Data standards for Atrial fibrillation and Catheter ablation: The European Unified Registries for Heart Care Evaluation and Randomized Trials (EuroHeart)

Developed in collaboration with the European Heart Rhythm Association (EHRA) of the European Society of Cardiology

Table S1. Level 1 variables with the permissible values and definitions

Data field	Permissible value	Definition	Registry
Demographics			
Patient identification number	Numeric	Enter the patient's national identification number or a registry generated unique patient identification number.	Inpatient | Outpatient
Hospital identification number	Numeric	Enter the hospital's unique identification number.	Inpatient | Outpatient
Date of birth	Date	Enter the patient's date of birth.	Inpatient | Outpatient
Sex	• Female • Male	Enter the patient's sex at birth as either female or male.	Inpatient | Outpatient
Patient characteristics and comorbidities			
Height (cm)	• Numeric (0 decimals) • Unknown	Enter the patient's height on admission (in centimetres (cm)).	Inpatient | Outpatient
Weight (kg)	• Numeric (0 decimals) • Unknown	Enter the patient's weight on admission (in kilograms (kg)).	Inpatient | Outpatient
Alcohol intake	• None • ≤2 units per week • 3-13 units per week • ≥14 units per week • Unknown	Enter the patient's usual weekly alcohol consumption. An alcohol unit is equal to 8.0 grams of pure alcohol. Generally, this amount of pure alcohol is found in 25 mL of spirit, half a pint (≈ 280 mL) of beer, whereas a 175 mL glass of wine contains 2 units of alcohol.	Inpatient | Outpatient
Hypertension	• No • Yes • Unknown	Enter whether the patient is known to have a diagnosis of hypertension made by a healthcare professional prior to this care encounter. Hypertension is defined as an office systolic blood pressure values ≥140 mmHg and/or diastolic blood pressure values ≥90 mmHg and includes all grades of hypertension regardless of treatment strategy.[1]	Inpatient | Outpatient
Diabetes mellitus	• No • Diabetes mellitus type 1 • Diabetes mellitus type 2 • Diabetes of other/unspecified type • Unknown	Enter whether the patient is known to have a diagnosis of diabetes mellitus made by a healthcare professional prior to this care encounter. Diabetes mellitus is defined as HbA1c ≥48 mmol/mol (6.5%) or fasting blood glucose ≥7.0 mmol/L or based on random blood glucose/two-hour plasma glucose test ≥11.1 mmol/L (on more than one measurement) and includes all types of diabetes mellitus regardless of treatment strategy.[2]	Inpatient | Outpatient
Prior stroke	Multiple choice: • No	Enter whether the patient is known to have had a stroke prior to this care encounter. More than one option can be selected.	Inpatient | Outpatient

	• Ischaemic stroke • Haemorrhagic stroke • Unspecified stroke • Unknown	Stroke is defined as an acute episode of focal or global neurological dysfunction (lasting for ≥24 hours or until death) caused by an infarction or haemorrhage to the brain, spinal cord, or retina that is resulting in cell damage based on pathological, imaging, or other objective evidence. Stroke does not include nonvascular neurological deficits.[3] • **Ischaemic stroke** is defined as an acute episode of focal, cerebral, spinal, or retinal dysfunction that is caused by central nervous system infarction, where the neurological dysfunction lasts for ≥24 hours. Ischaemic stroke may result in haemorrhage (haemorrhagic transformation). • **Haemorrhagic stroke** is defined as an acute episode of focal or global neurological dysfunction of the brain, spinal cord or retina that is caused by a spontaneous (not traumatic) collection of intraparenchymal, intraventricular, and/or subarachnoid blood, where the neurological dysfunction lasts for ≥24 hours. Haemorrhagic stroke does not include subdural hematomas. • **Unspecified stroke** is defined as an acute episode of focal or global neurological dysfunction that is caused by a presumed infarction or haemorrhage to the central nervous system, where the neurological dysfunction lasts for ≥24 hours but with insufficient information to allow categorisation as either ischaemic or haemorrhagic stroke.	
Prior transient ischaemic attack	• No • Yes • Unknown	Enter whether the patient is known to have had a transient ischaemic attack (TIA) prior to this care encounter. Transient ischaemic attack (TIA) is defined as transient neurological symptoms, likely to be due to focal cerebral or ocular ischaemia, which last less than 24 hours.[4]	Inpatient | Outpatient
Prior extracerebral thromboembolism	Multiple choice: • No • Arterial thromboembolism • Venous thromboembolism • Unknown	Enter whether the patient is known to have had an extracerebral thromboembolic event prior to this care encounter. More than one option can be selected. Extracerebral thromboembolism is defined as thromboembolism in organs other than the brain. This includes arterial thromboembolism and venous thromboembolism. • **Arterial extracerebral thromboembolism** (other than myocardial infarction) involves the arterial bed and is defined as an obstruction which usually is followed by an infarction of arterial beds by embolic material derived from a thrombus from a distant site. It includes conditions such as thromboembolic splenic infarction, acute renal thromboembolism, acute thromboembolic mesenteric ischaemia, and acute thromboembolic limb ischaemia.[5] • **Venous extracerebral thromboembolism** involves the venous bed and is defined as a condition in which a thrombus is formed in a vein, most commonly in the deep veins of the legs or pelvis. This is known as deep vein thrombosis (DVT). The thrombus can dislodge and travel in the blood, particularly to the pulmonary arteries and cause pulmonary embolism (PE).[6]	Inpatient | Outpatient
Vascular disease	Multiple choice: • No • Prior myocardial infarction • Prior percutaneous coronary intervention • Prior coronary artery bypass grafting • Carotid artery disease • Peripheral arterial disease	Enter whether the patient is known to have a diagnosis of vascular disease made by a healthcare professional prior to this care encounter. More than one option can be selected. • **Myocardial infarction** is defined as a documented episode with detection of a rise and/or fall of cardiac troponin with at least one value above the 99th percentile and/or symptoms suggestive of ischaemia, new significant ECG changes, imaging evidence of new loss of viable myocardium or new regional wall motion abnormality in a pattern consistent with an ischaemic aetiology or identification of a coronary thrombus by angiography/ intracoronary	Inpatient | Outpatient

	• Unknown	imaging or by autopsy. History of myocardial infarction also includes episodes with symptoms suggestive of myocardial ischaemia accompanied by presumed new ischaemic ECG changes or ventricular fibrillation; coronary intervention-related myocardial infarction; and coronary artery bypass graft (CABG)-related myocardial infarction.[7] • **Percutaneous coronary intervention (PCI)** is defined as the placement of an angioplasty guidewire, balloon, or other device (e.g. stent, atherectomy, brachytherapy, or thrombectomy catheter) into a native coronary artery or a graft for the purpose of mechanical coronary revascularisation. The assessment of coronary lesion severity by fluoroscopy, intracoronary imaging (e.g. intravascular ultrasonography) or physiology (e.g. fractional flow reserve) is not considered a PCI procedure.[8] • **Coronary artery bypass graft (CABG) surgery** is defined as a procedure that involves sternotomy to bypass diseased segment(s) of the coronary tree using blood vessels derived from other parts of the body and connected to the aorta.[8] • **Carotid artery disease** is defined as a ≥50% stenosis of the extracranial internal carotid artery. Carotid stenosis is either symptomatic if associated with symptoms in the preceding 6 months or asymptomatic if no prior symptoms can be identified or when symptoms occurred >6 months ago.[5] • **Peripheral arterial disease** (other than carotid artery disease) is defined as atherosclerotic peripheral arterial disease in the upper or lower extremities, renal, splenic, mesenteric, and/or abdominal aortic systems. Atherosclerotic peripheral arterial disease can also include claudication, either with exertion or at rest.[5]	
Heart failure	• No • Yes • Unknown	Enter whether the patient is known to have a diagnosis of heart failure made by a healthcare professional prior to this care encounter. Heart failure is defined as documented clinical diagnosis of heart failure, irrespective of the left ventricular ejection fraction.[9]	Inpatient | Outpatient
Prior major bleeding	• No • Yes • Unknown	Enter whether the patient is known to have had a major bleeding event prior to this care encounter. Major bleeding is defined according to the International Society on Thrombosis and Haemostasias (ISTH) criteria and includes fatal bleeding events, symptomatic bleeding in a critical areas or organs (e.g. intracranial, intraspinal, intraocular, retroperitoneal, intra-articular or pericardial, or intramuscular with compartment syndrome), and/or fall in haemoglobin level of ≥20 g/L or transfusion of ≥2 units of blood.[10]	Inpatient | Outpatient
Moderate-severe chronic kidney disease	• No • Yes • Unknown	Enter whether the patient is known to have moderate or severe chronic kidney disease prior to this care encounter. Moderate or severe chronic kidney disease (CKD) is defined as CKD stage 3-5 (glomerular filtration rate [GFR] <60 mL/min/1.73 m^2 or kidney failure) including patients on regular renal dialysis.[11]	Inpatient | Outpatient
Moderate or severe mitral stenosis	• No • Yes • Unknown	Enter whether the patient is known to have ongoing moderate or severe mitral stenosis prior to this care encounter. Moderate to severe mitral stenosis is defined as mitral valve area ≤1.5 cm^2. Echocardiographic evaluation of the mitral valve area using 2-dimensional (2D) planimetry is the preferred method for diagnosing mitral stenosis and for assessing its severity.[12]	Inpatient | Outpatient

