknown		Information missing	

ID No	Field	Short Code	Field content	Definition of Field	Field content	Data Format
ICD 3.08	ACE inhibitors/ angiotensin II blockers / aldosterone antagonists	1	No	Indicate if the patient had been taking ACE inhibitor(s) or angiotensin II receptor blocker(s) or aldosterone antagonist(s) prior to this procedure	The patient has never taken ACE Inhibitor(s), angiotensin II receptor blocker(s) or aldosterone antagonists(s)	Code n2
		2	Current		The patient was taking ACE Inhibitor(s), angiotensin II receptor blocker(s) or aldosterone antagonists(s) regularly prior to this hospital procedure	
		3	Former		The patient had taken ACE Inhibitor(s), angiotensin II receptor blocker(s) or aldosterone antagonists(s) previously, but not regularly prior to this procedure	
		99	Unknown		Information missing	
ICD 3.09	Antiplatelet - aspirin	1	No	Indicate if the patient has been taking acetylsalicylic acid (ASA / aspirin) regularly prior to this procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 3.08	Antiplatelet -clopidogrel/ ticlopidine	1	No	Indicate if the patient has been taking ticlopidine or clopidogrel regularly prior to this procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 3.10	Antiplatelet - other	1	No	Indicate if the patient has been taking any other antiplatelet agent regularly prior to this procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 3.11	Heparin / LMWH	1	No	Indicate if the patient had been taking heparin or low molecular weight heparin (either intravenous or subcutaneous) agent(s) prior to this procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 3.12	Direct thrombin inhibitors	1	No	Indicate if the patient had been taken direct antithrombin agent(s) regularly prior to this procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 3.13	Coumarin anticoagulants	1	No	Indicate (specifically) if the patient had been taking anticoagulant medication regularly prior to this procedure	The patient was not taking warfarin or any other coumarin derivative regularly prior to this procedure	Code n2
		2	Warfarin		The patient was taking warfarin regularly prior to this procedure	
		3	Other coumarin derivatives		The patient was taking any other coumarin derivative (not warfarin) regularly prior to this procedure	
		99	Unknown		Information missing	

ID No	Field	Short Code	Field content	Definition of Field	Field content	Data Format
Underlying Disease and Clinical Presentation						
ICD 4.01	Predominant presenting symptom	1	Asymptomatic	Indicate the **predominant** symptom / reason why the patient presented for medical attention (see definitions)		Code n2
		2	Fatigue			
		3	Palpitations			
		4	Dyspnoea			
		5	Chest pain			
		6	Near / pre-syncope			
		7	Syncope			
		8	Chronic heart failure			
		9	Systemic embolic event			
		10	Cardiac arrest / aborted sudden death			
		88	Other symptoms			
		99	Unknown		Information missing	
ICD 4.02	Functional class	1	NYHA I	Record the New York Heart Association (NYHA) functional status of the patient	No limitation of physical activity. Ordinary physical activity does not cause undue fatigue, dyspnoea or palpitations.	Code n2
		2	NYHA II		Slight limitation of physical activity. Comfortable at rest, but ordinary physical activity results in fatigue, palpitations or dyspnoea.	
		3	NYHA III		Marked limitation of physical activity. Comfortable at rest, but less than ordinary activity results in symptoms.	
		4	NYHA IV		Unable to carry on any physical activity without discomfort. Symptoms are present even at rest with increased discomfort with any physicial activity.	
		99	Unknown		Information missing	

ID No	Field	Short Code	Field content	Definition of Field	Field content	Data Format
ICD 4.03	Left ventricular (LV) function	1	Normal (>50%)	Indicate the patients estimated or calculated ejection fraction. This categorises the percentage of the blood emptied from the left ventricle at the end of the contraction. Data may have been derived from angiography, echocardiography, nuclear imaging, magnetic resonance imaging etc.		Code n2
		2	Slightly reduced (41-50%)			
		3	Moderately reduced (31-40%)			
		4	Severely reduced (<30%)			
		5	LV function not assessed			
		99	Unknown		Information missing	
Relevant cardiac diagnoses						
ICD 5.01	Apparently normal heart	1	No	Indicate if the patient has an apparently normal heart		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 5.02	Ischaemic heart disease	1	No	Indicate if the patient has underlying ischaemic heart disease	The patient has no history of ischaemic heart disease (angina	Code n2
		2	Yes, without Q wave MI		The patient has a history of ischaemic heart disease, without evidence or history of Q wave myocardial infarction	
		3	Yes, with Q wave MI		The patient has a history of ischaemic heart disease, with evidence or history of Q wave myocardial infarction	
		99	Unknown		Information missing	
ICD 5.03	Cardiomyopathy -hypertrophic	1	No	Indicate if the patient has hypertrophic cardiomyopathy (see definitions)		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 5.04	Cardiomyopathy - dilated	1	No	Indicate if the patient has dilated cardiomyopathy (see definitions)		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 5.05	Cardiomyopathy - (arrhythmogenic) right ventricular	1	No	Indicate if the patient has right ventricular cardiomyopathy (see definitions)		Code n2
		2	Yes			
		99	Unknown		Information missing	

ID No	Field	Short Code	Field content	Definition of Field	Field content	Data Format
ICD 5.06	Cardiomyopathy - other	1	No	Indicate if the patient has any other cardiomyopathy. This includes cardiomyopathy secondary to subacute / acute myocarditis, restrictive cardiomyopathy or unclassified cardiomyopathy. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 5.07	Congenital heart disease	1	No	Indicate if the patient has congenital heart disease (see definitions)		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 5.08	Valvular heart disease	1	No	Indicate if the patient has valvular heart disease		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 5.09	Primary electrical disease - idiopathic ventricular fibrillation (normal heart)	1	No	Indicate if the patient has had idiopathic ventricular fibrillation (see definitions)		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 5.10	Primary electrical disease - congenital long QT	1	No	Indicate if the patient has a congenital long QT syndrome (see definitions)		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 5.11	Primary electrical disease - Brugada syndrome	1	No	Indicate if the patient has Brugada syndrome (see definitions)		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 5.12	Primary electrical disease -other	1	No	Indicate if the patient has any other primary electrical disease. This would also include a diagnosis of WPW [see definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 5.13	Neurally mediated syncope	1	No	Indicate if the patient has neurally mediated syncope (see definitions)		Code n2
		2	Yes			
		99	Unknown		Information missing	

ID No	Field	Short Code	Field content	Definition of Field	Field content	Data Format
Arrhythmia indication						
ICD 6.01	Arrhythmia indication for ICD implant	1	Ventricular Fibrillation	Indicate (specifically) the indication arrhythmia. The most significant indication to be chosen (one choice only) (see definitions)		Code n2
		2	VT – monomorphic Sustained			
		3	VT - monomorphic Non-sustained			
		4	VT - polymorphic (with normal QT interval)			
		5	VT - Polymorhic with long QT interval (Torsades des pointes)			
		6	Wide complex tachycardia unspecified			
		7	Syncope with inducible VT or VF			
		8	Prophylactic (none documented / induced)			
		99	Unknown		Information missing	
ICD 6.02	AV conduction status	1	Normal AV conduction	Indicate (specifically) the highest degree of AV block [one choice only]	Normal AV conduction There is no degree of heart block	Code n2
		2	First degree		First degree During first-degree AV block, every atrial impulse conducts to the ventricles and a regular ventricular rate is produced, but the PR interval exceeds 0.20 second in adults less than 75 years or exceeds 0.24 second in persons 75 years or older.	
		3	Second degree tpe I (Wenckebach)		Second degree type I (Wenckebach) block is characterised by progressive prolongation of the PR interval until an atrial impulse is not conducted to the ventricles.	
		4	Second degree tpe II (Mobitz)		Second degree type II (Mobitz) denotes occasional or repetitive sudden block of conduction of an impulse without prior significant lengthening of conduction time (<80 ms).	
		5	2:1 AV block		2:1 AV block is when AV conduction occurs in a 2:1 pattern, every other P wave not being conducted to the ventricles. Block cannot be unequivocally classified as type I or type II.	

ID No	Field	Short Code	Field content	Definition of Field	Field content	Data Format
		6	Third degree		Third degree AV block is defined as absence of AV conduction	
		7	Impaired AV conduction status unknown		Impaired AV conduction but the nature of this cannot be discerned on the basis on the ECG. For example atrial fibrillation with slow ventricular response and not complete heart block	
		99	Unknown		Information missing	
ICD 6.03	QRS duration			Indicate the duration of the QRS complex in mSec		n3
Procedure						
ICD 7.01	Date of procedure			Indicate the procedure date		Date
ICD 7.02	Sedation / anaesthesia	1	No	Indicate if the patient received intravenous sedation or received an anaesthetic (other than local) during this procedure		Code n2
		2	Sedation IV			
		3	General anaesthetic			
		99	Unknown		Information missing	
ICD 7.03	Antibiotics IV - perioperative	1	No	Indicate if the patient received intravenous antibiotics for the procedure (either prior to or during the procedure)		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 7.04	Antibiotics topical	1	No	Indicate if the patient received topical antibiotics (including antibiotic solution irrigation of the pocket) during the procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 7.05	Antibiotics postoperative	1	No	Indicate if the patient received intravenous antibiotics post the procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	

ID No	Field	Short Code	Field content	Definition of Field	Field content	Data Format
ICD 7.06	Generator pacing mode	1	None	Indicate (specifically) the programmed pacing mode	No pacing mode programmed	Code n2
		2	Single chamber (VVI / VVIR)		Single chamber (VVI / VVIR) Ventricular pacing / sensing +/- rate responsiveness	
		3	Dual chamber (DDD / DDDR)		Dual chamber (DDD / DDDR) Atrial & Ventricular pacing & sensing +/- rate responsiveness	
		4	Biventricular (resynchronisation)		Biventricular (resynchronisation) Cardiac resynchronisation / Biventricular pacing	
		88	Other		Other	
		99	Unknown		Information missing	
ICD 7.07	Generator therapy mode	1	None	Indicate (specifically) the therapy mode of the generator	None	Code n2
		2	Atrial therapy		Atrial therapy only	
		3	Ventricular therapy		Ventricular therapy only	
		4	Ventricular and atrial therapy		Ventricular and atrial therapy	
		99	Unknown		Information missing	
ICD 7.08	Generator manufacturer			Indicate (specifically) the generator manufacturer		an100
ICD 7.09	Generator model			Indicate the generator model		an50
ICD 7.10	Generator serial number			Indicate the generator serial number		an50
ICD 7.11	Generator site of implantation	1	None	Indicate (specifically) the generator site of implantation		Code n2
		2	Pectoral - Subcutaneous / subfascial			
		3	Pectoral - Submuscular			
		4	Abdominal - Subcutaneous / subfascial			
		5	Abdominal - Submuscular			
		6	Axillary			
		88	Other			
		99	Unknown		Information missing	
ICD 7.12	**Right ventricular defibrillation lead implant**	1	No	**Only one choice** (if No / Unknown go to ICD 7.19)		Code n2
		2	Yes			
		99	Unknown			

