

## Heart rhythm conditions overview

NICE Pathways bring together everything NICE says on a topic in an interactive flowchart. NICE Pathways are interactive and designed to be used online.

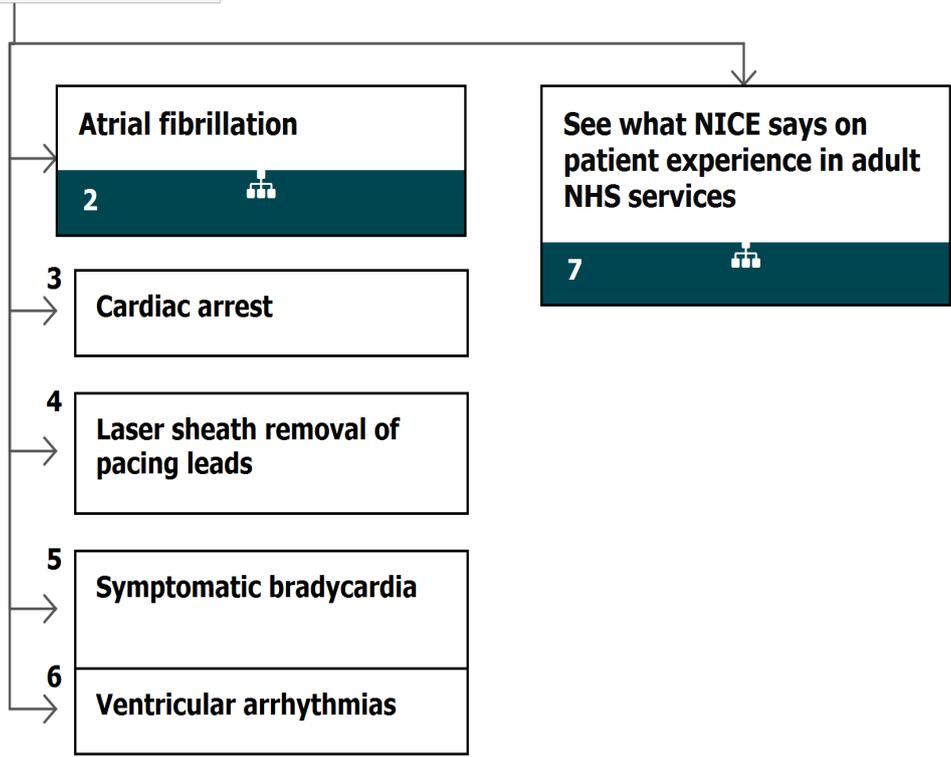
They are updated regularly as new NICE guidance is published. To view the latest version of this NICE Pathway see:

<http://pathways.nice.org.uk/pathways/heart-rhythm-conditions>

NICE Pathway last updated: 28 August 2018

This document contains a single flowchart and uses numbering to link the boxes to the associated recommendations.

**Heart rhythm conditions**



## 1 Heart rhythm conditions

No additional information

## 2 Atrial fibrillation

[See Atrial fibrillation](#)

## 3 Cardiac arrest

### Therapeutic hypothermia following cardiac arrest

NICE has published interventional procedures guidance on [therapeutic hypothermia following cardiac arrest](#) with **normal arrangements** for clinical governance, audit and consent.

### Medtech innovation briefings

NICE has published medtech innovation briefings on:

- [Arctic Sun 5000 for therapeutic hypothermia after cardiac arrest](#)
- [Thermogard XP for therapeutic hypothermia after cardiac arrest](#)
- [the AutoPulse non-invasive cardiac support pump for cardiopulmonary resuscitation](#)
- [the RhinoChill intranasal cooling system for reducing temperature after cardiac arrest.](#)

## 4 Laser sheath removal of pacing leads

NICE has published interventional procedures guidance on [laser sheath removal of pacing leads](#) with **normal arrangements** for consent, audit and clinical governance.

## 5 Symptomatic bradycardia

### Sick sinus syndrome with atrioventricular block, or atrioventricular block alone

The following recommendations are from NICE technology appraisal guidance on [dual-chamber pacemakers for symptomatic bradycardia due to sick sinus syndrome and/or atrioventricular block](#).

This guidance refers only to pacing for the primary indications of sick sinus syndrome and/or atrioventricular block, and does not cover more complex pacing indications.

Dual-chamber pacing is recommended for the management of symptomatic bradycardia due to sick sinus syndrome, atrioventricular block, or a combination of sick sinus syndrome and atrioventricular block, except:

- in the management of atrioventricular block in patients with continuous atrial fibrillation; in this situation, single-chamber ventricular pacing is appropriate.
- in the management of atrioventricular block (atrioventricular block alone, or in combination with sick sinus syndrome), when patient-specific factors, such as frailty or the presence of comorbidities, influence the balance of risks and benefits in favour of single-chamber ventricular pacing.

NICE has written information for the public on [dual-chamber pacemakers for symptomatic bradycardia due to sick sinus syndrome and/or atrioventricular block](#).

### **Sick sinus syndrome without atrioventricular block**

The following recommendation is from NICE technology appraisal guidance on [dual-chamber pacemakers for symptomatic bradycardia due to sick sinus syndrome without atrioventricular block](#).