Prior heart valve intervention	Multiple choice: • No • Valve replacement (bioprosthetic valve) • Valve replacement (mechanical valve) • Valve repair (not valvuloplasty) • Valvuloplasty • Other • Unknown	Enter whether the patient is known to have had heart valve intervention prior to this care encounter. More than one option can be selected. Heart valve intervention is defined as a documented surgical and/or transcatheter replacement and/or repair of a heart valve.[12]	Inpatient | Outpatient
Prior cardioversion	Multiple choice: • No • Electrical cardioversion • Pharmacological cardioversion • Unknown	Enter whether the patient is known to have had an electrical or pharmacologic cardioversion prior to this care encounter. More than one option can be selected.[13] • **Electrical cardioversion (external or internal)** is defined as a procedure in which direct current (DC) is used to reset the heart's rhythm back to sinus rhythm. • **Pharmacologic cardioversion** is defined as a procedure in which antiarrhythmic medications is used to reset the heart's rhythm back to sinus rhythm.	Inpatient | Outpatient
Prior catheter ablation	Multiple choice: • No • Ablation for atrial fibrillation • Ablation for atrial flutter • Unknown	Enter whether the patient is known to have had a catheter ablation for atrial fibrillation or atrial flutter prior to this care encounter. More than one option can be selected. Catheter ablation for atrial fibrillation (AF) or atrial flutter (AFL) is defined as a procedure in which catheters are inserted through the veins or arteries to the heart, and energy (e.g. radiofrequency, cryo) is delivered to prevent propagation of abnormal AF or AFL.[14] • **Atrial fibrillation (AF)** is defined as a supraventricular tachyarrhythmia with uncoordinated atrial electrical activation and consequently ineffective atrial contraction. The minimum duration of an ECG tracing of AF required to establish the diagnosis of clinical AF is at least 30 seconds, or entire 12-lead ECG. • **Atrial flutter (AFL)** is defined as a supraventricular tachyarrhythmia with coordinated but overly rapid atrial electrical activation, usually with some degree of atrioventricular (AV) node conduction block. The minimum duration of an ECG tracing of AFL required to establish the diagnosis of clinical AFL is at least 30 seconds, or entire 12-lead ECG.	Inpatient | Outpatient
Prior left atrial appendage closure/exclusion	• No • Implantation of left atrial appendage occlusion device • Surgical left atrial appendage closure or exclusion • Unknown	Enter whether the patient is known to have had a left atrial appendage closure or exclusion performed prior to this care encounter. • **Implantation of left atrial appendage (LAA) occlusion device** is defined as implantation of a percutaneous, transcatheter device intended to prevent thrombus embolisation from the LAA.[15] • **Surgical LAA closure or exclusion** is defined as surgical ligation or amputation of the LAA during open-heart or minimally invasive procedure to prevent thrombus embolisation from the LAA.	Inpatient | Outpatient
Atrial fibrillation and atrial flutter characteristics			
Atrial fibrillation or atrial flutter	Multiple choice: • Atrial fibrillation • Atrial flutter	Enter whether the patient is known to have atrial fibrillation (AF) or atrial flutter (AFL) prior to this care encounter or has a new-onset AF or AFL during the current care encounter.[13]	Inpatient | Outpatient

		• **Atrial fibrillation (AF)** is defined as a supraventricular tachyarrhythmia with uncoordinated atrial electrical activation and consequently ineffective atrial contraction. The minimum duration of an ECG tracing of AF required to establish the diagnosis of clinical AF is at least 30 seconds, or entire 12-lead ECG. • **Atrial flutter (AFL)** is defined as a supraventricular tachyarrhythmia with coordinated but overly rapid atrial electrical activation, usually with some degree of atrioventricular (AV) node conduction block. The minimum duration of an ECG tracing of AFL required to establish the diagnosis of clinical AFL is at least 30 seconds, or entire 12-lead ECG.	
Type of atrial fibrillation	• Paroxysmal • Persistent • Long-standing persistent • Permanent • Not defined • Unknown	Enter the type (clinical pattern) of atrial fibrillation.[13] • **Paroxysmal** is defined as atrial fibrillation (AF) that terminates spontaneously or with intervention within 7 days of onset. • **Persistent** is defined as AF that is continuously sustained beyond 7 days, including episodes terminated by cardioversion (drugs or electrical cardioversion) after ≥7 day. • **Long-standing persistent** is defined as continuous AF of >12 months' duration when decided to adopt a rhythm control strategy. • **Permanent** is defined as AF that is accepted by the patient and physician, and no further attempts to restore/maintain sinus rhythm will be undertaken. Permanent AF represents a therapeutic attitude of the patient and physician rather than an inherent pathophysiological attribute of AF, and the term should not be used in the context of a rhythm control strategy with antiarrhythmic drug therapy or AF ablation. Should a rhythm control strategy be adopted, the arrhythmia would be re-classified as long-standing persistent AF.	Inpatient | Outpatient
Duration of atrial fibrillation or atrial flutter	• New-onset • <3 months • 3-6 months • 6-12 months • >12 months • Unknown	Enter the duration since the diagnosis of atrial fibrillation or atrial flutter. Duration of atrial fibrillation (AF) or atrial flutter (AFL) diagnosis is the date when the first rhythm documentation of an ECG tracing showing AF or AFL was made. By convention, an episode lasting at least 30 seconds is diagnostic for clinical AF or AFL. New-onset is defined as AF or AFL that is not diagnosed before this encounter. If the patient is known to have both AF and AFL, select the duration of the arrhythmia that was diagnosed first.	Inpatient | Outpatient
Admission/visit details			
Type of encounter	• Acute hospital admission • Planned hospital admission • Unplanned outpatient encounter • Planned outpatient encounter	Enter the clinical setting of the current episode of care. • **Acute hospital admission** is defined as hospital admission where atrial fibrillation or atrial flutter is the main or the major cause for hospitalisation, and that the length of stay is at least 24 hours (or extends over a calendar date if the hospital admission and discharge times are unavailable). • **Planned hospital admission** is defined as a planned encounter in a hospital setting for an intervention (e.g. catheter ablation) or treatment (e.g. medical optimisation). • **Unplanned outpatient encounter** is defined as an unplanned visit in an outpatient setting such as a clinic for urgent input (e.g. cardioversion), but without hospital admission. • **Planned outpatient encounter** is defined as a planned visit in an outpatient setting or community review by a qualified healthcare professional.	Inpatient | Outpatient
Admission/visit date	Date	Enter the date when the patient arrived in the hospital or had an outpatient visit.	Inpatient | Outpatient

EHRA score	• EHRA score 1 (none) • EHRA score 2a (mild) • EHRA score 2b (moderate) • EHRA score 3 (severe) • EHRA score 4 (disabling) • Unknown	Enter the patient's EHRA (European Heart Rhythm Association) score at the time of presentation for the current episode of care.[16] The EHRA symptom scale is a physician-assessed tool for quantification of atrial fibrillation (AF)/atrial flutter (AFL)-related symptoms that is used to guide symptom-driven AF/AFL treatment decisions. • **EHRA score 1 (no symptoms)** is defined as atrial fibrillation (AF) or atrial flutter (AFL) that does not cause any symptoms. • **EHRA score 2a (mild symptoms)** is defined as normal daily activity not affected by symptoms related to AF/AFL. • **EHRA score 2b (moderate symptoms)** is defined as normal daily activity not affected by symptoms related to AF/AFL, but patient troubled by symptoms. • **EHRA score 3 (severe symptoms)** is defined as normal daily activity affected by symptoms related to AF/AFL. • **EHRA score 4 (disabling symptoms)** is defined as normal daily activity discontinued.	Inpatient | Outpatient
ECG, atrial rhythm	• Sinus rhythm • Atrial fibrillation • Atrial flutter • Atrial paced rhythm • Other • Unknown	Enter the dominating atrial rhythm according to the first recorded ECG during the current episode of care. For outpatient visits enter the atrial rhythm according to the last recorded ECG within one month before or during the visit. The first option that best describes the findings should be selected. • **Sinus rhythm** is defined as a finding on the ECG of an atrial rhythm, which originates from the sinoatrial node. Sinus rhythm also includes AV-block type I and sinus-brady/tachycardia without circulatory effect. • **Atrial fibrillation (AF**) is defined as a supraventricular tachyarrhythmia characterised by uncoordinated atrial activity with consequent deterioration of atrial mechanical function. On the ECG, AF is characterised by the replacement of consistent P waves with rapid oscillations or fibrillation waves that vary in amplitude, shape and timing, associated with an irregular, frequently rapid ventricular response when atrioventricular conduction is intact. • **Atrial flutter (AFL**) is defined as a cardiac arrhythmia arising in the atrium, which has a regular rate typically between 250 and 350 beats per minute in the absence of antiarrhythmic drugs. • **Atrial paced rhythm** is defined as atrial rhythm initiated by an electrical impulse from a mechanical cardiac pacemaker with electrode impulse in the atrium. On the ECG, atrial paced rhythm is characterised by pacing spike preceding the P waves. • **Other** includes other atrial rhythm disturbances, e.g. atrial tachycardia.	Inpatient | Outpatient
ECG, ventricular conduction	• Normal • Left bundle branch block (LBBB) • Right bundle branch block (RBBB) • Ventricular paced rhythm • Ventricular tachycardia • Other • Unknown	Enter the dominating ventricular conduction according to the first recorded ECG during the current episode of care. For outpatient visits enter the dominating ventricular conduction according to the last recorded ECG within one month before or during the visit. The first option that best describes the findings should be selected. • **Normal** is defined as no presence of QRS abnormalities. • **Left bundle branch block (LBBB)** is defined as QRS duration of ≥120 ms, delayed onset of intrinsicoid deflection in leads I, V5, and V6 ≥60 ms; broad and notched or slurred R waves in I, aVL, V5, and V6; RS or QS complexes in right precordial leads; ST segment and T waves in opposite polarity to the major QRS deflection.	Inpatient | Outpatient

		• **Right bundle branch block (RBBB)** is defined as QRS duration of ≥120 ms, rsR' or rSR' complexes in V1 and V2, delayed onset of intrinsicoid, deflection in V1 and V2 >50 ms, broad, slurred S wave in I, V5, and V6 secondary STT wave changes. • **Ventricular paced rhythm** is defined as cardiac rhythm initiated by an electrical impulse from a mechanical cardiac pacemaker with electrode impulse in the ventricle. • **Ventricular tachycardia** is defined as a sustained tachycardia ≥30 s in duration and/or requires termination due to hemodynamic compromise in <30 s. • **Other** includes other ventricular conduction changes, e.g. incomplete RBBB, incomplete LBBB, not described above.	
ECG, heart rate (beats/minute)	• Numeric (0 decimals) • Unknown	Enter the heart rate (in beats/minute) according to the first recorded ECG during the current episode of care. For outpatient visits enter the heart rate according to the last recorded ECG within one month before or during the visit.	Inpatient | Outpatient
Haemoglobin (g/L)	• Numeric (0 decimals) • Unknown	Enter the first recorded level of haemoglobin collected during the hospital stay. For outpatient visits enter the most recent measurement within one month before or during the visit (in g/L).	Inpatient | Outpatient
Creatinine (µmol/L)	• Numeric (0 decimals) • Unknown	Enter the first recorded level of creatinine collected during the hospital stay. For outpatient visits enter the most recent measurement within one month before or during the visit (in µmol/L).	Inpatient | Outpatient
Imaging assessment of the myocardium			
Left ventricular ejection fraction (%)	• Numeric (0 decimals) • Unknown If numeric value unknown: • ≥50% • 41-49% • 30-40% • <30% • Unknown	Enter the patient's left ventricular ejection fraction (LVEF) as recorded on the most recent imaging evaluation (in percentage). Enter the numerical result or percentage range select that best describes the patient's LVEF or select unknown if the LVEF is unknown.	Inpatient | Outpatient
Left atrium (LA) volume (mL)	• Numeric (1 decimals) • Unknown	Enter the left atrium (LA) volume on the most recent echocardiogram (in mL). LA volume is on echocardiography based on 2-dimensional imaging (2D), using the LA areas traced in the 2- and 4-chamber views as calculated by the standardised methods (e.g., Simpson's method of disks).	Inpatient | Outpatient
In-hospital management			
Cardioversion during current admission/visit	• No • Electrical cardioversion • Pharmacologic cardioversion • Unknown	Enter whether the patient underwent an electrical or pharmacologic cardioversion during the current care encounter. More than one option can be selected.[13] • **Electrical cardioversion (external or internal)** is defined as a procedure in which direct current (DC) is used to reset the heart's rhythm back to sinus rhythm. • **Pharmacologic cardioversion** is defined as a procedure in which antiarrhythmic medications is used to reset the heart's rhythm back to sinus rhythm.	Inpatient | Outpatient