ID No	Field	Short Code	Field content	Definition of Field	Field content	Data Format
ICD 7.13	Right ventricular defibrillation lead manufacturer			Indicate (specifically) the right ventricular defibrillation lead manufacturer		an100
ICD 7.14	Right ventricular defibrillation lead model			Indicate the right ventricular defibrillation lead model		an50
ICD 7.15	Right ventricular defibrillation lead serial number			Indicate the right ventricular defibrillation lead serial number		an50
ICD 7.16	Right ventricular defibrillation lead coil	1	Single coil	Indicate (specifically) the right ventricular defibrillation lead type		Code n2
		2	Double coil			
		3	Other			
		99	Unknown		Information missing	
ICD 7.17	Right ventricular defibrillation lead access	1	Cephalic vein	Indicate (specifically) the right ventricular defibrillation lead implant approach		Code n2
		2	Subclavian vein			
		3	External jugular vein			
		4	Internal jugular vein			
		5	Femoral vein			
		6	Transvenous, other			
		7	Thoracotomy			
		8	Thoracoscopy			
		9	Subcutaneous			
		88	Other			
		99	Unknown		Information missing	
ICD 7.18	Right ventricular defibrillation lead placement	1	RV Apex	Indicate (specifically) the right ventricular defibrillation lead position. Epicardial placement includes placement via the coronary sinus.		Code n2
		2	Epicardial			
		88	Other			
		99	Unknown		Information missing	
ICD 7.19	**Supplementary defibrillation lead implant**	1	No	**Only one choice** (if No / Unknown go to ICD 7.25)		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 7.20	Supplementary defibrillation lead manufacturer			Indicate (specifically) the supplementary defibrillation lead manufacturer		an100
ICD 7.21	Supplementary defibrillation lead model			Indicate the supplementary defibrillation lead model		an50
ICD 7.22	Supplementary defibrillation lead serial number			Indicate the supplementary defibrillation lead serial number		an50

ID No	Field	Short Code	Field content	Definition of Field	Field content	Data Format
ICD 7.23	Supplementary defibrillation lead access	1	Cephalic vein	Indicate (specifically) the supplementary defibrillation lead implant approach		Code n2
		2	Subclavian vein			
		3	External jugular vein			
		4	Internal jugular vein			
		5	Femoral vein			
		6	Transvenous, other			
		7	Thoracotomy			
		8	Thoracoscopy			
		9	Subcutaneous			
		88	Other			
		99	Unknown		Information missing	
ICD 7.24	Supplementary defibrillation lead placement	1	Right atrium / superior vena cava	Indicate (specifically) the supplementary defibrillation lead position. Epicardial placement includes placement via the coronary sinus.		Code n2
		2	Subcutaneous			
		3	Epicardial			
		88	Other			
		99	Unknown		Information missing	
ICD 7.25	**Atrial lead implant**	1	No	**Only one choice** (if No / Unknown go to ICD 7.31)		Code n2
		2	Yes			
		99	Unknown			
ICD 7.26	Atrial lead manufacturer			Indicate (specifically) the atrial lead manufacturer		an100
ICD 7.27	Atrial lead model			Indicate the atrial lead model		an50
ICD 7.28	Atrial lead serial number			Indicate the atrial lead implant serial number		an50

ID No	Field	Short Code	Field content	Definition of Field	Field content	Data Format
ICD 7.29	Atrial lead access	1	Cephalic vein	Indicate (specifically) the atrial lead implant approach		Code n2
		2	Subclavian vein			
		3	External jugular vein			
		4	Internal jugular vein			
		5	Femoral vein			
		6	Transvenous, other			
		7	Thoracotomy			
		8	Thoracoscopy			
		9	Subcutaneous			
		88	Other			
		99	Unknown		Information missing	
ICD 7.30	Atrial lead placement	1	RA Appendage	Indicate (specifically) the atrial lead position. Epicardial placement includes placement via the coronary sinus.		Code n2
		2	Epicardial			
		88	Other			
		99	Unknown		Information missing	
ICD 7.31	**Left ventricular lead implant**	1	No	**Only one choice** (if No / Unknown go to ICD 8.01)		Code n2
		2	Yes			
		99	Unknown			
ICD 7.32	Left ventricular lead manufacturer			Indicate (specifically) the left ventricular lead manufacturer		an100
ICD 7.33	Left ventricular lead model			Indicate the left ventricular lead model		an50
ICD 7.34	Left ventricular lead serial number			Indicate the left ventricular lead serial number		an50

ID No	Field	Short Code	Field content	Definition of Field	Field content	Data Format
ICD 7.35	Left ventricular lead access	1	Cephalic vein	Indicate (specifically) the left ventricular lead implant approach		Code n2
		2	Subclavian vein			
		3	External jugular vein			
		4	Internal jugular vein			
		5	Femoral vein			
		6	Transvenous, other			
		7	Thoracotomy			
		8	Thoracoscopy			
		9	Subcutaneous			
		88	Other			
		99	Unknown		Information missing	
ICD 7.36	Left ventricular lead placement	1	Coronary vein	Indicate (specifically) the left ventricular lead position.		Code n2
		2	Intrapericardial			
		3	Endocardial			
		88	Other			
		99	Unknown		Information missing	
Reposition / Repair/ Replacement / Explant Procedure						
ICD 8.01	Is this a reposition / repair / replacement / explant procedure	1	No	Indicate if this is a reposition / repair / replacement / explant procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 8.02	Date of implant of device requiring reposition, repair, replacement or explant			Indicate the date of implant for which this procedure is a reposition / repair / replacement / explant procedure		Date
ICD 8.03	ICD Generator reposition / repair/ replacement / explant procedure	1	Not applicable	Indicate (specifically) what action was done to the ICD generator		Code n2
		2	Generator reposition			
		3	Generator repair			
		4	Generator replacement			
		5	Generator explant			
		6	System explant			
		7	Wound revision			
		88	Other			
		99	Unknown		Information missing	

ID No	Field	Short Code	Field content	Definition of Field	Field content	Data Format
ICD 8.04	Reason for reposition / repair/ replacement / explant of ICD generator	1	Not applicable	Indicate (specifically) why the ICD generator was repositioned / repaired / replaced / explanted		Code n2
		2	Normal EOL			
		3	Premature EOL			
		4	Upgrade to dual chamber			
		5	Upgrade to biventricular / CRT			
		6	Upgrade to atrial therapy			
		7	Sensing / pacing failure			
		8	Failure to defibrillate			
		9	Software (algorithm) failure			
		10	Connector failure			
		11	Recall			
		12	Skin erosion / infection			
		13	Systemic infection / endocarditis			
		14	Elective (patient request)			
		88	Other			
		99	Data unknown		Information missing	
ICD 8.05	Right Ventricular defibrillator lead reposition / repair/ replacement / explant	1	Not applicable	Indicate (specifically) what action was done to the ventricular defibrillator lead		Code n2
		2	Lead reposition			
		3	Lead repair			
		4	Lead replacement			
		5	Lead explant			
		6	System explant			
		88	Other			
		99	Unknown		Information missing	

ID No	Field	Short Code	Field content	Definition of Field	Field content	Data Format
ICD 8.06	Reason for reposition / repair/ replacement / explant of right ventricular defibrillator lead	1	Not applicable	Indicate (specifically) why the right ventricular defibrillation lead was repositioned / repaired / replaced / explanted		Code n2
		2	Displacement			
		3	High defibrillation threshold			
		4	High pacing threshold			
		5	Undersensing			
		6	Myopotential inhibition			
		7	Extracardiac stimulation			
		8	Connector failure			
		9	Insulation failure			
		10	Conductor break			
		11	Recall			
		12	Cardiac perforation			
		13	Skin erosion / infection			
		14	Systemic infection / endocarditis			
		15	Elective (patient request)			
		88	Other			
		99	Unknown		Information missing	
ICD 8.07	Supplementary defibrillation lead reposition / repair/ replacement / explant	1	Not applicable	Indicate (specifically) what action was done to the supplementary defibrillator lead		Code n2
		2	Lead reposition			
		3	Lead repair			
		4	Lead replacement			
		5	Lead explant			
		6	System explant			
		88	Other			
		99	Unknown		Information missing	

ID No	Field	Short Code	Field content	Definition of Field	Field content	Data Format
ICD 8.08	Reason for reposition / repair/ replacement / explant of supplementary defibrillation lead	1	Not applicable	Indicate (specifically) why the supplementary defibrillation lead was repositioned / repaired / replaced / explanted		Code n2
		2	Displacement			
		3	High defibrillation threshold			
		4	High pacing threshold			
		5	Undersensing			
		6	Myopotential inhibition			
		7	Extracardiac stimulation			
		8	Connector failure			
		9	Insulation failure			
		10	Conductor break			
		11	Recall			
		12	Cardiac perforation			
		13	Skin erosion / infection			
		14	Systemic infection / endocarditis			
		15	Elective (patient request)			
		88	Other			
		99	Unknown		Information missing	
ICD 8.09	Atrial lead reposition / repair/ replacement / explant	1	Not applicable	Indicate (specifically) what action was done to the atrial lead		Code n2
		2	Atrial lead reposition			
		3	Atrial lead repair			
		4	Atrial lead replacement			
		5	Atrial lead explant			
		6	System explant			
		88	Other			
		99	Unknown		Information missing	

ID No	Field	Short Code	Field content	Definition of Field	Field content	Data Format
ICD 8.10	Reason for reposition / repair/ replacement / explant of atrial lead	1	Not applicable	Indicate (specifically) why the atrial lead was repositioned / repaired / replaced / explanted		Code n2
		2	Displacement			
		3	High pacing threshold			
		4	Undersensing			
		5	Myopotential inhibition			
		6	Extracardiac stimulation			
		7	Connector failure			
		8	Insulation failure			
		9	Conductor break			
		10	Recall			
		11	Cardiac perforation			
		12	Skin erosion / Infection			
		13	Systemic infection / Endocarditis			
		14	Elective (patient request)			
		88	Other			
		99	Unknown		Information missing	
ICD 8.11	Left ventricle lead reposition / repair/ replacement / explant	1	Not applicable	Indicate (specifically) what action was done to the left ventricular lead		Code n2
		2	Lead reposition			
		3	Lead repair			
		4	Lead replacement			
		5	Lead explant			
		6	System explant			
		88	Other			
		99	Unknown		Information missing	

ID No	Field	Short Code	Field content	Definition of Field	Field content	Data Format
ICD 8.12	Reason for reposition / repair/ replacement / explant of left ventricle lead	1	Not applicable	Indicate (specifically) why the left ventricular lead was repositioned / repaired / replaced / explanted		Code n2
		2	Displacement			
		3	High pacing threshold			
		4	Undersensing			
		5	Myopotential inhibition			
		6	Extracardiac stimulation			
		7	Connector failure			
		8	Insulation failure			
		9	Conductor break			
		10	Recall			
		11	Cardiac perforation			
		12	Skin erosion / infection			
		13	Systemic infection / endocarditis			
		14	Elective (patient request)			
		88	Other			
		99	Unknown		Information missing	
ICD 8.13	Number of inactive leads abandoned in place	0	None	Indicate (specifically) the number of inactive leads abandoned in place		Code n2
		1	1			
		2	2			
		3	3			
		4	>3			
		99	Unknown		Information missing	
ICD 8.14	Number of lead adaptors	0	0	Indicate (specifically) the number of lead adapters used		Code n2
		1	1			
		2	2			
		3	3			
		4	>3			
		99	Unknown		Information missing	
Procedure / Programming						
ICD 9.01	Ventricular fibrillation induced	1	No	Indicate if ventricular fibrillation was induced		Code n2
		2	Yes			
		3	Not attempted			
		99	Unknown		Information missing	

