2023

Guideline

# Atrial Fibrillation: Diagnosis and Management

Health Insurance Organisation
June, 2023

NICE
National Institute for Health and Care Excellence

## Introductory note

The National Institute for Health and Care Excellence (NICE) guideline NG196 “Atrial fibrillation: diagnosis and management” was originally developed in 2014 and was last updated in 2021. The updated version of the guideline was made available to the Health Insurance Organization (HIO) through a license agreement with NICE, towards the contextualization of the guideline to the Cyprus healthcare system reality. To this end, HIO recruited local medical experts in the field of atrial fibrillation, other relevant healthcare professionals, and patient representatives, and formed a Technical Expert Committee (TEC). In a series of meetings, the TEC members assessed the scope and the full text of the guideline, and implemented modifications, if these were well supported by scientific evidence. In addition, the TEC members examined the quality indicators relating to the diagnosis and management of atrial fibrillation that have been developed by NICE for the UK National Health Service (NHS), in terms of their applicability for the Cyprus General Health System (GESY). Those that were deemed both clinically relevant and technically feasible were selected for implementation. During this process, all suggested text modifications, along with the supporting evidence, were communicated to NICE for additional comments and clarifications. The first draft of the guideline was completed by TEC after taking into consideration the feedback from NICE and was translated to the Greek language. The Greek version was back-translated to English by NICE to assess the validity of the translation and the final Greek version of the guideline and the suggested quality indicators were released for public consultation. Several potential stakeholders have been invited to participate in the consultation process, such as government-public health agencies, medical/scientific associations and unions, patient associations, and pharmaceutical/medical equipment companies. Following the public consultation process, the TEC made final text modifications and finalized the guideline.

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# Guideline

# Atrial fibrillation: diagnosis and management

## Final, June 2023

**This guideline covers** diagnosing and managing atrial fibrillation in adults. It aims to ensure that people receive the best care to help prevent complications, such as a stroke, and side effects of treatment, such as bleeding.

### Who is it for?

- Healthcare professionals
- Healthcare providers
- People with atrial fibrillation, their families and carers

### What does it include?

- the recommendations
- recommendations for research
- rationale and impact sections that explain why the committee made the 2021 recommendations and how they might affect practice
- the guideline context.

**Information about how the guideline was developed is on the guideline's webpage. This includes the evidence reviews, the scope, details of the committee and any declarations of interest.**

The recommendations in this guideline were developed before the COVID-19 pandemic.

# Contents

# Recommendations

People have the right to be involved in discussions and make informed decisions about their care, as described in Appendix I.

Note that the guideline follows a specific format in terms of wording and structure to make the strength of the recommendations to be clear to the end user. The strength of the recommendation may vary between mandatory, strong, and weak.

- **Mandatory:** If there is a legal duty to apply a recommendation, or the consequences of not following a recommendation are extremely serious, the recommendation uses the terms ‘must’ or ‘must not’ and is worded in the passive voice.
- **Strong:** For recommendations or activities or interventions that should (or should not) be offered, the language is directive language and uses terms such as ‘offer’ (or ‘do not offer’), ‘advise’, or ‘ask about’.
- **Weak:** If there is a closer balance between benefits and harms (activities or interventions that could be used), the term used is ‘consider’.

In addition, the guideline has information about prescribing medicines (including off-label use), professional guidelines, standards and laws (including on consent and mental capacity) and safeguarding.

## 1.1 Detection and diagnosis

1.1.1 Perform manual pulse palpation to assess for the presence of an irregular pulse if there is a suspicion of atrial fibrillation. This includes people presenting with any of the following:

- breathlessness
- palpitations
- syncope or dizziness
- chest discomfort
- stroke or transient ischaemic attack.

1.1.2 Perform a 12-lead electrocardiogram (ECG) to make a diagnosis of atrial fibrillation if an irregular pulse is detected in people with suspected atrial fibrillation with or without symptoms.

1.1.3 In people with suspected paroxysmal atrial fibrillation undetected by 12-lead ECG recording:

- use a 24-hour ambulatory ECG monitor if asymptomatic episodes are suspected or symptomatic episodes are less than 24 hours apart
- use an ambulatory ECG monitor, event recorder or other ECG technology for a period appropriate to detect atrial fibrillation if symptomatic episodes are more than 24 hours apart.

For a short explanation of why the committee made these recommendations see the rationale and impact section on detection and diagnosis.