Pharmacologic cardioversion, medication used	• Flecainide • Propafenone • Vernakalant • Amiodarone • Ibutilide • Other • Unknown	Enter the antiarrhythmic medication administered for pharmacologic cardioversion during the current care encounter. More than one option can be selected.	Inpatient | Outpatient
Left atrial appendage closure/exclusion during current admission/visit	• No • Implantation of left atrial appendage occlusion device • Surgical left atrial appendage closure or exclusion • Unknown	Enter whether left atrial appendage closure or exclusion was performed during the current care encounter. • **Implantation of left atrial appendage (LAA) occlusion device** is defined as implantation of a percutaneous, transcatheter device intended to prevent thrombus embolisation from the LAA.[15] • **Surgical LAA closure or exclusion** is defined as surgical ligation or amputation of the LAA during open-heart or minimally invasive procedure to prevent thrombus embolisation from the LAA.	Inpatient
Left atrial appendage occlusion device	• Watchman • Watchman FLX • WaveCrest • Amplatzer Cardiac Plug • Amplatzer Amulet • Ultraseal • LAmbre • Lariat • Other • Unknown	Enter the name of the left atrial appendage occlusion device that was implanted during the current care encounter.	Inpatient
Catheter ablation			
Catheter ablation during current admission/visit	Multiple choice: • No • Atrial fibrillation • Atrial flutter, CTI-dependent • Atrial flutter, non-CTI dependent • Other • Unknown	Enter whether a catheter ablation for atrial fibrillation or atrial flutter was attempted during the current care encounter. More than one option can be selected. Catheter ablation for atrial fibrillation (AFL) or atrial flutter (AFL) is defined as a procedure in which catheters are inserted through the veins or arteries to the heart, and energy (e.g. radiofrequency, cryo) is delivered to prevent propagation of abnormal AF or AFL rhythm. If AV node ablation is performed in patients with permanent pacemaker, please select other here and “AV node ablation” in the variable “catheter ablation approach and lesion location”.[14] • **Atrial fibrillation (AF)** is defined as a supraventricular tachyarrhythmia with uncoordinated atrial electrical activation and consequently ineffective atrial contraction. The minimum duration of an ECG tracing of AF required to establish the diagnosis of clinical AF is at least 30 seconds, or entire 12-lead ECG.	Inpatient

		Atrial flutter (AFL) is defined as a supraventricular tachyarrhythmia with coordinated but overly rapid atrial electrical activation, usually with some degree of atrioventricular (AV) node conduction block. The minimum duration of an ECG tracing of AFL required to establish the diagnosis of clinical AFL is at least 30 seconds, or entire 12-lead ECG. • **Cavotricuspid isthmus (CTI)-dependent AFL (also typical or type I AFL)** is defined as a re-entrant tachycardia following a counter-clockwise (typical) or clockwise (reverse typical) rotation pattern around the tricuspid annulus resulting in a sawtooth pattern of atrial activation on inferior ECG leads. This is amenable to curative catheter ablation of the CTI. • **Non-CTI dependent AFL** is defined as macro-re-entrant tachycardias dependent upon an atrial scar (e.g. following a cardiac surgery involving the atrium) that creates conduction block and a central obstacle for re-entry.	
Procedure date	Date	Enter the date when catheter ablation was attempted during the current care encounter.	Inpatient
Catheter ablation approach and lesion location	Multiple choice: • Pulmonary vein isolation • Left atrial linear lesion • Right atrial linear lesion • Fractionated electrogram sites, left atrium • Fractionated electrogram sites, right atrium • Ganglionated plexi ablation • Left atrial scar ablation • Rotor/dominant frequency ablation • AV node ablation • Other • Unknown	Enter the approach and lesion location during the catheter ablation. More than one option can be selected.	Inpatient
Pulmonary vein isolation, anatomy	Multiple choice: • 4 PV (LSPV, LIPV, RSPV, RIPV) • Common ostium LPV + (RSPV, RIPV) • Common ostium RPV + (LSPV, LIPV) • Additional PV • Other • Unknown	Enter the anatomy of the pulmonary veins (PV). For patients with normal pulmonary anatomy and four separate PV, select the option 4 PV (left superior pulmonary vein [LSPV], left inferior pulmonary vein [LIPV], right superior pulmonary vein [RSPV], right inferior pulmonary vein [RIPV]). For patients with a common ostium, select whether it is on the left pulmonary vein (LPV) and/or the right pulmonary vein (RPV). For patients with an additional pulmonary vein(s) with an ostium in the left atrium, other than the LSPV, LIPV, RSPV and RIPV, select the option additional PV. Additional PV can be selected in addition to all other options. • **Common ostium** is defined as anomalous pulmonary venous drainage where two or more separate pulmonary veins are fused before entering the left atrium. • **Additional pulmonary vein(s)** is defined as one or more extra pulmonary veins in addition to the four common pulmonary veins (LSPV, LIPV, RSPV and RIPV).	Inpatient
Pulmonary vein isolation, veins targeted	Multiple choice: • LSPV • LIPV • RSPV • RIPV • Common ostium LPV • Common ostium RPV	Enter the pulmonary veins targeted during pulmonary vein isolation. Select the pulmonary veins targeted. More than one option can be selected.	Inpatient

	• Additional PV • Unknown		
Pulmonary vein isolation, assessment of entrance or exit block	Multiple choice: • No • Entrance block • Exit block • Unknown	Enter if assessment of entrance and/or exit block during pulmonary vein isolation was performed. More than one option can be selected. • **Entrance block** is defined as the inability of electrical activity in the left atrium to reach the pulmonary veins. • **Exit block** is defined as the inability of electrical activity in the pulmonary veins to reach the left atrium.	Inpatient
Pulmonary vein isolation, achievement of entrance or exit block	Multiple choice: • LSPV, entrance block • LSPV, exit block • LIPV, entrance block • LIPV, exit block • RSPV, entrance block • RSPV, exit block • RIPV, entrance block • RIPV, exit block • Common ostium LPV, entrance block • Common ostium LPV, exit block • Common ostium RPV, entrance block • Common ostium RPV, exit block • Additional PV, entrance block • Additional PV, exit block • Unknown	Enter the pulmonary veins isolated with achievement of entrance and/or exit block during pulmonary vein isolation. Select the pulmonary veins in which entrance and/or exit block was achieved. More than one option can be selected. • **Entrance block** is defined as the inability of electrical activity in the left atrium to reach the pulmonary veins. • **Exit block** is defined as the inability of electrical activity in the pulmonary veins to reach the left atrium.	Inpatient
Left atrial linear lesion	Multiple choice: • Roof line • Mitral isthmus ablation • Left posterior wall ablation • Left atrial appendage ablation • Other left atrial linear lesion • Unknown	Enter the approach and lesion location during left atrial linear lesion catheter ablation. More than one option can be selected.	Inpatient
Left atrial linear lesion, complete conduction block	Multiple choice: • Roof line block • Mitral isthmus ablation block • Left posterior wall ablation block • Left atrial appendage ablation block • Other left atrial linear lesion block • Unknown	Enter whether complete conduction block was achieved across the left atrial linear lesion(s). Select the left atrial linear lesions in which complete conduction block was achieved. More than one option can be selected. Complete conduction block is defined as the inability of electrical activity to pass the linear lesion.	Inpatient
Right atrial linear lesion	Multiple choice: • Superior vena cava • Cavo-tricuspid isthmus (CTI) ablation	Enter the approach and lesion location during right atrial linear lesion catheter ablation. More than one option can be selected.	Inpatient

	• Other right atrial linear lesion • Unknown [99]		
Right atrial linear lesion, complete conduction block	Multiple choice: • Superior vena cava block • Cavo-tricuspid isthmus (CTI) ablation block • Other right atrial linear lesion block • Unknown [99]	Enter whether complete conduction block was achieved across the right atrial linear lesion(s). Select the right atrial linear lesions in which complete conduction block was achieved. More than one option can be selected. Complete conduction block is defined as the inability of electrical activity to pass the linear lesion.	Inpatient
Energy source	Multiple choice: • Radiofrequency • Cryo • Ultrasound • Laser • Pulsed field • Other • Unknown	Enter the energy source(s) that was used during the catheter ablation. More than one option can be selected.	Inpatient
Discharge/visit details			
In-hospital death	• No • Yes	Enter whether the patient died during the hospital stay.	Inpatient | Outpatient
Discharge date / Death date	Date	Enter the date when the patient was discharged from the hospital or died during this hospital stay.	Inpatient | Outpatient
Periprocedural or in-hospital events	Multiple choice: • No • Cardiac arrest • Bradycardia requiring pacemaker implantation • Myocardial infarction • Valve damage • Infective endocarditis • Pericarditis • Pericardial effusion requiring pericardiocentesis • Anaphylactic reaction • Sepsis • Pseudoaneurysm • Arteriovenous fistula • Atrial-oesophageal fistula • Phrenic nerve damage • Major bleeding • Stroke	Enter whether any periprocedural or in-hospital events occurred before discharge. More than one option can be selected. • **Cardiac arrest** is defined as sudden cessation of cardiac activity or haemodynamic compromise with ventricular fibrillation, rapid ventricular tachycardia or bradycardia resulting in loss of consciousness, pulseless electrical activity, or asystole requiring cardiopulmonary resuscitation with at least two chest compressions, defibrillation or other rapid interventions (e.g. emergency pacing or pericardiocentesis) without which the condition would almost certainly lead to death. • **Bradycardia requiring pacemaker implantation** is defined as a new and excessive slowness in cardiac activity which requires an unplanned implantation of temporary or permanent cardiac pacemaker.[17] • **Myocardial infarction** is defined as a documented episode with detection of a rise and/or fall of cardiac troponin with at least one value above the 99th percentile and/or symptoms suggestive of ischaemia, new significant ECG changes, imaging evidence of new loss of viable myocardium or new regional wall motion abnormality in a pattern consistent with an ischaemic aetiology or identification of a coronary thrombus by angiography/ intracoronary imaging or by autopsy. Myocardial infarction can be periprocedural (<72 hours after the procedure) or spontaneous (>72 hours after the index procedure).[7] • **Valve damage** is defined as an injury to one or more of the heart valves which can cause regurgitation, and is a complication related to catheter ablation.	Inpatient | Outpatient