ID No	Field	Short Code	Field content	Definition of Field	Field content	Data Format
ICD 9.02	Lowest successful shock			Indicate the lowest successful shock energy [J]		n3
ICD 9.03	Lowest shock tested			Indicate the lowest shock energy tested [J]		n3
ICD 9.04	Other arrhythmias tested	1	No	Indicate (specifically) if other arrhythmias were tested		Code n2
		2	Yes, atrial			
		3	Yes, ventricular			
		4	Yes, atrial and ventricular			
		99	Unknown		Information missing	
Discharge						
ICD 10.01	Survival status at discharge	1	Alive	Indicate survival status at discharge		Code n2
		2	Dead			
		99	Unknown		Information missing	
ICD 10.02	Date of discharge / death			Indicate the date the patient was discharged from hospital or if the patient died record the date of death.		Date
Medication at discharge						
ICD 11.01	Class I AAD	1	No	Indicate if the patient, at the time of discharge, is taking Class I anti-arrhythmic drug(s)		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 11.02	Class III AAD (excluding amiodarone)	1	No	Indicate if the patient, at the time of discharge, is taking Class III anti-arrhythmic drug(s) (excluding amiodarone)		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 11.03	Amiodarone	1	No	Indicate if the patient, at the time of discharge, is taking amiodarone		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 11.04	Beta-blockers	1	No	Indicate if the patient, at the time of discharge, is taking beta blocker(s)		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 11.05	Calcium antagonists	1	No	Indicate if the patient, at the time of discharge, is taking non-dihydropyridine calcium antagonist(s).		Code n2
		2	Yes			
		99	Unknown		Information missing	

ID No	Field	Short Code	Field content	Definition of Field	Field content	Data Format
ICD 11.06	Digoxin	1	No	Indicate if the patient, at the time of discharge, is taking digoxin		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 11.07	Diuretics	1	No	Indicate if the patient, at the time of discharge, is taking diuretic(s)		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 11.08	ACE inhibitors/ angiotensin II blockers / aldosterone antagonists	1	No	Indicate if the patient, at the time of discharge, is taking ACE inhibitor(s) or angiotensin receptor blocker(s) or aldosterone antagonist(s)		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 11.09	Antiplatelet - aspirin	1	No	Indicate if the patient, at the time of discharge is taking acetylsalicylic acid (ASA/Aspirin)		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 11.10	Antiplatelet -clopidogrel/ ticlopidine	1	No	Indicate if the patient, at the time of discharge, is taking ticlopidine or clopidogrel		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 11.11	Antiplatelet - other	1	No	Indicate if the patient, at the time of discharge, is taking any other antiplatelet medication		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 11.12	Coumarin anticoagulants	1	No	Indicate (specifically) if the patient, at the time of discharge is taking anticoagulant medication		Code n2
		2	Warfarin			
		3	Other coumarin derivatives			
		99	Unknown		Information missing	
ICD 11.13	Heparin / LMWH	1	No	Indicate if the patient, at the time of discharge, is taking heparin or low molecular weight heparin (either intravenous or subcutaneous)		Code n2
		2	Yes			
		99	Unknown		Information missing	

ID No	Field	Short Code	Field content	Definition of Field	Field content	Data Format
ICD 11.14	Direct thrombin inhibitors	1	No	Indicate if the patient, at the time of discharge, is taking direct antithrombin agent(s)		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 11.15	Antibiotics	1	No	Indicate (specifically) if the patient, at the time of discharge, is taking antibiotic(s)		Code n2
		2	Oral			
		3	Topical			
		4	Intravenous			
		99	Unknown		Information missing	
Post-procedure complications (from date of procedure to date of first follow-up)						
ICD 12.01	Central venous complications	1	No	Indicate if the patient experienced an intrathoracic vein thrombosis or laceration		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 12.02	Deep venous thrombosis	1	No	Indicate if the patient experienced a deep vein thrombosis of the lower limb(s) post procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 12.03	Pulmonary embolism	1	No	Indicate if the patient experienced a pulmonary embolism post procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 12.04	Pneumothorax	1	No	Indicate if the patient experienced a pneumothorax post procedure		Code n2
		2	Yes, not requiring drainage			
		3	Yes, requiring drainage			
		99	Unknown		Information missing	
ICD 12.05	Haemothorax	1	No	Indicate if the patient experienced a haemothorax post procedure		Code n2
		2	Yes, not requiring drainage			
		3	Yes, requiring drainage			
		99	Unknown		Information missing	

ID No	Field	Short Code	Field content	Definition of Field	Field content	Data Format
ICD 12.06	Pericardial effusion / tamponade	1	No	Indicate if the patient experienced a pericardial effusion / tamponade post procedure		Code n2
		2	Yes, not requiring pericardiocentesis			
		3	Yes, requiring pericardiocentesis			
		4	Yes, requiring thoracotomy			
		99	Unknown		Information missing	
ICD 12.07	Arrhythmic storm	1	No	Indicate if the patient suffered multiple shocks for repetitive / incessant VT or VF after implant		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 12.08	Stroke or RIND or TIA	1	No	Indicate if the patient experienced a stroke or TIA post procedure (see definitions)		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 12.09	Myocardial infarction	1	No	Indicate if the patient experienced a myocardial infarction post procedure (see definitions)		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 12.10	Wound complications	1	None	Indicate (specifically) if the patient had any wound complications		Code n2
		2	Pocket haematoma			
		3	Wound infection			
		4	Wound breakdown / erosion			
		88	Other			
		99	Unknown		Information missing	
ICD 12.11	Need to remove whole system	1	No	Indicate if the whole system was removed		Code n2
		2	Yes			
		99	Unknown		Information missing	
ICD 12.12	Other complication	1	No	Indicate if patient experienced any other complication. If yes, please specify.		Code n2
		2	Yes			
		99	Unknown		Information missing	

ID No	Field	Short Code	Field content	Definition of Field	Field content	Data Format
Follow Up						
ICD 13.01	Date of follow up / death			Indicate the date that follow up was performed		Date
ICD 13.02	Survival status at follow up	1	Alive	Indicate survival status at follow up		Code n2
		2	Dead			
		99	Unknown		Information missing	

ICD Definitions

ICD Data Standards (definitions)

ID No	Field	Definitions
ICD 2.01	History of cerebrovascular embolic disease	**History of cerebrovascular embolic event as defined by one or more of :** a) Cerebrovascular Accident (CVA): patient has a history of stroke i.e. loss of neurological function caused by an ischaemic event with residual symptoms at least 72 hours after onset. b) Reversible ischaemic neurological deficit (RIND): patient has a history of loss of neurological function caused by ischaemia with symptoms at least 24 hours after onset but complete return of function within 72 hours. c) Transient Ischaemic Attack (TIA): Patient has a history of loss of neurological function caused by ischaemia that was abrupt in onset but with complete return of function within 24 hours **[ACC]**
ICD 4.01	Predominant presenting symptom	**Asymptomatic** means having no symptoms of illness or disease
		Fatigue (loss of energy, lassitude, listlessness, languor) refers to a weariness and loss of that sense of well-being typically found in patients healthy of body and mind
		Palpitations may be defined as an awareness of the beating of the heart, either fast or slow, an awareness most commonly brought about by a change in the heart's rhythm or an augmentation of its contractility. **[Harrison's Principles of Internal Medicine (altered)]**
		Dyspnoea is defined as abnormal or uncomfortable breathing in the context of what is normal for a person according to his or her level of fitness and exertional threshold for breathlessness. **[Silvestri GA, Mahler DA. Evaluation of dyspnoea in the elderly patient. Clin Chest Med 1993;14:393-404]**
		Chest pain may be defined as a sensation of chest discomfort, heaviness or pressure.
		Near / pre-syncope is a descriptive term for all sensations directly preceding syncope whether or not they are followed by complete loss of consciousness. **[ESC Guidelines on management (diagnosis and treatment) of syncope (2001) (altered)]**
		Syncope is a symptom, defined as a transient, self-limited loss of consciousness, usually leading to falling. The onset of syncope is relatively rapid, and the subsequent recovery is spontaneous, complete, and usually prompt. The underlying mechanism is a transient global cerebral hypoperfusion. **[ESC Guidelines on management (diagnosis and treatment) of syncope (2001)]**

ID No	Field	Definitions
		Chronic heart failure. Criteria 1 and 2 should be fulfilled in all cases 1. Symptoms of heart failure (at rest or during exercise) and 2. Objective evidence of cardiac dysfunction (at rest) and (in cases where the diagnosis is in doubt) 3. Response to treatment directed towards heart failure One commonly used definition is: heart failure is a pathophysiological state in which an abnormality of cardiac function is responsible for the failure of the heart to pump blood at a rate commensurate with the requirements of the metabolising tissues. **[Task Force for the Diagnosis and Treatment of Chronic Heart Failure, European Society of Cardiology]**
		Cardiac arrest / aborted sudden death. Sudden cardiac death - 'Natural death due to cardiac causes, heralded by abrupt loss of consciousness within one hour of the onset of acute symptoms; preexisting heart disease may have been known to be present, but the time and mode of death are unexpected. **[Task Force on Sudden Cardiac Death of the European Society of Cardiology (2001)]**
		Any other symptom causing the patient to seek medical attention, not listed above.
		Unknown
ICD 5.02	Ischaemic heart disease	**Q-wave MI**: Development of any Q wave in leads V1 through V3, or the development of a Q wave greater than or equal to 30 ms (0.03 s) in leads I, II, aVL, aVF, V4, V5, or V6. (Q-wave changes must be present in any 2 contiguous leads and be greater than or equal to 1 mm in depth.) **[European Society of Cardiology / American College of Cardiology Definition of Myocardial Infarction** **Reference: Myocardial infarction redefined- a consensus document of the Joint European Society of Cardiology /** **American College of Cardiology Committee for the redefinition of myocardial infarction. Euro Heart Journal. 2000;** **21:1502-1513.]**
ICD 5.03	Cardiomyopathy - hypertrophic	**Hypertrophic cardiomyopathy (HCM)** is an inherited heart muscle disorder caused by mutations in genes encoding cardiac sarcomeric proteins. HCM has a highly characteristic pathology (myocardial hypertrophy, myocyte disarray and fibrosis) which contributes to a broad spectrum of functional abnormalities that includes myocardial ischaemia, diastolic dysfunction and left ventricular outflow obstruction, resulting in congestive heart failure, clinically important arrhythmias (such as atrial fibrillation) and SCD in some patients. **[Task Force on Sudden Cardiac Death of the European Society of Cardiology (2001)]**
ICD 5.04	Cardiomyopathy - dilated	**Idiopathic dilated cardiomyopathy (DCM)** is a chronic heart muscle disease characterised by left ventricular dilatation and impairment of systolic function. **[Task Force on Sudden Cardiac Death of the European Society of Cardiology (2001)]**
ICD 5.05	Cardiomyopathy - (arrhythmogenic) right ventricular	**Right ventricular cardiomyopathy (RVC),** originally termed arrhythmogenic right ventricular dysplasia, is a disease of the myocardium, characterised by regional or global fibro-fatty replacement of the right ventricular myocardium, with or without left ventricular involvement and with relative sparing of the septum. **[Task Force on Sudden Cardiac Death of the European Society of Cardiology (2001)]**