Dual-chamber pacemakers are recommended as an option for treating symptomatic bradycardia due to sick sinus syndrome without atrioventricular block.

NICE has written information for the public on [dual-chamber pacemakers for symptomatic bradycardia due to sick sinus syndrome without atrioventricular block](#).

### **Leadless cardiac pacemaker implantation for bradyarrhythmias**

NICE has written interventional procedures guidance that [leadless cardiac pacemaker implantation for bradyarrhythmias](#) should only be used with **special arrangements** or in the context of **research** (see guidance for details).

## **6 Ventricular arrhythmias**

### **Implantable cardioverter defibrillators and cardiac resynchronisation therapy**

The following recommendations are from NICE technology appraisal guidance on [implantable](#)

cardioverter defibrillators and cardiac resynchronisation therapy for arrhythmias and heart failure.

Implantable cardioverter defibrillators are recommended as options for:

- treating people with previous serious ventricular arrhythmia, that is, people who, without a treatable cause:
  - have survived a cardiac arrest caused by either ventricular tachycardia or ventricular fibrillation or
  - have spontaneous sustained ventricular tachycardia causing syncope or significant haemodynamic compromise or
  - have sustained ventricular tachycardia without syncope or cardiac arrest, and also have an associated reduction in left ventricular ejection fraction of less than 35% but their symptoms are no worse than class III of the New York Heart Association functional classification of heart failure.
- treating people who:
  - have a familial cardiac condition with a high risk of sudden death, such as long QT syndrome, hypertrophic cardiomyopathy, Brugada syndrome or arrhythmogenic right ventricular dysplasia or
  - have undergone surgical repair of congenital heart disease.

Implantable cardioverter defibrillators (ICDs), cardiac resynchronisation therapy (CRT) with defibrillator (CRT-D) or CRT with pacing (CRT-P) are recommended as treatment options for people with heart failure who have left ventricular dysfunction with a left ventricular ejection fraction of 35% or less as specified below.

	New York Heart Association class			
QRS interval	I	II	III	IV
<120 milliseconds	ICD if there is a high risk of sudden cardiac death			ICD and CRT not clinically indicated
120–149 milliseconds without left bundle branch block	ICD	ICD	ICD	CRT-P

120–149 milliseconds with left bundle branch block	ICD	CRT-D	CRT-P or CRT-D	CRT-P
≥150 milliseconds with or without left bundle branch block	CRT-D	CRT-D	CRT-P or CRT-D	CRT-P

NICE has written information for the public on [implantable cardioverter defibrillators and cardiac resynchronisation therapy](#).

### Interventional procedures

NICE has published guidance on the following procedures with **standard or normal arrangements** for clinical governance, consent and audit:

- [subcutaneous implantable cardioverter defibrillator insertion for preventing sudden cardiac death](#)
- [non-surgical reduction of the myocardial septum](#).

NICE has published guidance on [percutaneous \(non-thoracoscopic\) epicardial catheter radiofrequency ablation for ventricular tachycardia](#) with **normal arrangements** for clinical governance, but with **special arrangements** for consent.

### Medtech innovation briefings

NICE has published medtech innovation briefings on:

- [LATITUDE NXT Patient Management System for monitoring cardiac devices at home](#)
- [CareLink network service for remote monitoring of people with cardiac devices](#).

## 7 See what NICE says on patient experience in adult NHS services

[See Patient experience in adult NHS services](#)

## Sources

Dual-chamber pacemakers for symptomatic bradycardia due to sick sinus syndrome without atrioventricular block (2014) NICE technology appraisal guidance 324

Implantable cardioverter defibrillators and cardiac resynchronisation therapy for arrhythmias and heart failure (2014) NICE technology appraisal guidance 314

Dual-chamber pacemakers for symptomatic bradycardia due to sick sinus syndrome and/or atrioventricular block (2005 updated 2014) NICE technology appraisal guidance 88

## Your responsibility

### Guidelines

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals and practitioners are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or the people using their service. It is not mandatory to apply the recommendations, and the guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.

Local commissioners and providers of healthcare have a responsibility to enable the guideline to be applied when individual professionals and people using services wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with complying with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

## Technology appraisals

The recommendations in this interactive flowchart represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, health professionals are expected to take these recommendations fully into account, alongside the individual needs, preferences and values of their patients. The application of the recommendations in this interactive flowchart is at the discretion of health professionals and their individual patients and do not override the responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or their carer or guardian.

Commissioners and/or providers have a responsibility to provide the funding required to enable the recommendations to be applied when individual health professionals and their patients wish to use it, in accordance with the NHS Constitution. They should do so in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

## Medical technologies guidance, diagnostics guidance and interventional procedures guidance

The recommendations in this interactive flowchart represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, healthcare professionals are expected to take these recommendations fully into account. However, the interactive flowchart does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

Commissioners and/or providers have a responsibility to implement the recommendations, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity, and foster good relations. Nothing in this interactive flowchart should be interpreted in a way that would be inconsistent with compliance with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.