- Transient ischemic attack (TIA)
- Extracerebral thromboembolism
- Pulmonary vein stenosis
- Pleural effusion requiring intervention
- Pneumothorax requiring intervention
- Other
- Unknown

- **Infective endocarditis** is defined as an inflammation of the endocardium, usually involving the heart valves, and is defined according to the Duke criteria.[18]
- **Pericarditis** is defined as a clinical diagnosis of an inflammation in the pericardium which may be characterised by symptoms (e.g. chest pain) and/or ECG changes, and may or may not be associated with pericardial effusion.[19]
- **Pericardial effusion requiring pericardiocentesis** is a cardiac perforation or a perforation of the aortic annulus or aorta which results in blood accumulation in the pericardial space with or without tamponade. When pericardial effusion compromises cardiac filling, the condition requires an intervention such as pericardiocentesis.
- **Anaphylactic reaction** is defined as a severe, life-threatening, generalised, or systemic hypersensitivity reaction. It is characterised by a rapid development of life-threatening symptoms such as airway compromise and/or circulatory collapse following an exposure to a substance (e.g. contrast).[20]
- **Sepsis** is defined as a life-threatening organ dysfunction due to an infection and the subsequent dysregulated host immune response.[21]
- **Pseudoaneurysm or false aneurysm (iatrogenic)** is defined as an abnormal outpouching or dilatation of the artery resulting in accumulation of blood between the tunica media and tunica adventitia as a complication to an interventional procedure.[14]
- **Arteriovenous fistula (iatrogenic)** is defined as an abnormal connection between an artery and a vein as a complication to an interventional procedure.[14]
- **Atrial-oesophageal fistula (iatrogenic)** is defined as a communication between the left atrium and the oesophagus, and is a complication related to catheter ablation.[14]
- **Phrenic nerve damage (iatrogenic)** is defined as an injury to the phrenic nerve which can cause diaphragmatic paresis and patient discomfort, and is a complication related to catheter ablation.[14]
- **Major bleeding** is defined according to the International Society on Thrombosis and Haemostasias (ISTH) criteria and includes fatal bleeding events, symptomatic bleeding in a critical areas or organs (e.g. intracranial, intraspinal, intraocular, retroperitoneal, intra-articular or pericardial, or intramuscular with compartment syndrome), and/or fall in haemoglobin level of ≥20 g/L or transfusion of ≥2 units of blood.[10]
- **Stroke** is defined as an acute episode of focal or global neurological dysfunction (lasting for ≥24 hours or until death) caused by an infarction or haemorrhage to the brain, spinal cord, or retina that is resulting in cell damage based on pathological, imaging, or other objective evidence. Stroke does not include nonvascular neurological deficits. Ischaemic stroke is defined as an acute episode of focal, cerebral, spinal, or retinal dysfunction that is caused by central nervous system infarction, where the neurological dysfunction lasts for ≥24 hours. Ischaemic stroke may result in haemorrhage (haemorrhagic transformation). Haemorrhagic stroke is defined as an acute episode of focal or global neurological dysfunction of the brain, spinal cord or retina that is caused by a spontaneous (not traumatic) collection of intraparenchymal, intraventricular, and/or subarachnoid blood, where the neurological dysfunction lasts for ≥24 hours. Haemorrhagic stroke does not include subdural hematomas. Undetermined stroke is defined as an acute episode of focal or global neurological dysfunction that is caused by a presumed infarction or haemorrhage to the central nervous system, where the neurological dysfunction lasts for ≥24 hours but with insufficient information to allow categorisation as either ischaemic or haemorrhagic stroke.[3]

		• **Transient ischaemic attack (TIA)** is defined as transient neurological symptoms, likely to be due to focal cerebral or ocular ischaemia, which last less than 24 hours.[4] • **Extracerebral thromboembolism** is defined as thromboembolism in organs other than the brain. This includes arterial thromboembolism and venous thromboembolism. Arterial extracerebral thromboembolism (other than myocardial infarction) involves the arterial bed and is defined as an obstruction which usually is followed by an infarction of arterial beds by embolic material derived from a thrombus from a distant site. It includes conditions such as thromboembolic splenic infarction, acute renal thromboembolism, acute thromboembolic mesenteric ischaemia and acute thromboembolic limb ischaemia. Venous extracerebral thromboembolism involves the venous bed and is defined as a condition in which a thrombus is formed in a vein, most commonly in the deep veins of the legs or pelvis. This is known as deep vein thrombosis (DVT). The thrombus can dislodge and travel in the blood, particularly to the pulmonary arteries and cause pulmonary embolism (PE).[5,6] • **Pulmonary vein stenosis (iatrogenic)** is defined as lumen size reduction of one or more pulmonary veins that, when hemodynamically significant, may raise lobar capillary pressure, and is a complication related to catheter ablation. • **Pleural effusion requiring intervention** is defined as abnormal accumulation of excessive fluid in the pleural space which requires thoracentesis. • **Pneumothorax requiring intervention** is defined as abnormal accumulation of excessive air in the pleural space which requires needle decompression or insertion of a chest tube.	
ECG at discharge, atrial rhythm	• Sinus rhythm • Atrial fibrillation • Atrial flutter • Atrial paced rhythm • Other • Unknown	Enter the dominating atrial rhythm according to the last recorded ECG during the current care encounter. • **Sinus rhythm** is defined as a finding on the ECG of an atrial rhythm, which originates from the sinoatrial node. Sinus rhythm also includes AV-block type I and sinus-brady/tachycardia without circulatory effect. • **Atrial fibrillation (AF)** is defined as a supraventricular tachyarrhythmia characterised by uncoordinated atrial activity with consequent deterioration of atrial mechanical function. On the ECG, AF is characterised by the replacement of consistent P waves with rapid oscillations or fibrillation waves that vary in amplitude, shape and timing, associated with an irregular, frequently rapid ventricular response when atrioventricular conduction is intact. • **Atrial flutter (AFL)** is defined as a cardiac arrhythmia arising in the atrium, which has a regular rate typically between 250 and 350 beats per minute in the absence of antiarrhythmic drugs. • **Atrial paced rhythm** is defined as atrial rhythm initiated by an electrical impulse from a mechanical cardiac pacemaker with electrode impulse in the atrium. On the ECG, atrial paced rhythm is characterised by pacing spike preceding the P waves. • **Other** includes other atrial rhythm disturbances, e.g. atrial tachycardia.	Inpatient | Outpatient
Rhythm/rate control strategy	• No strategy planned • Rhythm control strategy • Rate control strategy • Unknown	Enter whether rhythm or rate control strategy is planned for the patient.[13] • **Rhythm control strategy** is defined as attempts to restore and maintain sinus rhythm, and may engage a combination of treatment approaches, including cardioversion, antiarrhythmic medication, and catheter/surgical ablation. • **Rate control strategy** is defined as attempts to maintain adequate ventricular rate in patients with atrial fibrillation and/or atrial flutter.	Inpatient | Outpatient

CHA_2DS_2-VASc score	Automatically calculated: • Numeric (0 decimals) • Unknown	Enter the CHA_2DS_2-VASc score (automatically calculated). The CHA_2DS_2-VASc for risk prediction of stroke or thromboembolism in patients with atrial fibrillation or atrial flutter includes the following predictors:[22] • Congestive heart failure (1 point) • Hypertension (1 point) • Age ≥75 years (2 points) • Diabetes mellitus (1 point) • History of stroke, transient ischemic attack (TIA) or thromboembolism (2 points) • Vascular disease (prior myocardial infarction, peripheral artery disease or aortic plaque) (1 point) • Age 65-74 years (1 point) • Female sex (1 point)	Inpatient | Outpatient
Acetylsalicylic acid (aspirin)	• No • Yes • Unknown	Enter whether the patient was discharged on acetylsalicylic acid (aspirin).	Inpatient | Outpatient
$P2Y_{12}$ inhibitors	• No • Clopidogrel • Prasugrel • Ticagrelor • Other • Unknown	Enter whether the patient was discharged on $P2Y_{12}$ inhibitors.	Inpatient | Outpatient
Oral anticoagulants	• No • Vitamin K antagonist • Dabigatran etexilate • Rivaroxaban • Apixaban • Edoxaban • Other • Unknown	Enter whether the patient was discharged on oral anticoagulants. Vitamin K antagonists include warfarin.	Inpatient | Outpatient
Oral anticoagulants, daily dosage (mg)	• Numeric (0 decimals) • Unknown	Enter the total daily dose of oral anticoagulants at the time of discharge (in mg).	Inpatient | Outpatient
Oral anticoagulants, contraindication	Multiple choice: • No • Uncontrolled blood pressure • Severe thrombocytopenia • Bleeding tendency or predisposition • Active or recent major bleeding • Alcohol excess • Patient choice • Other	Enter the reason for not prescribing oral anticoagulants to a patient with indication for treatment. • **Uncontrolled blood pressure** is defined as blood pressure that is inadequately treated.[1] • **Severe thrombocytopenia** is defined as a platelet count below <50,000/µL (50 x 10^9/L) and may be associated with a variety of conditions including life-threatening bleeding or thrombosis. • **Bleeding tendency or predisposition** is defined as has conditions associated with bleeding risk, e.g. gastric ulcer, renal or liver disease.	Inpatient | Outpatient