ID No	Field	Definitions
A 5.06	Cardiomyopathy - other	According to the definition of the World Health Organization '**myocarditis** is an inflammatory heart muscle disease associated with cardiac dysfunction'. Myocarditis may occur as the consequence of a systemic infective disease or may be the consequence of a silent infection. Clinical diagnoses of myocarditis may be difficult as the clinical manifestations are frequently non-specific ranging from chest pain to arrhythmias and from heart failure to SCD. **[Task Force on Sudden Cardiac Death of the European Society of Cardiology (2001)]** **Restrictive cardiomyopathy i**s characterised by restrictive filling and reduced diastolic volume of either or both ventricles with normal or near-normal systolic function and wall thickness. Increased interstitial fibrosis may be present. It may be idiopathic or associated with other disease (eg, amyloidosis; endomyocardial disease with or without hypereosinophilia). **[Report of the 1995 World Health Organization/International Society and Federation of Cardiology Task Force on the Definition and Classification of Cardiomyopathies (Circulation. 1996;93:841-842.)]** **Unclassified Cardiomyopathies** include a few cases that do not fit readily into any group (eg, fibroelastosis, noncompacted myocardium, systolic dysfunction with minimal dilatation, mitochondrial involvement). **[Report of the 1995 World Health Organization/International Society and Federation of Cardiology Task Force on the Definition and Classification of Cardiomyopathies (Circulation. 1996;93:841-842.)]**
ICD 5.07	Congenital heart disease	**Congenital heart disease** is defined as an abnormality in cardiac structure or function that is present at birth, even if it is discovered much later. **[Heart Disease 6th Ed. Braunwald Zipes Libby (altered)]**
ICD 5.09	Primary electrical disease - idiopathic ventricular fibrillation (normal heart)	**Ventricular fibrillation** in the absence of structural heart disease, well characterised cardiac electrophysiologic abnormalities, cardiotoxicity, electrolyte abnormalities, known heritable arrhythmogenic conditions and other transient conditions. **[Task Force on Sudden Cardiac Death of the European Society of Cardiology European Heart Journal (2001) 22, 1374–1450 (altered)]**
ICD 5.10	Primary electrical disease - congenital long QT	The **long QT syndrome (LQTS)** is a familial disease characterised by an abnormally prolonged QT interval and, usually, by stress-mediated life threatening ventricular arrhythmias. This is a primary electrical disorder, usually without evidence of structural heart disease or LV dysfunction. **[Task Force on Sudden Cardiac Death of the European Society of Cardiology (2001) (altered)]**
ICD 5.11	Primary electrical disease - Brugada syndrome	**Brugada syndrome -** Individuals with syncope, resuscitated cardiac arrest, and/or family history of unexplained sudden cardiac death who have variants of right bundle branch block QRS morphology and ST-segment elevation in leads V1 and V3 **[Task Force on Sudden Cardiac Death of the European Society of Cardiology (2001) (altered)]**

ID No	Field	Definitions
ICD 5.12	Primary electrical disease - other	Three basic features typify the ECG abnormalities of patients with the usual form of WPW conduction caused by an anomalous AV connection: (1) PR interval less than 120 milliseconds during sinus rhythm; (2) QRS complex duration exceeding 120 milliseconds with a slurred, slowly rising onset of the QRS in some leads (delta wave) and usually a normal terminal QRS portion; and (3) secondary ST-T wave changes that are generally directed in an opposite direction to the major delta and QRS vectors. **[Heart Disease 6th Ed. Braunwald Zipes Libby (altered)]** ***Primary electrical disease would also include a diagnosis of WPW
ICD 5.13	Neurally mediated syncope	**'Neurally-mediated reflex syncopal syndrome'** refers to a reflex that, when triggered, gives rise to vasodilatation and bradycardia, although the contribution of both to systemic hypotension and cerebral hypoperfusion may differ considerably. **[Task Force Report Guidelines on management (diagnosis and treatment) of syncope (European Heart Journal (2001) 22, 1256–1306)]**

ID No	Field	Definitions
ICD 6.01	Arrhythmia indication for ICD implant	1 V**entricular Fibrillation** Ineffective, rapid, disorganised ventricular arrhythmia, resulting in no uniform ventricular contraction and no appreciable cardiac output VT --**Ventricular tachycardia** is defined as tachycardia (three or more consecutive complexes), originating from the ventricle(s), with or without 1:1 relation between atrial and ventricular rates. Generally there is a broad complex (QRS greater than 120mSec in duration) but QRS width can be less if septal origin allows early penetration of the conduction system. **[ACC/AHA/ESC Guidelines for the Management of Patients with Supraventricular Arrhythmias (2003) (altered)]**
		2 **VT – monomorphic sustained**. Monomorhic implies QRS contours during the VT (which are unchanging (uniform). Sustained VT refers to consecutive ventricular ectopic beats (at a rate > 100 beats/min) that last longer than 30 seconds or cause hemodynamic compromise that requires intervention **[Heart Disease 6th Ed (Braunwald Zipes Libby)]**
		3 VT - monomorphic non-sustained Monomorhic implies QRS contours during the VT which are unchanging (uniform). Nonsustained ventricular tachycardia (VT) is usually defined as three or more consecutive ventricular ectopic beats (at a rate > 100 beats/min) and lasting < 30 seconds. **[Heart Disease 6th Ed (Braunwald Zipes Libby)]**
		4 **VT - polymorphic** (with normal QT interval) Polymorphic implies QRS contours during the VT varying randomly (multiform or pleomorphic)
		5 **VT - Polymorhic with long QT interval (Torsades des pointes)** The term torsades des pointes refers to a VT characterised by QRS complexes of changing amplitude that appear to twist around the isoelectric line and occur at rates of 200 to 250/min.The term is usually used to connote a syndrome, not simply an ECG description of the QRS complex of the tachycardia, characterised by prolonged ventricular repolarization with QT intervals generally exceeding 500 milliseconds. The abnormal repolarisation need not be present or at least prominent on all beats but may be apparent only on the beat prior to the onset of torsades de pointes (i.e., following a premature ventricular contraction). **[Heart Disease 6th Ed (Braunwald Zipes Libby)]**
		6 **Wide complex tachycardia unspecified** Wide-QRS tachycardia can be divided into three groups: SVT with bundle-branch block (BBB) or aberration, SVT with AV conduction over an accessory pathway, and VT. Wide complex implies a QRS duration greater then 120 mSec. Unspecified implies undetermined or uncertain mechanism of the wide complex tachycardia **[ACC/AHA/ESC Guidelines for the management of patients with Supraventricular Arrhythmias (2003)]**
		7 **Syncope** with inducible VT or VF Patients with syncope of undetermined aetiology in whom clinically relevant VT / VF is induced at electrophysiological study. Syncope is a symptom, defined as a transient, self-limited loss of consciousness, usually leading to falling. The onset of syncope is relatively rapid, and the subsequent recovery is spontaneous, complete, and usually prompt. The underlying mechanism is a transient global cerebral hypoperfusion. **[ESC Guidelines on management (diagnosis and treatment) of syncope (2001)]** **and** **[ACC/AHA/NASPE 2002 Guideline Update for Implantation of Cardiac Pacemakers and Antiarrhythmia Devices]**

ID No	Field	Definitions
ICD 13.08	Stroke or RIND or TIA	History of cerebrovascular embolic event as defined by one or more of : a) Cerebrovascular Accident (CVA): patient has a history of stroke i.e. loss of neurological function caused by an ischaemic event with residual symptoms at least 24 hours after onset. b) Reversible ischaemic neurological deficit (RIND): patient has a history of loss of neurological function caused by ischaemia with symptoms at least 24 hours after onset but complete return of function within 72 hours. c) Transient ischaemic Attack (TIA): Patient has a history of loss of neurological function caused by ischaemia that was abrupt in onset but with complete return of function within 24 hours [ACC]
ICD 13.09	Myocardial Infarction	**New myocardial infarction** after the ablation procedure, as characterised by clinical symptoms (chest pain) and/or changes in ECG, biochemical markers, or pathological findings. **[European Society of Cardiology / American College of Cardiology Definition of Myocardial Infarction** **Reference: Myocardial infarction redefined- a consensus document of the Joint European Society of Cardiology / American College of Cardiology Committee for the redefinition of myocardial infarction. Euro Heart Journal. 2000; 21:1502-1513.(altered)]**

Pacemaker Data Standards

Pacemaker Data Standards

Pacemaker Data Standards

ID No	Field	Short Code	Field content	Definition of Field	Field content	Data Format
Demographics						
PM 1.01	Hospital identification number			Indicate the hospital identification number		Id an100
PM 1.02	Patient identification number			Indicate the patient identification number		Id an100
PM 1.03	Date of birth			The date the patient was born as recorded on their birth certificate		Date
PM 1.04	Sex	1	Male	The sex of the patient		Code n2
		2	Female			
		99	Unknown		Information missing	
PM 1.05	Height			Height in cms		n3
PM 1.06	Weight			Weight in kgs		n3.1
Past History Previous history may be documented in the patient's medical notes, GP letter or other referral letters or the patient or the patient's family may have positive information from medical professionals that confirm history.						
PM 2.01	History of cerebrovascular embolic disease	1	No	Indicate if the patient has a history of cerebrovascular embolic disease. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 2.02	Other arterial embolic episodes	1	No	Indicate if the patient has had any other arterial embolic episodes, apart from cerebro-embolic.		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 2.03	Diabetes mellitus	1	Non-diabetic	Indicate if the patient has a history of diabetes mellitus diagnosed prior to the current admission	Patient does not have diabetes	Code n2
		2	Diabetic (dietary control)		The patient has received dietary advice appropriate to their condition but is not receiving medication	
		3	Diabetic (oral medication)		The patient uses oral medication to contol their condition	
		4	Diabetic (insulin)		The patient uses insulin treatment, with or without oral therapy, to control their condition	
		5	Newly diagnosed diabetic		If a patient is admitted with new (not previously diagnosed) diabetes use option "newly diagnosed diabetes" as final treatment modality will not be known	
		99	Unknown		Information missing	

PM 2.04	Hypertension	1	No	Indicate if the patient has a history of hypertension diagnosed and/or treated by a physician		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 2.05	Previous implantable cardioverter defibrillator (ICD) implanted	1	No	Indicate if the patient had a previous ICD implanted		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 2.06	Previous pacemaker implanted	1	No	Indicate if the patient had a previous permanent pacemaker implanted		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 2.07	Previous electrophysiology study (diagnostic)	1	No	Indicate if the patient had a previous EP diagnostic study		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 2.08	Previous catheter ablation for supraventricular tachycardia	1	No	Indicate if the patient had a previous catheter ablation for supraventricular tachycardia		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 2.09	Previous catheter ablation for ventricular tachycardia	1	No	Indicate if the patient had a previous catheter ablation for ventricular tachycardia		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 2.10	Previous percutaneous intervention- coronary	1	No	Indicate if the patient had a previous percutaneous intervention for coronary artery disease		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 2.11	Previous percutaneous intervention- valvular	1	No	Indicate if the patient had a previous percutaneous intervention for valvular heart disease		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 2.12	Previous percutaneous intervention- congenital	1	No	Indicate if the patient had a previous percutaneous intervention for congenital heart disease		Code n2
		2	Yes			
		99	Unknown		Information missing	

PM 2.13	Previous percutaneous intervention - chemical septal ablation	1	No	Indicate if the patient had a previous percutaneous intervention in the form of chemical septal ablation		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 2.14	Previous coronary artery bypass graft (CABG)	1	No	Indicate if the patient had a previous CABG		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 2.15	Previous valvular heart surgery	1	No	Indicate if the patient had previous valvular heart surgery		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 2.16	Previous cardiac surgery for congenital disease	1	No	Indicate if the patient had previous cardiac surgery for congenital disease		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 2.17	Previous heart transplant	1	No	Indicate if the patient had a previous cardiac transplant irrespective of aetiology of underlying cardiomyopathy.		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 2.18	Other previous surgical or percutaneous procedures	1	No	Indicate if the patient had any other previous cardiac surgical or percutaneous procedures (including implantation of loop recorder). If yes, please indicate		Code n2
		2	Yes			
		99	Unknown		Information missing	
Medication: pre procedure This refers to medications taken by the patient before the procedure, including prior to this hospital admission. Medication administered as a single (*stat*) or occasional dose should not be included.						
PM 3.01	Class I AAD	1	No	Indicate if the patient has in the past or prior to this procedure taken class I anti arrhythmic drug(s)	The patient has never taken class I AAD	Code n2
		2	Current		The patient was taking class I AAD regularly prior to this procedure	
		3	Former		The patient had taken class I AAD previously, but not regularly prior to this procedure	
		99	Unknown		Information missing	
PM 3.02	Class III AAD (excluding amiodarone)	1	No	Indicate if the patient has in the past or prior to this procedure taken class III anti arrhythmic drug(s), excluding amiodarone	The patient has never taken class III AAD (excluding amiodarone)	Code n2
		2	Current		The patient was taking class III AAD (excluding amiodarone) regularly prior to this procedure	
		3	Former		The patient had taken class III AAD (excluding amiodarone) previously, but not regularly prior to this procedure	
		99	Unknown		Information missing	

PM 3.03	Amiodarone	1	No	Indicate if the patient has in the past or prior to this procedure taken amiodarone	The patient has never taken amiodarone	Code n2
		2	Current		The patient was taking amiodarone regularly prior to this procedure	
		3	Former		The patient had taken amiodarone previously, but not regularly prior to this procedure	
		99	Unknown		Information missing	
PM 3.04	Beta-blockers	1	No	Indicate if the patient has in the past or prior to this procedure taken beta-blocker(s)	The patient has never taken beta-blocker(s)	Code n2
		2	Current		The patient was taking beta-blocker(s) regularly prior to this procedure	
		3	Former		The patient had taken beta-blocker(s) previously, but not regularly prior to this procedure	
		99	Unknown		Information missing	
PM 3.05	Calcium antagonists	1	No	Indicate if the patient has in the past or prior to this procedure taken non-dihydropyridine calcium antagonists(s).	The patient has never taken non-dihydropyridine calcium antagonist(s)	Code n2
		2	Current		The patient was taking non-dihydropyridine calcium antagonist(s) regularly prior to this procedure	
		3	Former		The patient had takennon-dihydropyridine calcium antagonist(s) previously, but not regularly prior to this procedure	
		99	Unknown		Information missing	
PM 3.06	Digoxin	1	No	Indicate if the patient has in the past or prior to this procedure taken digoxin	The patient has never taken digoxin	Code n2
		2	Current		The patient was taking digoxin regularly prior to this procedure	
		3	Former		The patient had taken digoxin previously, but not regularly prior to this procedure	
		99	Unknown		Information missing	
PM 3.07	Diuretics	1	No	Indicate if the patient has in the past or prior to this procedure been taking diuretic(s)	The patient has never taken diuretic(s)	Code n2
		2	Current		The patient was taking diuretic(s) regularly prior to this hospital procedure	
		3	Former		The patient had taken diuretic(s) previously, but not regularly prior to this procedure	
		99	Unknown		Information missing	
PM 3.08	ACE inhibitors/ angiotensin II blockers / aldosterone antagonists	1	No	Indicate if the patient had been taking ACE inhibitor(s) or angiotensin II receptor blocker(s) or aldosterone antagonist(s) prior to this procedure	The patient has never taken ACE Inhibitor(s), angiotensin II receptor blocker(s) or aldosterone antagonists(s)	Code n2
		2	Current		The patient was taking ACE Inhibitor(s), angiotensin II receptor blocker(s) or aldosterone antagonists(s) regularly prior to this hospital procedure	
		3	Former		The patient had taken ACE Inhibitor(s), angiotensin II receptor blocker(s) or aldosterone antagonists(s) previously, but not regularly prior to this procedure	
		99	Unknown		Information missing	

PM 3.09	Antiplatelet - aspirin	1	No	Indicate if the patient has been taking acetylsalicylic acid (ASA / aspirin) regularly prior to this procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 3.10	Antiplatelet - clopidogrel/ ticlopidine	1	No	Indicate if the patient has been taking ticlopidine or clopidogrel regularly prior to this procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 3.11	Antiplatelet - other	1	No	Indicate if the patient has been taking any other antiplatelet agent regularly prior to this procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 3.12	Coumarin anticoagulants	1	No	Indicate (specifically) if the patient had been taking anticoagulant medication regularly before this procedure	The patient was not taking warfarin or any other coumarin derivative regularly prior to this procedure	Code n2
		2	Warfarin		The patient was taking warfarin regularly prior to this procedure	
		3	Other coumarin derivatives		The patient was taking another coumarin derivative (not warfarin) regularly prior to this procedure	
		99	Unknown		Information missing	
PM 3.13	Heparin / LMWH	1	No	Indicate if the patient had been taking heparin or low molecular weight heparin (either intravenous or subcutaneous) agent(s) prior to this procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 3.14	Direct thrombin inhibitors	1	No	Indicate if the patient had been taken direct antithrombin agent(s) regularly before this procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 3.15	Coumarin anticoagulants	1	No	Indicate (specifically) if the patient had been taking anticoagulant medication regularly before this procedure	The patient was not taking warfarin or any other coumarin derivative regularly prior to this procedure	Code n2
		2	Warfarin		The patient was taking warfarin regularly prior to this procedure	
		3	Other coumarin derivatives		The patient was taking another coumarin derivative (not warfarin) regularly prior to this procedure	
		99	Unknown		Information missing	

Underlying Disease and Clinical Presentation						
PM 4.01	Predominant presenting symptom	1	Asymptomatic	Indicate the **predominant** symptom / reason why the patient presented for medical attention (see definitions)		Code n2
		2	Fatigue			
		3	Palpitations			
		4	Dyspnoea			
		5	Chest pain			
		6	Near / pre-syncope			
		7	Syncope			
		8	Chronic heart failure			
		9	Systemic embolic event			
		10	Cardiac arrest / aborted sudden death			
		88	Other symptoms			
		99	Unknown		Information missing	
PM 4.02	Main indication for pacemaker	1	Documented bradycardia	Indicate (specifically) the main indication for this procedure	Documented bradycardia (of any description) is the indication for pacemaker insertion	Code n2
		2	Suspected bradycardia		Bradycardia is suspected, but not documented. This is the indication for pacemaker insertion.	
		3	Heart failure		Heart failure is the indication for pacemaker insertion (CRT / other) [See definitions]	
		4	Hypertrophic cardiomyopathy with left ventricular outflow tract obstruction		Hypertrophic cardiomyopathy with left ventricular outflow tract obstruction is the indication for pacemaker insertion [See definition PM 5.03]	
		5	Atrial arrhythmias without sinus dysfunction		Atrial arrhythmias without sinus dysfunction	
		6	Congenital long QT syndrome		Congenital long QT syndrome [See definition PM 5.13]	
		7	AV node ablation		AV node ablation is being performed	
		8	Prophylactic		Prophylactic pacemaker insertion	
		88	Other		Other	
		99	Unknown		Information missing	

PM 4.03	Functional class	1	NYHA I	Record the New York Heart Association (NYHA) functional status of the patient	No limitation of physical activity. Ordinary physical activity does not cause undue fatigue, dyspnoea or palpitations.	Code n2
		2	NYHA II		Slight limitation of physical activity. Comfortable at rest, but ordinary physical activity results in fatigue, palpitations or dyspnoea.	
		3	NYHA III		Marked limitation of physical activity. Comfortable at rest, but less than ordinary activity results in symptoms.	
		4	NYHA IV		Unable to carry on any physical activity without discomfort. Symptoms are present even at rest with increased discomfort with any physicial activity.	
		99	Unknown		Information missing	
PM 4.04	Left ventricular (LV) function	1	Normal (>50%)	Indicate the patients estimated or calculated ejection fraction. This categorises the percentage of the blood emptied from the left ventricle at the end of the contraction. Data may have been derived from angiography, echocardiography, nuclear imaging, magnetic resonance imaging etc.		Code n2
		2	Slightly reduced (41-50%)			
		3	Moderately reduced (31-40%)			
		4	Severely reduced (<30%)			
		5	LV function not assessed			
		99	Unknown		Information missing	
Relevant cardiac diagnoses						
PM 5.01	Apparently normal heart	1	No	Indicate if the patient has an apparently normal heart		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 5.02	Ischaemic heart disease	1	No	Indicate if the patient has underlying ischaemic heart disease	The patient has no history of ischaemic heart disease (angina / acute coronary syndrome)	Code n2
		2	Yes, without Q wave MI		The patient has a history of ischaemic heart disease, without evidence or history of Q wave myocardial infarction	
		3	Yes, with Q wave MI		The patient has a history of ischaemic heart disease, with evidence or history of Q wave myocardial infarction	
		99	Unknown		Information missing	
PM 5.03	Cardiomyopathy - hypertrophic	1	No	Indicate if the patient has hypertrophic cardiomyopathy (see definitions)		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 5.04	Cardiomyopathy - dilated	1	No	Indicate if the patient has dilated cardiomyopathy (see definitions)		Code n2
		2	Yes			
		99	Unknown		Information missing	

PM 5.05	Cardiomyopathy - (arrhythmogenic) right ventricular	1	No	Indicate if the patient has right ventricular cardiomyopathy (see definitions)		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 5.06	Cardiomyopathy - other	1	No	Indicate if the patient has any other cardiomyopathy. This includes cardiomyopathy secondary to subacute / acute myocarditis, restrictive cardiomyopathy or unclassified cardiomyopathy. [See definitions]		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 5.07	Congenital heart disease	1	No	Indicate if the patient has congenital heart disease (see definitions)		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 5.08	Valvular heart disease	1	No	Indicate if the patient has valvular heart disease		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 5.09	Primary electrical disease - Wolff-Parkinson-White trait	1	No	Indicate if the patient has Wolff-Parkinson-White trait (see definitions)		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 5.10	Primary electrical disease - congenital long QT	1	No	Indicate if the patient has a congenital long QT syndrome (see definitions)		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 5.11	Primary electrical disease - other	1	No	Indicate if the patient has any other primary electrical disease. (This would include a diagnosis of primary VF or Brugada syndrome.)		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 5.12	Congenital AV block	1	No	Indicate if the patient has congenital heart block (see definitions)		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 5.13	Neurally mediated syncope	1	No	Indicate if the patient has neurally mediated syncope (see definitions)		Code n2
		2	Yes			
		99	Unknown		Information missing	