	• Unknown	• **Active or recent major bleeding** is defined as the occurrence or history of major bleeding within the last 3 months. Major bleeding is defined according to the International Society on Thrombosis and Haemostasias (ISTH) criteria and includes fatal bleeding events, symptomatic bleeding in a critical areas or organs (e.g. intracranial, intraspinal, intraocular, retroperitoneal, intra-articular or pericardial, or intramuscular with compartment syndrome), and/or fall in haemoglobin level of ≥20 g/L or transfusion of ≥2 units of blood. • **Alcohol excess** is defined as consumption of ≥14 units of alcohol on a weekly basis.[10]	
Beta blockers	• No • Yes • Unknown	Enter whether the patient was discharged on beta blockers.	Inpatient | Outpatient
Digitalis	• No • Yes • Unknown	Enter whether the patient was discharged on digitalis.	Inpatient | Outpatient
Calcium channel antagonists	Multiple choice: • No • Diltiazem • Verapamil • Amlodipine • Nifedipine • Lercanidipine • Other • Unknown	Enter whether the patient was discharged on calcium channel antagonists. More than one option can be selected.	Inpatient | Outpatient
Antiarrhythmic drugs	Multiple choice: • No • Amiodarone • Flecainide • Propafenone • Dronedarone • Sotalol • Disopyramide • Quinidine • Ivabradine • Other • Unknown	Enter whether the patient was discharged on antiarrhythmic drugs. More than one option can be selected. Beta blockers, calcium channels antagonists and digitalis are entered separately.	Inpatient | Outpatient
Angiotensin-converting enzyme inhibitors	• No • Yes • Unknown	Enter whether the patient was discharged on angiotensin-converting enzyme (ACE) inhibitors. For combination drugs, enter details about both drug classes.	Inpatient | Outpatient
Angiotensin II receptor blockers	• No • Yes • Unknown	Enter whether the patient was discharged on angiotensin II receptor blockers (ARB). For combination drugs, enter details about both drug classes. Angiotensin receptor-neprilysin inhibitors are selected separately.	Inpatient | Outpatient

Angiotensin receptor-neprilysin inhibitors	• No • Yes • Unknown	Enter whether the patient was discharged on angiotensin receptor-neprilysin inhibitors (ARNI). Angiotensin II receptor blockers, other than ARNI, are selected separately.	Inpatient | Outpatient
Mineralocorticoid receptor antagonists	• No • Yes • Unknown	Enter whether the patient was discharged on mineralocorticoid receptor antagonists (MRA).	Inpatient | Outpatient
Sodium-glucose cotransporter-2 inhibitors	• No • Yes • Unknown	Enter whether the patient was discharged on sodium-glucose cotransporter-2 (SGLT2) inhibitors. For combination drugs, enter details about both drug classes.	Inpatient | Outpatient

Table S2. Level 2 variables with the permissible values and definitions

Data field	Permissible value	Definition	Registry
Demographics			
Forename	String	Enter the patient's forename.	Inpatient | Outpatient
Surname(s)	String	Enter the patient's surname(s).	Inpatient | Outpatient
Gender	• Female • Male • Non-binary	Enter the patient's current self-identified gender. Non-binary includes all other gender identities that are not exclusively masculine or feminine.	Inpatient | Outpatient
Ethnicity	• White • Black • Asian • Hispanic or Latino • Arab • Mixed • Not stated • Other • Unknown	Enter the patient's ethnic group as perceived by the patient. • **White** includes white European or any other white background. • **Black** includes African, African American, Caribbean, or any other black background. • **Asian** includes Chinese, Indian, Pakistani, Bangladeshi, or any other Asian background. • **Hispanic or Latino** includes Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin. • **Arab** includes people who self-identify as Arabs, e.g. Middle Eastern or North African. • **Mixed** includes White and Black Caribbean, White and Black African, White and Asian, or any other mixed background. • **Not stated** includes patients who cannot or do not prefer to state their ethnic background. • **Other** includes any other ethnic group not listed above.	Inpatient | Outpatient
Postal code	• String • Unknown	Enter the postal code for the patient's current residence.	Inpatient | Outpatient
Patient characteristics and comorbidities			
Smoking status	• Never smoked • Former smoker • Current smoker • Unknown	Enter the patient's tobacco smoking status. • **Never smoked** is defined as a patient who has never smoked tobacco. • **Former smoker** is defined as a patient who stopped smoking tobacco >1 month ago. Occasional smokers are considered former tobacco smokers. • **Current smoker** is defined as a patient who is currently smoking tobacco at a regular basis. • **Unknown** should only be entered if information about tobacco smoking has not been obtained.	Inpatient | Outpatient
Physical activity	• Numeric (light intensity activity), 1 decimal • Numeric (moderate intensity activity), 1 decimal • Numeric (vigorous intensity activity), 1 decimal	Enter how many number of hours during a typical week the patient spends doing mild, moderate, and vigorous physical activity.[23] • Examples of light physical intensity activities include easy walking, light household work for 10 minutes or more.	Inpatient | Outpatient

		• Examples of moderate physical intensity activities include walking with moderate or brisk pace, slow cycling, painting/decorating, vacuuming, gardening (mowing lawn), golf (pulling clubs in trolley), tennis (doubles), ballroom dancing, water aerobics for 10 minutes or more. • Examples of vigorous intensity activities include race-walking, jogging, or running, cycling, heavy gardening (continuous digging or hoeing), swimming laps, tennis (single) for 10 minutes or more	
Education level (years of education)	• Less than high school or equivalent (<9 years) • High school graduate or equivalent (9-12 years) • College/University (>12 years) • Unknown	Enter the highest educational degree the patient has received.	Inpatient | Outpatient
Frailty	• Very fit • Well • Managing well • Slightly limited • Mildly frail • Moderately frail • Severely frail • Very severely frail • Terminally ill • Unknown	Enter the patient's frailty status before this care encounter.[24] • **Very fit** is defined as a patient who is robust, active, energetic and motivated. These patients commonly exercise regularly. They are among the fittest for their age. • **Well** is defined as a patient who has no active disease symptoms but is less fit than patients who are very fit. Often, they exercise or are very active occasionally, e.g. seasonally. • **Managing well** is defined as a patient whose medical problems are well controlled, but who is not regularly active beyond routine walking. • **Slightly limited** is defined as a patient who is not dependent on others for daily help, often symptoms limit activities. A common complaint is being "slowed down", and/or being tired during the day. • **Mildly frail** is defined as a patient whose activities are more evidently limited by the disease, and who needs help in high-order activities of daily life (finances, transportation, heavy housework, medications). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation and housework. • **Moderately frail** is defined as a patient who needs help with all outside activities and with keeping house. Inside, they often have problems with stairs and need help with bathing and might need minimal assistance (cuing, standby) with dressing. • **Severely frail** is defined as a patient who is completely dependent on others for personal care, from whatever cause (physical or cognitive). Even so, they appear stable and not at imminent risk of dying (i.e., within approximately 6 months). • **Very severely frail** is defined as a patient who is completely dependent on others and approaching the end of life. Typically, they could not recover even from a minor illness. • **Terminally ill** is defined as a patient who is approaching the end of life. This category applies to people with a life expectancy <6 months, who are not otherwise evidently frail.	Inpatient | Outpatient
Renal dialysis	• No • Yes • Unknown	Enter whether the patient is on renal dialysis regularly prior to this care encounter. Renal dialysis includes all form of dialysis, e.g. haemodialysis and peritoneal dialysis.[11]	Inpatient | Outpatient
Chronic liver disease	• No • Yes • Unknown	Enter whether the patient is known to have a diagnosis of chronic liver disease made by a healthcare professional prior to this care counter. Chronic liver disease, regardless of degree and treatment status, is defined as a set of diseases	Inpatient | Outpatient

		characterised by a decrease in the hepatic function because of chronic inflammation or damage to the liver. In advanced stage, chronic liver diseases often lead to the development of liver cirrhosis.[25]	
Chronic obstructive pulmonary disease	• No • Yes • Unknown	Enter whether the patient is known to have a diagnosis of chronic obstructive pulmonary disease (COPD) made by a healthcare professional prior to this care counter. Chronic obstructive pulmonary disease (COPD) is defined as a disease that is characterised by persistent respiratory symptoms and airflow limitation that is due to airway and/or alveolar abnormalities usually caused by significant exposure to noxious particles or gases and influenced by host factors including abnormal lung development and includes all stages of COPD regardless of treatment strategy.[26]	Inpatient | Outpatient
Prior heart valve intervention, position	Multiple choice: • Aortic valve • Mitral valve • Tricuspid valve • Pulmonary valve • Unknown	Enter the heart valve(s) replaced or repaired during the heart valve intervention. More than one option can be selected.	Inpatient | Outpatient
Prior heart valve intervention, type of intervention	Multiple choice: • Open heart valve surgery • Transcatheter aortic valve implantation (TAVI) • MitraClip • Transcatheter tricuspid valve repair • Other • Unknown	Enter the type of heart valve intervention(s) performed prior to this care encounter. More than one option can be selected.[12,27] • **Open heart valve surgery** is a procedure that involves sternotomy to replace or repair one or more heart valves. • **Transcatheter aortic valve implantation (TAVI)** is defined as transcatheter implantation of aortic valve to treat aortic stenosis. • **MitraClip** is a device used to reduce mitral valve regurgitation by attaching the anterior and the posterior mitral valve leaflets by a clip. • **Transcatheter tricuspid valve repair** is a percutaneous intervention on the tricuspid valve using a device to reduce tricuspid valve regurgitation.	Inpatient | Outpatient
Adult congenital heart disease	• No • Yes • Unknown	Enter whether the patient is known to have a diagnosis of adult congenital heart disease made by a healthcare professional prior to this care counter. Adult congenital heart disease (ACHD) is classified into mild, moderate, or severe. Examples of mild ACHD include isolated congenital aortic valve disease and bicuspid aortic disease, isolated congenital mitral valve disease, mild isolated pulmonary stenosis, isolated small atrial septal defect (ASD), ventricular septal defect (VSD), or patent ductus arteriosus (PDA), repaired secundum ASD, sinus venosus defect, VSD, or patent ductus arteriosus without residuae or sequelae, such as chamber enlargement, ventricular dysfunction, or elevated pulmonary artery pressure. Examples of moderate ACHD include anomalous pulmonary venous connection, anomalous coronary artery arising from the pulmonary artery, anomalous coronary artery arising from the opposite sinus, aortic stenosis - subvalvular or supravalvular, atrioventricular septal defect (partial or complete, including primum ASD), ASD secundum (moderate or large unrepaired), coarctation of the aorta, double chambered right ventricle, Ebstein anomaly, Marfan syndrome and related heritable thoracic aortic disease, Turner Syndrome, moderate or large unrepaired PDA, peripheral pulmonary stenosis, moderate or severe pulmonary stenosis (infundibular, valvular, supravalvular), sinus of valsalva	Inpatient | Outpatient