Arrhythmia indication						
PM 6.01	Highest degree of AV block	1	Third degree	Indicate (specifically) the **highest** degree of AV block [one choice only]	Third degree AV block is defined as absence of AV conduction	Code n2
		2	Second degree type I (Wenckebach)		Second degree type I (Wenckebach) block is characterised by progressive prolongation of the PR interval until an atrial impulse is not conducted to the ventricles.	
		3	Second degree type II (Mobitz)		Second degree type II (Mobitz) denotes occasional or repetitive sudden block of conduction of an impulse without prior significant lengthening of conduction time (<80 ms).	
		4	2:1 AV block		2:1 AV block is when AV conduction occurs in a 2:1 pattern, every other P wave not being conducted to the ventricles. Block cannot be unequivocally classified as type I or type II.	
		5	First degree		First degree During first-degree AV block, every atrial impulse conducts to the ventricles and a regular ventricular rate is produced, but the PR interval exceeds 0.20 second in adults less than 75 years or exceeds 0.24 second in persons 75 years or older.	
		6	Impaired AV conduction status unknown		Impaired AV conduction but the nature of this cannot be discerned on the basis on the ECG. For example atrial fibrillation with slow ventricular response and not complete heart block	
		7	Normal AV conduction		Normal AV conduction There is no degree of heart block	
		99	Unknown		Information missing	
PM 6.02	QRS duration			Indicate the duration of the QRS complex in mSec		n3
PM 6.03	Sinus dysfunction	1	No	Indicate if the patient has sinus node dysfunction (inappropriate sinus bradycardia, sinus pauses, sino-atrial block), without evidence of atrial fibrillation / flutter / re-entrant atrial tachycardia		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 6.04	Bradycardia - Tachycardia syndrome	1	No	Indicate if the patient has sinus node dysfunction with atrial flutter / fibrillation / re-entrant atrial tachycardia		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 6.05	Atrial arrhythmias without sinus dysfunction	1	No	Indicate if the patient has atrial arrhythmias without sinus dysfunction		Code n2
		2	Yes			
		99	Unknown		Information missing	

PM 6.06	Polymorphic VT / Torsades des pointes	1	No	Indicate if the patient has polymorphic ventricular tachycardia / torsades des pointes (see definitions)		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 6.07	No documented arrhythmia	1	No	Indicate if the patient has no documented arrhythmia		Code n2
		2	Yes			
		99	Unknown		Information missing	
Procedure						
PM 7.01	Date of Procedure			Indicate the procedure date		Date
PM 7.02	Sedation / anaesthesia	1	No	Indicate if the patient received intravenous sedation or received an anaesthetic (other than local) during this procedure		Code n2
		2	Sedation IV			
		3	General Anaesthetic			
		99	Unknown		Information missing	
PM 7.03	Antibiotics IV - perioperative	1	None	Indicate if the patient received intravenous antibiotics for the procedure (either prior to or during the procedure)		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 7.04	Antibiotics topical	1	None	Indicate if the patient received topical antibiotics (including antibiotic solution irrigation of the pocket) during the procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 7.05	Antibiotics postoperative	1	None	Indicate if the patient received intravenous antibiotics post the procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 7.06	System configuration	1	None	Indicate (specifically) the system configuration / programmed pacing mode		Code n2
		2	Single chamber right ventricle			
		3	Single chamber atrial			
		4	Atrial synchronised right ventricular pacing (VDD)			
		5	Dual chamber atrio-right ventricular			
		6	Atrio-biventricular			
		7	Biventricular			
		8	Single chamber left ventricular			
		9	Dual chamber atrio-left ventricular			
		88	Other			
		99	Unknown		Information missing	

PM 7.07	Generator manufacturer			Indicate (specifically) the generator manufacturer		an100
PM 7.08	Generator model			Indicate the generator model		an50
PM 7.09	Generator serial number			Indicate the generator serial number		an50
PM 7.10	Generator site of implantation	1	None	Indicate (specifically) the generator site of implantation		Code n2
		2	Pectoral - Subcutaneous / subfascial			
		3	Pectoral - Submuscular			
		4	Abdominal - Subcutaneous / subfascial			
		5	Abdominal - Submuscular			
		6	Axillary			
		88	Other			
		99	Unknown		Information missing	
PM 7.11	**Right ventricular lead implant**	1	No	**Only one choice** (if No / Unknown go to PM 7.18)		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 7.12	Right ventricular lead manufacturer			Indicate (specifically) the right ventricular defibrillation lead manufacturer		an100
PM 7.13	Right ventricular lead model			Indicate the right ventricular lead model		an50
PM 7.14	Right ventricular lead serial number			Indicate the right ventricular lead serial number		an50
PM 7.15	Right ventricular Lead configuration	1	Unipolar	Indicate (specifically) the right ventricular lead configuration		Code n2
		2	Bipolar			
		99	Unknown		Information missing	

PM 7.16	Right ventricular lead access	1	Cephalic vein	Indicate (specifically) the right ventricular lead implant approach		Code n2
		2	Subclavian vein			
		3	External jugular vein			
		4	Internal jugular vein			
		5	Femoral vein			
		6	Transvenous, other			
		7	Thoracotomy			
		8	Thoracoscopy			
		9	Subcutaneous			
		88	Other			
		99	Unknown		Information missing	
PM 7.17	Right ventricular lead placement	1	Apex	Indicate (specifically) the right ventricular lead position. Epicardial placement includes placement via the coronary sinus.		Code n2
		2	Septum / Outflow			
		3	Epicardial			
		88	Other			
		99	Unknown		Information missing	
PM 7.18	**Right atrial lead implant**	1	No	**Only one choice** (if No / Unknown go to PM 7.25)		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 7.19	Right Atrial lead manufacturer			Indicate (specifically) the right atrial lead manufacturer		an100
PM 7.20	Right atrial lead model			Indicate the right atrial lead model		an50
PM 7.21	Right atrial lead serial number			Indicate the right atrial lead serial number		an50
PM 7.22	Right atrial Lead configuration	1	Unipolar	Indicate (specifically) the right atrial lead configuration		Code n2
		2	Bipolar			
		99	Unknown		Information missing	

PM 7.23	Right atrial lead access	1	Cephalic vein	Indicate (specifically) the right atrial lead implant approach		Code n2
		2	Subclavian vein			
		3	External jugular vein			
		4	Internal jugular vein			
		5	Femoral vein			
		6	Transvenous, other			
		7	Thoracotomy			
		8	Thoracoscopy			
		9	Subcutaneous			
		88	Other			
		99	Unknown		Information missing	
PM 7.24	Right atrial lead placement	1	Appendage	Indicate (specifically) the right atrial lead position. Epicardial placement includes placement via the coronary sinus.		Code n2
		2	Septum			
		3	Epicardial			
		88	Other			
		99	Unknown		Information missing	
PM 7.25	**Left ventricular lead implant**	1	No	**Only one choice** (if No / Unknown go to PM 7.33)		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 7.26	Left ventricular lead manufacturer			Indicate (specifically) the left ventricular lead manufacturer		an100
PM 7.27	Left ventricular lead model					an50
PM 7.28	Left ventricular lead serial number			Indicate the left ventricular implant serial number		an50
PM 7.29	Left ventricular Lead configuration	1	Unipolar	Indicate (specifically) the left ventricular lead configuration		Code n2
		2	Bipolar			
		99	Unknown		Information missing	

PM 7.30	Left ventricular lead access	1	Cephalic vein	Indicate (specifically) the left ventricular lead implant approach		Code n2
		2	Subclavian vein			
		3	External jugular vein			
		4	Internal jugular vein			
		5	Femoral vein			
		6	Transvenous, other			
		7	Thoracotomy			
		8	Thoracoscopy			
		9	Subcutaneous			
		88	Other			
		99	Unknown		Information missing	
PM 7.31	Left ventricular lead placement	1	Coronary vein	Indicate (specifically) the left ventricular lead position.		Code n2
		2	Intrapericardial			
		3	Endocardial			
		88	Other			
		99	Unknown		Information missing	
PM 7.32	**Left atrial lead implant**	1	No	**Only one choice** (if No / Unknown go to PM 8.01)		Code n2
		2	Yes			
		99	Unknown			
PM 7.33	Left atrial lead manufacturer			Indicate (specifically) the left atrial lead manufacturer		an100
PM 7.34	Left atrial model			Indicate the left atrial lead model		an50
PM 7.35	Left atrial lead serial number			Indicate the left atrial lead serial number		an50
PM 7.36	Left atrial Lead configuration	1	Unipolar	Indicate (specifically) the left atrial lead configuration		Code n2
		2	Bipolar			
		99	Unknown		Information missing	

PM 7.37	Left atrial lead access	1	Cephalic vein	Indicate (specifically) the left atrial lead implant approach		Code n2
		2	Subclavian vein			
		3	External jugular vein			
		4	Internal jugular vein			
		5	Femoral vein			
		6	Transvenous, other			
		7	Thoracotomy			
		8	Thoracoscopy			
		9	Subcutaneous			
		88	Other			
		99	Unknown		Information missing	
PM 7.38	Left atrial lead placement	1	Coronary vein	Indicate (specifically) the left atrial lead position. Epicardial placement includes placement via the coronary sinus.		Code n2
		2	Intrapericardial			
		3	Endocardial			
		88	Other			
		99	Unknown		Information missing	
Reposition / Repair/ Replacement / Explant Procedure						
PM 8.01	Is this an reposition / repair/ replacement / explant procedure	1	No			Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 8.02	Date of implant of device requiring reposition / repair/ replacement / explant			Indicate the date of implant for which this procedure is a reposition / repair / replacement / explant procedure		Date
PM 8.03	Generator reposition / repair/ replacement / explant	1	Not applicable	Indicate (specifically) what action was done to the generator		Code n2
		2	Generator reposition			
		3	Generator repair			
		4	Generator replacement			
		5	Generator explant			
		6	System explant			
		7	Wound revision			
		88	Other			
		99	Unknown		Information missing	

PM 8.04	Reason for reposition / repair/ replacement / explant of generator	1	Not applicable	Indicate (specifically) why the generator was repositioned / repaired / replaced / explanted		Code n2
		2	Normal EOL			
		3	Premature EOL			
		4	Upgrade to dual chamber			
		5	Upgrade to biventricular / CRT			
		6	Upgrade to atrial therapy			
		7	Sensing / pacing failure			
		8	Software (algorithm) failure			
		9	Connector failure			
		10	Recall			
		11	Skin erosion / infection			
		12	Systemic infection / endocarditis			
		13	Elective (patient request)			
		88	Other			
		99	Data unknown		Information missing	
PM 8.05	Right ventricular lead reposition / repair/ replacement / explant	1	Not applicable	Indicate (specifically) what action was done to the right ventricular lead		Code n2
		2	Lead reposition			
		3	Lead repair			
		4	Lead replacement			
		5	Lead explant			
		6	System explant			
		88	Other			
		99	Unknown		Information missing	

PM 8.06	Reason for reposition / repair/ replacement / explant of right ventricular lead	1	Not applicable	Indicate (specifically) why the right ventricular lead was repositioned / repaired / replaced / explanted		Code n2
		2	Displacement			
		3	High pacing threshold			
		4	Undersensing			
		5	Myopotential inhibition			
		6	Extracardiac stimulation			
		7	Connector failure			
		8	Insulation failure			
		9	Conductor break			
		10	Recall			
		11	Cardiac perforation			
		12	Skin erosion / infection			
		13	Systemic infection / endocarditis			
		14	Elective (patient request)			
		88	Other			
		99	Unknown		Information missing	
PM 8.07	Right atrial lead reposition / repair/ replacement / explant	1	Not applicable	Indicate (specifically) what action was done to the right atrial lead		Code n2
		2	Lead reposition			
		3	Lead repair			
		4	Lead replacement			
		5	Lead explant			
		6	System explant			
		88	Other			
		99	Unknown		Information missing	

PM 8.08	Reason for reposition / repair/ replacement / explant of right atrial lead	1	Not applicable	Indicate (specifically) why the right atrial defibrillation lead was repositioned / repaired / replaced / explanted		Code n2
		2	Displacement			
		3	High pacing threshold			
		4	Undersensing			
		5	Myopotential inhibition			
		6	Extracardiac stimulation			
		7	Connector failure			
		8	Insulation failure			
		9	Conductor break			
		10	Recall			
		11	Cardiac perforation			
		12	Skin erosion / infection			
		13	Systemic infection / endocarditis			
		14	Elective (patient request)			
		88	Other			
		99	Unknown		Information missing	
PM 8.09	Left Ventricular lead reposition / repair/ replacement / explant	1	Not applicable	Indicate (specifically) what action was done to the left ventricular lead		Code n2
		2	Lead reposition			
		3	Lead repair			
		4	Lead replacement			
		5	Lead explant			
		6	System explant			
		88	Other			
		99	Unknown		Information missing	

PM 8.10	Reason for reposition / repair/ replacement / explant of left ventricular lead	1	Not applicable	Indicate (specifically) why the left ventricular defibrillation lead was repositioned / repaired / replaced / explanted		Code n2
		2	Displacement			
		3	High pacing threshold			
		4	Undersensing			
		5	Myopotential inhibition			
		6	Extracardiac stimulation			
		7	Connector failure			
		8	Insulation failure			
		9	Conductor break			
		10	Recall			
		11	Cardiac perforation			
		12	Skin erosion / infection			
		13	Systemic infection / endocarditis			
		14	Elective (patient request)			
		88	Other			
		99	Unknown		Information missing	
PM 8.11	Left atrial lead reposition / repair/ replacement / explant	1	Not applicable	Indicate (specifically) what action was done to the left atrial lead		Code n2
		2	Lead reposition			
		3	Lead repair			
		4	Lead replacement			
		5	Lead explant			
		6	System explant			
		88	Other			
		99	Unknown		Information missing	

PM 8.12	Reason for reposition / repair/ replacement / explant of left atrial lead	1	Not applicable	Indicate (specifically) why the left atrial lead was repositioned / repaired / replaced / explanted		Code n2
		2	Displacement			
		3	High pacing threshold			
		4	Undersensing			
		5	Myopotential inhibition			
		6	Extracardiac stimulation			
		7	Connector failure			
		8	Insulation failure			
		9	Conductor break			
		10	Recall			
		11	Cardiac perforation			
		12	Skin erosion / infection			
		13	Systemic infection / endocarditis			
		14	Elective (patient request)			
		88	Other			
		99	Unknown		Information missing	
PM 8.13	Number of Inactive leads abandoned in place	0	None	Indicate (specifically) the number of inactive leads abandoned in place		Code n2
		1	1			
		2	2			
		3	3			
		4	4			
		5	>4			
		99	Unknown		Information missing	
PM 8.14	Number of lead adaptors	0	None	Indicate (specifically) the number of lead adapters used		Code n2
		1	1			
		2	2			
		3	3			
		4	>3			
		99	Unknown		Information missing	
Discharge						
PM 9.01	Survival status at discharge	1	Alive	Indicate vital status at discharge		Code n2
		2	Dead			
		99	Unknown		Information missing	
PM 9.02	Date of discharge / death			Indicate the date the patient was discharged from hospital or if the patient died record the date of death.		Date

Medication at discharge						
PM 10.01	Class I AAD	1	No	Indicate if the patient, at the time of discharge, is taking Class I anti-arrhythmic drug(s)		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 10.02	Class III AAD (excluding amiodarone)	1	No	Indicate if the patient, at the time of discharge, is taking Class III anti-arrhythmic drug(s) (excluding amiodarone)		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 10.03	Amiodarone	1	No	Indicate if the patient, at the time of discharge, is taking amiodarone		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 10.04	Beta-blockers	1	No	Indicate if the patient, at the time of discharge, is taking beta blocker(s)		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 10.05	Calcium antagonists	1	No	Indicate if the patient, at the time of discharge, is taking non-dihydropyridine calcium antagonist(s).		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 10.06	Digoxin	1	No	Indicate if the patient, at the time of discharge, is taking digoxin		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 10.07	Diuretics	1	No	Indicate if the patient, at the time of discharge, is taking diuretic(s)		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 10.08	ACE inhibitors/ angiotensin II blockers / aldosterone antagonists	1	No	Indicate if the patient, at the time of discharge, is taking ACE inhibitor(s) or angiotensin receptor blocker(s) or aldosterone antagonist(s)		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 10.09	Antiplatelet - aspirin	1	No	Indicate if the patient, at the time of discharge is taking acetylsalicylic acid (ASA/Aspirin)		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 10.10	Antiplatelet - clopidogrel/ ticlopidine	1	No	Indicate if the patient, at the time of discharge, is taking ticlopidine or clopidogrel		Code n2
		2	Yes			
		99	Unknown		Information missing	

PM 10.11	Antiplatelet - other	1	No	Indicate if the patient, at the time of discharge, is taking any other antiplatelet medication		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 10.12	Heparin / LMWH	1	No	Indicate if the patient, at the time of discharge, is taking heparin or low molecular weight heparin (either intravenous or subcutaneous)		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 10.13	Direct thrombin inhibitors	1	No	Indicate if the patient, at the time of discharge, is taking direct antithrombin agent(s)		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 10.14	Coumarin anticoagulants	1	No	Indicate (specifically) if the patient, at the time of discharge is taking anticoagulant medication		Code n2
		2	Warfarin			
		3	Other coumarin derivatives			
		99	Unknown		Information missing	
PM 10.15	Antibiotics	1	No	Indicate (specifically) if the patient, at the time of discharge, is taking antibiotic(s)		Code n2
		2	Oral			
		3	Topical			
		4	Intravenous			
		99	Unknown		Information missing	
Post-procedure complications (from date of procedure to date of first follow-up)						
PM 11.01	Central venous complications	1	No	Indicate if the patient experienced an intrathoracic vein thrombosis or laceration		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 11.02	Deep venous thrombosis	1	No	Indicate if the patient experinced a deep vein thrombosis in the lower limb(s) post procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 11.03	Pulmonary embolism	1	No	Indicate if the patient experienced a pulmonary embolism post procedure		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 11.04	Pneumothorax	1	No	Indicate if the patient experienced a pneumothorax post procedure		Code n2
		2	Yes, not requiring drainage			
		3	Yes, requiring drainage			
		99	Unknown		Information missing	

PM 11.05	Haemothorax	1	No	Indicate if the patient experienced a haemothorax post procedure		Code n2
		2	Yes, not requiring drainage			
		3	Yes, requiring drainage			
		99	Unknown		Information missing	
PM 11.06	Pericardial effusion / tamponade	1	No	Indicate if the patient experienced a pericardial effusion / tamponade post procedure		Code n2
		2	Yes, not requiring pericardiocentesis			
		3	Yes, requiring pericardiocentesis			
		4	Yes, requiring thoracotomy			
		99	Unknown		Information missing	
PM 11.07	Stroke or RIND or TIA	1	No	Indicate if the patient experienced a stroke or TIA post procedure (see definitions)		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 11.08	Myocardial infarction	1	No	Indicate if the patient experienced a myocardial infarction post procedure (see definitions)		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 11.09	Wound complications	1	None	Indicate (specifically) if the patient had any wound complications		Code n2
		2	Pocket haematoma			
		3	Wound infection			
		4	Wound breakdown / erosion			
		88	Other			
		99	Unknown		Information missing	
PM 1110	Need to remove whole system	1	No	Indicate if the whole system was removed		Code n2
		2	Yes			
		99	Unknown		Information missing	
PM 11.11	Other complication	1	No	Indicate if patient experienced any other complication		Code n2
		2	Yes			
		99	Unknown		Information missing	

Follow Up						
PM 12.01	Date of follow up / death			Indicate the date that follow up was performed		Date
PM 12.02	Survival status at follow up	1	Alive	Indicate vital status at follow up		Code n2
		2	Dead			
		99	Unknown		information missing	

Pacemaker Data Standards (definitions)

Pacemaker Data Standards (definitions)

ID No	Field	Definition of Field
PM 2.01	History of cerebrovascular embolic disease	**History of cerebrovascular embolic** event as defined by one or more of : a) Cerebrovascular Accident (CVA): patient has a history of stroke i.e. loss of neurological function caused by an ischaemic event with residual symptoms at least 72 hours after onset. b) Reversible ischaemic neurological deficit (RIND): patient has a history of loss of neurological function caused by ischaemia with symptoms at least 24 hours after onset but complete return of function within 72 hours. c) Transient Ischaemic Attack (TIA): Patient has a history of loss of neurological function caused by ischaemia that was abrupt in onset but with complete return of function within 24 hours **[ACC]**
PM 4.01	Predominant presenting symptom	**Asymptomatic** means having no symptoms of illness or disease
		Fatigue (loss of energy, lassitude, listlessness, languor) refers to a weariness and loss of that sense of well-being typically found in patients healthy of body and mind
		Palpitations may be defined as an awareness of the beating of the heart, either fast or slow, an awareness most commonly brought about by a change in the heart's rhythm or an augmentation of its contractility. **[Harrison's Principles of Internal Medicine (altered)]**
		Dyspnoea is defined as abnormal or uncomfortable breathing in the context of what is normal for a person according to his or her level of fitness and exertional threshold for breathlessness. **[Silvestri GA, Mahler DA. Evaluation of dyspnoea in the elderly patient. Clin Chest Med 1993;14:393-404]**
		Chest pain may be defined as a sensation of chest discomfort, heaviness or pressure.
		Near / pre-syncope is a descriptive term for all sensations directly preceding syncope whether or not they are followed by complete loss of consciousness. **[ESC Guidelines on management (diagnosis and treatment) of syncope (2001) (altered)]**
		Syncope is a symptom, defined as a transient, self-limited loss of consciousness, usually leading to falling. The onset of syncope is relatively rapid, and the subsequent recovery is spontaneous, complete, and usually prompt. The underlying mechanism is a transient global cerebral hypoperfusion. **[ESC Guidelines on management (diagnosis and treatment) of syncope (2001)]**
		Chronic heart failure. Criteria 1 and 2 should be fulfilled in all cases 1. Symptoms of heart failure (at rest or during exercise) and 2. Objective evidence of cardiac dysfunction (at rest) and (in cases where the diagnosis is in doubt) 3. Response to treatment directed towards heart failure One commonly used definition is: heart failure is a pathophysiological state in which an abnormality of cardiac function is responsible for the failure of the heart to pump blood at a rate commensurate with the requirements of the metabolising tissues. **[Task Force for the Diagnosis and Treatment of Chronic Heart Failure, European Society of Cardiology]**