			aneurysm/fistula, sinus venosus defect, tetralogy of Fallot (repaired), transposition of the great arteries after arterial switch operation, or VSD with associated abnormalities. Examples of severe ACHD include any ACHD (repaired or unrepaired) associated with pulmonary vascular disease, any cyanotic CHD (unoperated or palliated), double-outlet ventricle, Fontan circulation, interrupted aortic arch, pulmonary atresia, transposition of the great arteries, univentricular heart, truncus arteriosus, other complex abnormalities of atrioventricular and ventriculoarterial connection.[28]	
Prior heart transplantation	• No • Yes • Unknown		Enter whether the patient is known to have had a heart transplantation prior to this care encounter. Heart transplantation is defined as a surgery in which a failing, diseased heart is replaced with a healthier donor heart.[29]	Inpatient | Outpatient
Sleep apnoea	• No • Yes • Unknown		Enter whether the patient is known to have a diagnosis of sleep apnoea made by a healthcare professional prior to this care counter. Sleep apnoea is defined as repetitive pauses in breathing during sleep caused by airway occlusion (obstructive sleep apnoea) or altered control of breathing (central sleep apnoea).[30,31]	Inpatient | Outpatient
Thyroid disease	• No • Hypothyroidism • Hyperthyroidism • Unknown [99]		Enter whether the patient is known to have or have had a diagnosis of thyroid disease made by a healthcare professional prior to this care counter. More than one option can be selected. Thyroid disease includes thyroid dysfunction and/or enlargement. Thyroid disease is defined as conditions causing thyroid dysfunction and can be broadly divided into those resulting in thyroid gland underactivity (overt and subclinical hypothyroidism) or overactivity (hyperthyroidism). Does not include thyroid cancer.	Inpatient | Outpatient
Cancer	• No • Yes • Unknown		Enter whether the patient is known to have or have had a diagnosis of cancer made by a healthcare professional prior to this care counter. Cancer (malignant tumour) is defined as an abnormal growth of cells in almost any organ or tissue which tend to proliferate in an uncontrolled way and, in some cases, metastasise. Cancer includes both haematologic and solid malignant tumours irrespectively of grade, stage, or treatment.	Inpatient | Outpatient
Mild cognitive impairment or dementia	• No • Yes • Unknown		Enter whether the patient is known to have a diagnosis of mild cognitive impairment or dementia made by a healthcare professional prior to this care encounter. Mild cognitive impairment is defined as objective cognitive impairment on neurocognitive testing in the absence of significant impairment of instrumental activities of daily living (ADL). Dementia is defined as a syndrome affecting higher functions of the brain that impacts ADL due to a decline in the ability to judge, think, plan, and organise. With dementia there is an associated change in behaviour such as emotional lability, irritability, apathy or coarsening of social skills. There must be evidence of decline over time (months or years rather than days or weeks) to make a diagnosis of dementia. There are several types of dementia, e.g. dementia in Alzheimer's disease, vascular dementia, dementia with Lewy bodies, dementia in Parkinson's disease.[32–35]	Inpatient | Outpatient

Prior catheter ablation, approach and ablation lesion location	Multiple choice: • Pulmonary vein isolation • Left atrial linear lesion • Right atrial linear lesion • Fractionated electrogram sites, left atrium • Fractionated electrogram sites, right atrium • Ganglionated plexi ablation • Left atrial scar ablation • Rotor/dominant frequency ablation • AV node ablation • Other • Unknown	Enter the approach and lesion locations applied during prior catheter ablation(s). More than one option can be selected.	Inpatient | Outpatient
Prior catheter ablation, energy source	Multiple choice: • Radiofrequency • Cryo • Ultrasound • Laser • Pulsed field • Other	Enter the energy source(s) applied during prior catheter ablation(s). More than one option can be selected.	Inpatient | Outpatient
Prior surgical ablation	Multiple choice: • No • Surgical ablation for atrial fibrillation • Surgical ablation for atrial flutter • Unknown	Enter whether the patient is known to have had a surgical ablation for atrial fibrillation or atrial flutter prior to this care encounter. More than one option can be selected. Surgical ablation is defined as an open-heart or minimally invasive procedure in which transmural lesions are made or energy (e.g. radiofrequency, cryo) is delivered to prevent propagation of abnormal atrial fibrillation or atrial flutter rhythm. Surgical ablation includes standard, minimally invasive, or hybrid techniques and can either be performed in conjunction with another cardiac surgical procedure or as a standalone procedure.[14]	Inpatient | Outpatient
Prior cardiac therapeutic or monitoring implantable devices	Multiple choice: • No • Transvenous permanent pacemaker • Leadless pacemaker • Transvenous ICD • Subcutaneous ICD • CRT-P • CRT-D • Cardiac contractility modulation device • Baroreflex stimulation device • Ventricular assist device • CardioMEMS • Implantable loop recorder • Other • Unknown	Enter whether the patient is known to have a cardiac device implanted prior to this care encounter. More than one option can be selected.[17] • **Transvenous permanent pacemaker** is defined as an electronic device that is implanted in the subcutaneous tissue and gives the heart an electrical stimulation through wires that are connected to the heart via the venous system. • **Leadless pacemaker** is defined as an electronic device that is implanted directly into the right ventricle using transcatheter approach and gives the heart an electrical stimulation. • **Transvenous implantable cardioverter defibrillator (ICD)** is defined as a device that is used to correct abnormal heartbeat through thin wires that are connected to the heart via the venous system. • **Subcutaneous ICD** is defined as a device that is used to correct abnormal heartbeats through wires that are positioned in the subcutaneous tissue. ICD sends an electrical shock to the heart to restore normal heart rhythm. • **Cardiac resynchronization therapy (CRT) device and pacemaker (CRT-P)** is defined as a biventricular pacemaker that sends electrical stimulation to both ventricles.	Inpatient | Outpatient

		• **CRT and defibrillator (CRT-D)** is defined as a biventricular pacemaker that sends electrical stimulation to both ventricles and is a defibrillator. • **Cardiac contractility modulation device** is defined as an electrical device that provides nonexcitatory electrical signals during the cardiac absolute refractory period to improve contractility. • **Baroreflex stimulation device** is defined as an electrical stimulation technology that modifies the activity of the autonomic nervous system by stimulating the carotid baroreceptor to reduce peripheral resistance. • **Ventricular assist device** is defined as a mechanical pump that support the right, left, or both ventricles. • **CardioMEMS** is defined as an implantable device that allows the remote monitoring of the changes in pulmonary artery pressure. • **Implantable loop recorder** is defined as a device that allows remote rhythm monitoring.	
Health-related quality of life			
Quality of life, assessment	• No • Yes • Unknown	Enter whether the patient's health-related quality of life was assessed during the current care encounter.	Inpatient | Outpatient
Quality of life, assessment tool	Multiple choice: • EuroQol (EQ)-5D • Atrial Fibrillation Effect on QualiTy of life (AFEQT) • Atrial Fibrillation Quality of Life Questionnaire (AFQLQ) • Quality of Life in Atrial Fibrillation (QLAF) • Atrial Fibrillation Severity Scale (AFSS) • Atrial Fibrillation 6 (AF6) • Arrhythmia-Specific questionnaire in Tachycardia and Arrhythmia (ASTA) • Short-Form 12 (SF-12) • Other • Unknown	Enter what tool was used to assess the patient's health-related quality of life during the current care encounter. More than one option can be selected.	Inpatient | Outpatient
Quality of life, results	• Numeric (0 decimals) • Unknown	Enter the results of the patient's health-related quality of life according to the assessment tool.	Inpatient | Outpatient
Admission/visit details			
Acetylsalicylic acid (aspirin) at pre-encounter	• No • Yes • Unknown	Enter whether the patient was regularly taking acetylsalicylic acid (aspirin) prior to this hospital admission or outpatient visit.	Inpatient | Outpatient

$P2Y_{12}$ inhibitors at pre-encounter	• No • Clopidogrel • Prasugrel • Ticagrelor • Other • Unknown	Enter whether the patient was regularly taking $P2Y_{12}$ inhibitors prior to this hospital admission or outpatient visit.	Inpatient | Outpatient
Oral anticoagulants at pre-encounter	• No • Vitamin K antagonist • Dabigatran etexilate • Rivaroxaban • Apixaban • Edoxaban • Other • Unknown	Enter whether the patient was regularly taking oral anticoagulants prior to this hospital admission or outpatient visit. Vitamin K antagonists include warfarin.	Inpatient | Outpatient
Beta blockers at pre-encounter	• No • Yes • Unknown	Enter whether the patient was regularly taking beta blockers prior to this hospital admission or outpatient visit.	Inpatient | Outpatient
Digitalis at pre-encounter	• No • Yes • Unknown	Enter whether the patient was regularly taking digitalis prior to this hospital admission or outpatient visit.	Inpatient | Outpatient
Calcium channel antagonists at pre-encounter	Multiple choice: • No • Diltiazem • Verapamil • Amlodipine • Nifedipine • Lercanidipine • Other • Unknown	Enter whether the patient was regularly taking calcium channel antagonists prior to this hospital admission or outpatient visit. More than one option can be selected.	Inpatient | Outpatient
Antiarrhythmic drugs at pre-encounter	Multiple choice: • No • Amiodarone • Flecainide • Propafenone • Dronedarone • Sotalol • Disopyramide • Quinidine • Ivabradine • Other • Unknown	Enter whether the patient was regularly taking antiarrhythmic drugs prior to this hospital admission or outpatient visit. More than one option can be selected. Beta blockers, calcium channels antagonists and digitalis are entered separately.	Inpatient | Outpatient

Angiotensin-converting enzyme inhibitors at pre-encounter	• No • Yes • Unknown	Enter whether the patient was regularly taking angiotensin-converting enzyme (ACE) inhibitors prior to this hospital admission or outpatient visit. For combination drugs, enter details about both drug classes.	Inpatient | Outpatient
Angiotensin II receptor blockers at pre-encounter	• No • Yes • Unknown	Enter whether the patient regularly was taking angiotensin II receptor blockers (ARB) prior to this hospital admission or outpatient visit. For combination drugs, enter details about both drug classes. Angiotensin receptor-neprilysin inhibitors are selected separately.	Inpatient | Outpatient
Angiotensin receptor-neprilysin inhibitors at pre-encounter	• No • Yes • Unknown	Enter whether the patient regularly was taking angiotensin II receptor blockers (ARNI) prior to this hospital admission or outpatient visit. Angiotensin II receptor blockers, other than ARNI, are selected separately.	Inpatient | Outpatient
Mineralocorticoid receptor antagonists at pre-encounter	• No • Yes • Unknown	Enter whether the patient was regularly taking mineralocorticoid receptor antagonists (MRA) prior to this hospital admission or outpatient visit.	Inpatient | Outpatient
Loop diuretics at pre-encounter	• No • Yes • Unknown	Enter whether the patient was regularly taking loop diuretics prior to this hospital admission or outpatient visit. For combination drugs, enter details about both drug classes.	Inpatient | Outpatient
Non-loop diuretics at pre-encounter	• No • Yes • Unknown	Enter whether the patient was regularly taking non-loop diuretics prior to this hospital admission or outpatient visit. For combination drugs, enter details about both drug classes.	Inpatient | Outpatient
Sodium-glucose cotransporter-1/2 inhibitors pre-encounter	• No • Yes • Unknown	Enter whether the patient regularly was taking sodium-glucose cotransporter-2 (SGLT2) inhibitors prior to this hospital admission or outpatient visit. For combination drugs, enter details about both drug classes.	Inpatient | Outpatient
Oral/subcutaneous antidiabetics at pre-encounter	Multiple choice: • No • Insulin • Metformin • Glucagon-like peptide-1 (GLP-1) analogue • Dipeptidyl peptidase-4 (DPP-4) inhibitor • Sulfonylurea • Repaglinide • Thiazolidinedione • Alpha-glucosidase inhibitor • Other • Unknown	Enter whether the patient was regularly taking oral or subcutaneous antidiabetic medications prior to this hospital admission or outpatient visit. More than one option can be selected. Sodium-glucose cotransporter-2 inhibitors are entered separately.	Inpatient | Outpatient
Lipid lowering treatment at pre-encounter	Multiple choice: • No • Statins	Enter whether the patient was regularly taking any lipid lowering treatment prior to this hospital admission or outpatient visit. More than one option can be selected.	Inpatient | Outpatient

	• Ezetimibe • Fibrates • PCSK9 inhibitors • Other • Unknown		
Current symptoms	Multiple choice: • None • Palpitations • Chest pain • Dyspnoea • Syncope • Dizziness • Fatigue • Other • Unknown	Enter the patient's reported symptoms (if any). More than one option can be selected. • **Palpitations** is defined as patient reported palpitations, felt either in the chest, throat, or neck, as described by the following: heartbeat sensations that feel like pounding or racing, an unpleasant awareness of heartbeat, feeling skipped beats or a pause. • **Chest pain** is defined as chest pain or pressure, jaw pain, arm pain, or other equivalent discomfort suggestive of cardiac ischaemia. • **Dyspnoea** is defined as frequent uncomfortable awareness of breathing in one or both of the following circumstances, resting in a sitting position or during exerting. • **Syncope** is defined as a sudden loss of consciousness with loss of postural tone, not related to anaesthesia, with spontaneous recovery as reported by patient or observer. • **Dizziness** is defined as range of sensations, such as feeling faint, woozy, weak, or unsteady. • **Fatigue** is defined as unusual tiredness and inability to perform usual activities.	Inpatient | Outpatient
NYHA class	• NYHA class I • NYHA class II • NYHA class III • NYHA class IV • Unknown	Enter the patient's NYHA (New York Heart Association Functional Classification) class at the time of presentation for the current episode of care.[9] • **NYHA class I** is defined as no limitations of physical activity. Ordinary physical activity does not cause undue fatigue, palpitations, or dyspnoea. • **NYHA class II** is defined as slight limitation of physical activity. The patient is comfortable at rest. Ordinary physical activity results in fatigue, palpitations, or dyspnoea. • **NYHA class III** is defined as marked limitation of physical activity. The patient is comfortable at rest. Less than ordinary activity causes fatigue, palpitations, or dyspnoea. • **NYHA class IV** is defined as inability to carry on any physical activity without discomfort. Heart failure symptoms are present even at rest or with minimal exertion.	Inpatient | Outpatient
Systolic blood pressure (mmHg)	• Numeric (0 decimals) • Unknown	Enter the patient's first recorded systolic blood pressure (in millimetres of mercury [mmHg]) at the time of presentation for the current episode of care. Systolic blood pressure should be the first pressure recorded by healthcare professionals, including primary care physicians, ambulance personnel or emergency room personnel, during this episode of care.	Inpatient | Outpatient
Diastolic blood pressure (mmHg)	• Numeric (0 decimals) • Unknown	Enter the patient's first recorded diastolic blood pressure (in millimetres of mercury [mmHg]) at the time of presentation for the current episode of care. Diastolic blood pressure should be the first pressure recorded by healthcare professionals, including primary care physicians, ambulance personnel or emergency room personnel, during this episode of care.	Inpatient | Outpatient
NT-proBNP or BNP (ng/L)	• Numeric (0 decimals) • Unknown Additional selection:	Enter the first recorded level of brain natriuretic peptide (BNP) or N-terminal prohormone of brain natriuretic peptide (NT-proBNP) collected during the hospital stay. For outpatient visits enter the most recent measurement within one month before or during the visit (in ng/L).	Inpatient | Outpatient

	• BNP • NT-proBNP		
Troponin, maximum (ng/L)	• Numeric (0 decimals) • Unknown Additional selection: • Troponin T • Troponin I • High-sensitive Troponin T • High-sensitive Troponin I	Enter the maximum recorded level of cardiac troponin during the hospital stay (in ng/L). Only the maximum level of cardiac troponin should be entered, not the first pathological level.	Inpatient
International normalised ratio (INR)	• Numeric (0 decimals) • Unknown	Enter the first recorded level of international normalised ratio (INR) collected during the hospital stay. For outpatient visits enter the most recent measurement within one month before or during the visit.	Inpatient | Outpatient
Thyroid-stimulating hormone (mIE/L)	• Numeric (0 decimals) • Unknown	Enter the first recorded level of thyroid-stimulating hormone (TSH) collected during the hospital stay. For outpatient visits enter the most recent measurement within one month before or during the visit (in mIE/L).	Inpatient | Outpatient
Haemoglobin A1c (mmol/mol)	• Numeric (0 decimals) • Unknown	Enter the first recorded level of haemoglobin A1c (HbA1c) collected during the hospital stay. For outpatient visits the enter the most recent measurement within one month before or during the visit (in mmol/mol).	Inpatient | Outpatient
Imaging assessment of the myocardium			
Left ventricular ejection fraction, assessment date	• Date • Unknown	Enter the date of the most recent assessment of the patient's left ventricular ejection fraction (LVEF).	Inpatient | Outpatient
Diastolic dysfunction	• No • Yes • Unknown	Enter whether the patient has a diastolic dysfunction as recorded on the most recent imaging evaluation. Diastolic dysfunction is a criteria diagnosis based on echocardiographically derived measurements. Echocardiographic features of diastolic dysfunction include left ventricular hypertrophy (relative wall thickness >0.42), left atrial volume index (>34 mL/m^2 [at sinus rhythm]), disturbance of trans-mitral doppler flow (e.g. E/e' >9 [at rest]), and/or raised pulmonary artery systolic pressure (e.g. >35 mmHg).[9]	Inpatient | Outpatient
Hypertrophic cardiomyopathy	• No • Yes • Unknown	Enter whether the patient has a hypertrophic cardiomyopathy as recorded on the most recent imaging evaluation. Hypertrophic cardiomyopathy (HCM) is defined as a wall thickness ≥15 mm in one or more left ventricular (LV) myocardial segments, as measured by any imaging technique (e.g. echocardiography, cardiac magnetic resonance imaging or computed tomography), that is not explained solely by loading conditions. Genetic and non-genetic disorders can present with lesser degrees of wall thickening (13–14 mm); in these cases, the diagnosis of HCM requires evaluation of other features including family history, non-cardiac symptoms and signs, ECG abnormalities, biomarker tests and multi-modality cardiac imaging.[36]	Inpatient | Outpatient

Left atrium (LA) area (cm^2)	• Numeric (1 decimal) • Unknown	Enter the left atrium (LA) area on the most recent echocardiogram (in cm^2). LA area is on echocardiography based on 2-dimensional imaging (2D), using the LA areas traced in the 4-chamber view as calculated by the standardised methods (e.g., Simpson's method of disks).	Inpatient | Outpatient
Right atrium (RA) area (cm^2)	• Numeric (1 decimal) • Unknown	Enter the left atrium (RA) area on the most recent echocardiogram (in cm^2). RA area is on echocardiography based on 2-dimensional imaging (2D), using the RA areas traced in the 4-chamber view as calculated by the standardised methods (e.g., Simpson's method of disks).	Inpatient | Outpatient
Right atrium (RA) volume (mL)	• Numeric (1 decimal) • Unknown	Enter the right atrium (RA) volume on the most recent echocardiogram (in mL). RA volume is on echocardiography based on 2-dimensional imaging (2D), using the RA areas traced in the 2- and 4-chamber views as calculated by the standardised methods (e.g., Simpson's method of disks).	Inpatient | Outpatient
In-hospital management			
Electrical cardioversion, number of shocks	• Numeric (0 decimals) • Unknown	Enter the number of shocks delivered during electrical cardioversion that was performed during the current care encounter. If several electrical cardioversion sessions during the hospital stay or outpatient visit, please enter the total number of shocks delivered accounting all sessions.	Inpatient | Outpatient
Electrical cardioversion, maximal energy delivered (watt)	• Numeric (0 decimals) • Unknown	Enter the maximal energy delivered during electrical cardioversion that was performed during the current care encounter (in watt). If several electrical cardioversion sessions during the hospital stay or outpatient visit, please enter the maximal energy delivered irrespectively of in which session.	Inpatient | Outpatient
Cardioversion, success	• No • Yes • Unknown	Enter whether the cardioversion was successful during the current care encounter. Successful cardioversion is defined as electrical or pharmacologic cardioversion that results in the absence of atrial fibrillation and/or atrial flutter for >10 seconds after cardioversion.[37]	Inpatient | Outpatient
Surgical ablation during current admission/visit	Multiple choice: • No • Surgical ablation for atrial fibrillation • Surgical ablation for atrial flutter • Unknown	Enter whether a surgical ablation was performed for atrial fibrillation or atrial flutter during the current care encounter. More than one option can be selected. Surgical ablation is defined as an open-heart or minimally invasive procedure in which transmural lesions are made or energy (e.g. radiofrequency, cryo) is delivered to prevent propagation of abnormal atrial fibrillation or atrial flutter rhythm. Surgical ablation includes standard, minimally invasive, or hybrid techniques and can either be performed in conjunction with another cardiac surgical procedure or as a standalone procedure.[14]	Inpatient
Implantation of cardiac therapeutic or monitoring implantable device(s) during current admission/visit	Multiple choice: • No • Transvenous permanent pacemaker • Leadless pacemaker • Transvenous ICD	Enter whether a cardiac therapeutic or monitoring devices was implanted during the current care encounter. More than one option can be selected.[17] • **Transvenous permanent pacemaker** is defined as an electronic device that is implanted in the subcutaneous tissue and gives the heart an electrical stimulation through wires that are connected to the heart via the venous system.	Inpatient | Outpatient