ID No	Field	Definition of Field
		Cardiac arrest / aborted sudden death. Sudden cardiac death - 'Natural death due to cardiac causes, heralded by abrupt loss of consciousness within one hour of the onset of acute symptoms; preexisting heart disease may have been known to be present, but the time and mode of death are unexpected. **[Task Force on Sudden Cardiac Death of the European Society of Cardiology (2001)]**
		Any other symptom causing the patient to seek medical attention, not listed above.
PM 5.02	Ischaemic heart disease	**Q-wave MI**: Development of any Q wave in leads V1 through V3, or the development of a Q wave greater than or equal to 30 ms (0.03 s) in leads I, II, aVL, aVF, V4, V5, or V6. (Q-wave changes must be present in any 2 contiguous leads and be greater than or equal to 1 mm in depth.) [**European Society of Cardiology / American College of Cardiology Definition of Myocardial Infarction Reference: Myocardial infarction redefined- a consensus document of the Joint European Society of Cardiology / American College of Cardiology Committee for the redefinition of myocardial infarction. Euro Heart Journal. 2000; 21:1502-1513.]**
PM 5.03	Cardiomyopathy - hypertrophic	**Hypertrophic cardiomyopathy (HCM)** is an inherited heart muscle disorder caused by mutations in genes encoding cardiac sarcomeric proteins. HCM has a highly characteristic pathology (myocardial hypertrophy, myocyte disarray and fibrosis) which contributes to a broad spectrum of functional abnormalities that includes myocardial ischaemia, diastolic dysfunction and left ventricular outflow obstruction, resulting in congestive heart failure, clinically important arrhythmias (such as atrial fibrillation) and SCD in some patients. **[Task Force on Sudden Cardiac Death of the European Society of Cardiology (2001)]**
PM 5.04	Cardiomyopathy - dilated	**Idiopathic dilated cardiomyopathy (DCM)** is a chronic heart muscle disease characterized by left ventricular dilatation and impairment of systolic function. **[Task Force on Sudden Cardiac Death of the European Society of Cardiology (2001)]**
PM 5.05	Cardiomyopathy - (arrhythmogenic) right ventricular	**Right ventricular cardiomyopathy (RVC),** originally termed arrhythmogenic right ventricular dysplasia, is a disease of the myocardium, characterized by regional or global fibro-fatty replacement of the right ventricular myocardium, with or without left ventricular involvement and with relative sparing of the septum. **[Task Force on Sudden Cardiac Death of the European Society of Cardiology (2001)]**

ID No	Field	Definition of Field
PM 5.06	Cardiomyopathy - other	Indicate if the patient has any other cardiomyopathy. This includes cardiomyopathy secondary to subacute / acute myocarditis, restrictive cardiomyopathy or unclassified cardiomyopathy. According to the definition of the World Health Organization '**myocarditis** is an inflammatory heart muscle disease associated with cardiac dysfunction'. Myocarditis may occur as the consequence of a systemic infective disease or may be the consequence of a silent infection. Clinical diagnoses of myocarditis may be difficult as the clinical manifestations are frequently non-specific ranging from chest pain to arrhythmias and from heart failure to SCD. **[Task Force on Sudden Cardiac Death of the European Society of Cardiology (2001)]** **Restrictive cardiomyopathy i**s characterized by restrictive filling and reduced diastolic volume of either or both ventricles with normal or near-normal systolic function and wall thickness. Increased interstitial fibrosis may be present. It may be idiopathic or associated with other disease (eg, amyloidosis; endomyocardial disease with or without hypereosinophilia). **[Report of the 1995 World Health Organization/International Society and Federation of Cardiology Task Force on the Definition and Classification of Cardiomyopathies (Circulation. 1996;93:841-842.)]** **Unclassified Cardiomyopathies** include a few cases that do not fit readily into any group (eg, fibroelastosis, noncompacted myocardium, systolic dysfunction with minimal dilatation, mitochondrial involvement). **[Report of the 1995 World Health Organization/International Society and Federation of Cardiology Task Force on the Definition and Classification of Cardiomyopathies (Circulation. 1996;93:841-842.)]**
PM 5.07	Congenital heart disease	**Congenital heart disease** is defined as an abnormality in cardiac structure or function that is present at birth, even if it is discovered much later. **[Heart Disease 6th Ed. Braunwald Zipes Libby (altered)]**
PM 5.09	Primary electrical disease - Wolff-Parkinson-White trait	Three basic features typify the ECG abnormalities of patients with the usual form of WPW conduction caused by an anomalous AV connection: (1) PR interval less than 120 milliseconds during sinus rhythm; (2) QRS complex duration exceeding 120 milliseconds with a slurred, slowly rising onset of the QRS in some leads (delta wave) and usually a normal terminal QRS portion; and (3) secondary ST-T wave changes that are generally directed in an opposite direction to the major delta and QRS vectors. **[Heart Disease 6th Ed. Braunwald Zipes Libby (altered)]**
PM 5.10	Primary electrical disease - congenital long QT	The **long QT syndrome (LQTS)** is a familial disease characterised by an abnormally prolonged QT interval and, usually, by stress-mediated life threatening ventricular arrhythmias. This is a primary electrical disorder, usually without evidence of structural heart disease or LV dysfunction. **[Task Force on Sudden Cardiac Death of the European Society of Cardiology (2001) (altered)]**

ID No	Field	Definition of Field
PM 5.11	Primary electrical disease - other	Indicate if the patient has any other primary electrical disease. (This would include a diagnosis of primary VF or Brugada syndrome, for example.) **Brugada syndrome -** Individuals with syncope, resuscitated cardiac arrest, and/or family history of unexplained sudden cardiac death who have variants of right bundle branch block QRS morphology and ST-segment elevation in leads V1 and V3 **[Task Force on Sudden Cardiac Death of the European Society of Cardiology (2001) (altered)]** Ventricular fibrillation in the absence of structural heart disease, well characterised cardiac electrophysiologic abnormalities, cardiotoxicity, electrolyte abnormalities, known heritable arrhythmogenic conditions and other transient conditions. **[Task Force on Sudden Cardiac Death of the European Society of Cardiology European Heart Journal (2001) 22, 1374–1450 (altered)]**
PM 5.12	Congenital AV block	Indicate if the patient has heart block present since birth. The ventricular rhythm may be narrow QRS and rate may respond to exercise. The patient may be asymptomatic or suffer syncope or dyspnoea on exertion.
PM 5.13	Neurally mediated syncope	**'Neurally-mediated reflex syncopal syndrome'** refers to a reflex that, when triggered, gives rise to vasodilatation and bradycardia, although the contribution of both to systemic hypotension and cerebral hypoperfusion may differ considerably. **[Task Force Report Guidelines on management (diagnosis and treatment) of syncope (European Heart Journal (2001) 22, 1256–1306)]**
PM 6.06	Polymorphic VT / Torsades des pointes	Indicate if the patient has polymorphic ventricular tachycadia / torsades des pointes **Polymorhic with long QT interval (Torsades des pointes)** The term torsades des pointes refers to a VT characterised by QRS complexes of changing amplitude that appear to twist around the isoelectric line and occur at rates of 200 to 250/min.The term is usually used to connote a syndrome, not simply an ECG description of the QRS complex of the tachycardia, characterised by prolonged ventricular repolarisation with QT intervals generally exceeding 500 milliseconds. The abnormal repolarisation need not be present or at least prominent on all beats but may be apparent only on the beat prior to the onset of torsades de pointes (i.e., following a premature ventricular contraction).
PM 12.07	Stroke or RIND or TIA	**History of cerebrovascular embolic** event as defined by one or more of : a) Cerebrovascular Accident (CVA): patient has a history of stroke i.e. loss of neurological function caused by an ischaemic event with residual symptoms at least 72 hours after onset. b) Reversible ischaemic neurological deficit (RIND): patient has a history of loss of neurological function caused by ischaemia with symptoms at least 24 hours after onset but complete return of function within 72 hours. c) Transient Ischaemic Attack (TIA): Patient has a history of loss of neurological function caused by ischaemia that was abrupt in onset but with complete return of function within 24 hours **[ACC]**
PM 12.08	Myocardial Infarction	**New myocardial infarction after the ablation procedure,** as characterized by clinical symptoms (chest pain) and/or changes in ECG, biochemical markers, or pathological findings. **[European Society of Cardiology / American College of Cardiology Definition of Myocardial Infarction** **Reference: Myocardial infarction redefined- a consensus document of the Joint European Society of Cardiology /** **American College of Cardiology Committee for the redefinition of myocardial infarction. Euro Heart Journal. 2000;** **21:1502-1513.(altered)]**

Appendix 1 - classification of data format

Format

This column identifies to the supplier the type of storage and the type of processing required for the field.

n1 or n2, etc,	The 'n' indicates the field is numeric. The '1' indicates the maximum length of the value. If 'n1' or 'n2' appears on its own, it will be a numeric value, for example a count. See also 'Code'.
n3.1	The 'n' indicates the field is numeric. The '3.1' indicates the value may have up to three integer place and one decimal place.
An7 or an100, etc	The 'an' indicates the field is alpha numeric. That is, unless otherwise specified, the value may contain any letter, digit or punctuation character. The '7' or '100' indicates the maximum length of the value. If 'an100' appears on its own, the field is free text

Format continued

Code

The field is a classification field whose permitted values are either defined as part of the dataset

The short form is the value listed in the 'Short code' column. The long form is: Short-code full-stop space Text-for-long-code.

For example, the Short code and Text for long code columns for Gender contain:

1 Male
2 Female

Any of the following will be accepted

"1"
"2"
"2. Female"
"1. Male"

The size component of Gender is given as 'n1' which is the minimum to store the value. Implementers who decide to store the long form within their database would need to make their own determination of the storage requirements.

	Volatile	The majority of codes defined within this dataset will remain unchanged for the life of the dataset. However a small number of code lists identify devices and drugs and new values may be added
	Id	The field is an identifier or a code whose permitted values are not defined as part of the dataset or by CCAD. Examples include: NHS Number and GMC number.
	Date	The field is a date. [Date (dd/mm/yyyy)]
	DateTime	The field is a date and a time [DateTime (dd/mm/yyyy hh:mm)]
Format continued	Multivalue	This modifier can only occur in conjunction with 'Code' or 'Id'. The addition of ‘Multivalue’ to the format means that the code value may repeat.

For example: for a field listing previous procedures the codes might be:

0 None

1 Procedure A
2 Procedure B
3 Procedure C
9 Unknown

A patient might have been the subject of none of these procedures, the surgeon might not know the patient's surgical history or the patient might have been the subject of any one, two or all three of the procedures.

For this example field, the maximum number of values is 3 (procedures A, B and C) so implementers would have to determine a method of storing up to three code values in their database. Warning, some multivalue fields are volatile so the maximum number of

For the transfer file, a semi-colon delimiters to hold the separate code values within a single field. For example, if a patient was the subject to procedures A and B, the following would be correct values for the field:

"1;2"
"1. Procedure A;2. Procedure B"

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