	• Subcutaneous ICD • CRT-P • CRT-D • Cardiac contractility modulation device • Baroreflex stimulation device • Ventricular assist device • CardioMEMS • Implantable loop recorder • Other • Unknown	• **Leadless pacemaker** is defined as an electronic device that is implanted directly into the right ventricle using transcatheter approach and gives the heart an electrical stimulation. • **Transvenous implantable cardioverter defibrillator (ICD)** is defined as a device that is used to correct abnormal heartbeat through thin wires that are connected to the heart via the venous system. • **Subcutaneous ICD** is defined as a device that is used to correct abnormal heartbeats through wires that are positioned in the subcutaneous tissue. ICD sends an electrical shock to the heart to restore normal heart rhythm. • **Cardiac resynchronization therapy (CRT) device and pacemaker (CRT-P)** is defined as a biventricular pacemaker that sends electrical stimulation to both ventricles. • **CRT and defibrillator (CRT-D)** is defined as a biventricular pacemaker that sends electrical stimulation to both ventricles and is a defibrillator. • **Cardiac contractility modulation device** is defined as an electrical device that provides nonexcitatory electrical signals during the cardiac absolute refractory period to improve contractility. • **Baroreflex stimulation device** is defined as an electrical stimulation technology that modifies the activity of the autonomic nervous system by stimulating the carotid baroreceptor to reduce peripheral resistance. • **Ventricular assist device** is defined as a mechanical pump that support the right, left, or both ventricles. • **CardioMEMS** is defined as an implantable device that allows the remote monitoring of the changes in pulmonary artery pressure. • **Implantable loop recorder** is defined as a device that allows remote rhythm monitoring.	
Heart valve intervention during current admission/visit	Multiple choice: • No • Valve replacement (bioprosthetic valve) • Valve replacement (mechanical valve) • Valve repair (not valvuloplasty) • Valvuloplasty • Other • Unknown	Enter whether a heart valve intervention was performed during the current care encounter. More than one option can be selected. Heart valve intervention is defined as a surgical or transcatheter replacement or repair of a heart valve.[12]	Inpatient
Heart valve intervention during current admission/visit, position	Multiple choice: • Aortic valve • Mitral valve • Tricuspid valve • Pulmonary valve • Unknown	Enter the heart valve(s) replaced or repaired during the heart valve intervention. More than one option can be selected.	Inpatient
Heart valve intervention during current admission/visit, type of intervention	Multiple choice: • Open heart valve surgery • Transcatheter aortic valve implantation (TAVI) • MitraClip • Transcatheter tricuspid valve repair	Enter the type of heart valve intervention(s) performed during the current care encounter. More than one option can be selected.[12,27] • **Open heart valve surgery** is a procedure that involves sternotomy to replace or repair one or more heart valves. • **Transcatheter aortic valve implantation (TAVI)** is defined as transcatheter implantation of aortic valve to treat aortic stenosis.	Inpatient

	• Other • Unknown	• **MitraClip** is a device used to reduce mitral valve regurgitation by attaching the anterior and the posterior mitral valve leaflets by a clip. • **Transcatheter tricuspid valve repair** is a percutaneous intervention on the tricuspid valve using a device to reduce tricuspid valve regurgitation.	
Catheter ablation			
Procedure status	• Elective • Urgent	Enter the procedure status for the catheter ablation attempted during the current care encounter.	Inpatient
Sedation/general anaesthesia	• Minimal sedation/anxiolysis • Moderate sedation/analgesia (conscious sedation) • Deep sedation/analgesia • General anaesthesia • Unknown	Enter the type of sedation/general anaesthesia active at time of catheter ablation.	Inpatient
Electro-anatomic mapping system	• No • Yes • Unknown	Enter whether an electro-anatomic mapping system was used during the catheter ablation for therapeutic and/or diagnostic purposes.	Inpatient
Transoesophageal echocardiogram	• No • Yes • Unknown	Enter whether a transoesophageal echocardiogram was performed during the catheter ablation.	Inpatient
Intracardiac echocardiography	• No • Yes • Unknown	Enter whether intracardiac echocardiography (ICE) was performed during the catheter ablation.	Inpatient
Pulmonary vein isolation, assessed with multipolar catheter	• No • Yes • Unknown	Enter whether pulmonary vein isolation was assessed with a multipolar catheter during the catheter ablation.	Inpatient
Radiofrequency ablation, cumulative energy (joules)	• Numeric (0 decimals) • Unknown	Enter the cumulative energy delivered during radiofrequency ablation (in joules).	Inpatient
Radiofrequency ablation, cumulative energy time (seconds)	• Numeric (0 decimals) • Unknown	Enter the cumulative energy time delivered during radiofrequency ablation (in seconds).	Inpatient
Radiofrequency ablation, type of catheter	Multiple choice: • Non-irrigated tip • Irrigated tip • Force sensing • Other • Unknown	Enter the type of catheter used during radiofrequency ablation. More than one option can be selected.	Inpatient

Cryoablation, approach	Multiple choice: • Focal • Balloon • Unknown	Enter the type of approach attempted during cryoablation. More than one option can be selected.	Inpatient
Cardioversion performed during procedure	Multiple choice: • No • Electrical cardioversion • Pharmacologic cardioversion • Unknown	Enter whether cardioversion was performed during the catheter ablation procedure. More than one option can be selected.[13] • **Electrical cardioversion (external or internal)** is defined as a procedure in which direct current (DC) is used to reset the heart's rhythm back to sinus rhythm. • **Pharmacologic cardioversion** is defined as a procedure in which antiarrhythmic medications is used to reset the heart's rhythm back to sinus rhythm.	Inpatient
Intraprocedural anticoagulation	Multiple choice: • No • Uninterrupted oral anticoagulant therapy • Heparin • Bivalirudin • Other • Unknown	Enter whether intraprocedural anticoagulation therapy was provided during the catheter ablation. More than one option can be selected.	Inpatient
Catheter ablation, duration	• Time • Unknown	Enter the total procedure time for the catheter ablation from the time the first catheter was inserted and the last catheter was extracted (in minutes).	Inpatient
Radiation exposure, cumulative air kerma (mGy)	• Numeric (0 decimals) • Unknown	Enter the total cumulative air kerma for the catheter ablation (in mGy). Enter the total radiation dose (cumulative air kerma) recorded to the nearest milligray (mGy). The value recorded should include the total dose for the lab visit. Cumulative air kerma is defined as the total air kerma accrued from the beginning of an examination or procedure and includes all contributions from fluoroscopic and radiographic irradiation.	Inpatient
Radiation exposure, dose area product ($Gy \cdot cm^2$)	• Numeric (0 decimals) • Unknown	Enter the total radiation dose, including x-ray and cine loops (in $Gy \cdot cm^2$). Enter the total fluoroscopy dose to the nearest integer. The value recorded should include the total dose for the lab visit. Dose area product is the integral of air kerma (the energy extracted from an x-ray beam per unit mass of air in a small, irradiated air volume; for diagnostic x-rays, the dose delivered to that volume of air) across the entire x-ray beam emitted from the x-ray tube. It is a surrogate measure of the amount of energy delivered to the patient.	Inpatient
Radiation exposure, duration	• Time • Unknown	Enter the total radiation time (in minutes).	Inpatient
Procedure interrupted due to complication(s)	• No • Yes • Unknown	Enter whether the catheter ablation was interrupted due to complication(s).	Inpatient
Discharge/visit details			
Cause of death	• Cardiovascular death	Enter the cause of death if the patient died during the current hospital stay.	Inpatient | Outpatient

	• Non-cardiovascular death • Unknown	• **Cardiovascular death** is defined as any death that result from a myocardial infarction, sudden cardiac death, arrhythmia, conduction system disturbances, heart failure, stroke, thromboembolism, cardiovascular procedures, cardiovascular haemorrhage, cardiovascular infection, and death due to other cardiovascular causes.[38] • **Non-cardiovascular death** is defined as death clearly related to a non-cardiovascular cause.	
Final diagnosis at discharge/visit, ICD-10 code	String	Enter the main final diagnosis at discharge according to the International Classification of Diseases (ICD) 10 standards.	Inpatient | Outpatient
Acetylsalicylic acid (aspirin), daily dosage (mg)	• Numeric (0 decimals) • Unknown	Enter the total daily dose of acetylsalicylic acid (aspirin) at the time of discharge (in mg).	Inpatient | Outpatient
$P2Y_{12}$ inhibitors, daily dosage (mg)	• Numeric (0 decimals) • Unknown	Enter the total daily dose of $P2Y_{12}$ inhibitors at the time of discharge (in mg).	Inpatient | Outpatient
Antiarrhythmic drugs, daily dosage (mg)	• Numeric (0 decimals) • Unknown	Enter the total daily dose of the antiarrhythmic drugs at the time of discharge (in mg).	Inpatient | Outpatient
Loop diuretics	• No • Yes • Unknown	Enter whether the patient was discharged on loop diuretics. For combination drugs, enter details about both drug classes.	Inpatient | Outpatient
Non-loop diuretics	• No • Yes • Unknown	Enter whether the patient was discharged on non-loop diuretics. For combination drugs, enter details about both drug classes.	Inpatient | Outpatient
Oral/subcutaneous antidiabetics	Multiple choice: • No • Insulin • Metformin • Glucagon-like peptide-1 (GLP-1) analogue • Dipeptidyl peptidase-4 (DPP-4) inhibitor • Sulfonylurea • Repaglinide • Thiazolidinedione • Alpha-glucosidase inhibitor • Other • Unknown	Enter whether the patient was discharged on oral or subcutaneous antidiabetic medications. More than one option can be selected. Sodium-glucose cotransporter-2 inhibitors are entered separately. For combination drugs, enter details about both drug classes.	Inpatient | Outpatient
Lipid lowering treatment	Multiple choice: • No • Statins • Ezetimibe • Fibrates • PCSK9 inhibitors • Other	Enter whether the patient was discharged on lipid lowering treatment. More than one option can be selected.	Inpatient | Outpatient

- Unknown

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