## 1.2 Assessment of stroke and bleeding risks

### Stroke risk

1.2.1 Use the $CHA_2DS_2$-VASc stroke risk score to assess stroke risk in people with any of the following:

- symptomatic or asymptomatic paroxysmal, persistent or permanent atrial fibrillation
- atrial flutter
- a continuing risk of arrhythmia recurrence after cardioversion back to sinus rhythm or catheter ablation.

See the section on review of people with atrial fibrillation for advice on reassessment of stroke risk.

For a short explanation of why the committee made this recommendation see the rationale and impact section on stroke risk.

**Bleeding risk**

1.2.2 Assess the risk of bleeding when:

- considering starting anticoagulation in people with atrial fibrillation **and**
- reviewing people already taking anticoagulation.

Use the ORBIT bleeding risk score because evidence shows that it has a higher accuracy in predicting absolute bleeding risk than other bleeding risk tools. Accurate knowledge of bleeding risk supports shared decision making and has practical benefits, for example, increasing patient confidence and willingness to accept treatment when risk is low and prompting discussion of risk reduction when risk is high. Although ORBIT is the best tool for this purpose, other bleeding risk tools, such as the HAS-BLED score, may need to be used until it is embedded in clinical pathways and electronic systems.

1.2.3 Offer monitoring and support to modify risk factors for bleeding, including:

- uncontrolled hypertension (uncontrolled hypertension is persistently elevated clinic systolic blood pressure ≥140 mmHg and/or a clinic diastolic blood pressure ≥90 mmHg and/or ambulatory daytime average systolic blood pressure ≥135 mmHg and/or ambulatory daytime

average diastolic blood pressure ≥85 mmHg in hypertensive patients with or without medical therapy). Measurement of blood pressure should be carried out as described in Appendix II (source: NICE guideline NG136)

- poor control of international normalised ratio (INR) in patients on vitamin K antagonists
- concurrent medication, including antiplatelets, selective serotonin reuptake inhibitors (SSRIs) and non-steroidal anti-inflammatory drugs (NSAIDs)
- harmful alcohol consumption (harmful alcohol consumption defined as AUDIT score >8, consider using the Greek version of audit tool to assess harmful alcohol consumption)
- reversible causes of anaemia.

### Discussing the results of the risk assessment

1.2.4 Discuss the results of the assessments of stroke and bleeding risk with the person taking into account their specific characteristics, for example comorbidities, and their individual preferences.

For a short explanation of why the committee made these recommendations see the rationale and impact section on bleeding risk.

## 1.3 Assessment of cardiac function

1.3.1 Perform transthoracic echocardiography (TTE) in people with atrial fibrillation:

- when firstly diagnosed with atrial fibrillation
- for whom a rhythm-control strategy that includes cardioversion (electrical or pharmacological) is being considered
- in whom there is a high risk or a suspicion of underlying structural or functional heart disease (such as heart failure or heart murmur) that

influences their subsequent management (for example, choice of antiarrhythmic drug)
- in whom refinement of clinical risk stratification for antithrombotic therapy is needed (see section 1.2 on assessment of stroke and bleeding risks and section 1.6 on stroke prevention).

1.3.2 Do not routinely perform TTE solely for the purpose of further stroke risk stratification in people with atrial fibrillation for whom the need to start anticoagulation therapy has already been agreed on appropriate clinical criteria (see section 1.2 on assessment of stroke and bleeding risks and section 1.6 on stroke prevention).

1.3.3 Perform transoesophageal echocardiography (TOE) in people with atrial fibrillation:

- when TTE demonstrates an abnormality (such as valvular heart disease) that warrants further specific assessment
- in whom TTE is technically difficult and/or of questionable quality and when there is a need to exclude cardiac abnormalities
- for whom TOE-guided cardioversion is being considered.

## 1.4 Personalised package of care and information

1.4.1 Offer people with atrial fibrillation a personalised package of care. Ensure that the package of care is documented and delivered, and that it covers:

- stroke awareness and measures to prevent stroke
- rate control
- assessment of symptoms for rhythm control
- who to contact for advice if needed
- psychological support if needed
- up-to-date and comprehensive education and information on:
  - cause, effects and possible complications of atrial fibrillation
  - management of rate and rhythm control

- anticoagulation
- practical advice on anticoagulation in line with the recommendations on information and support for people having anticoagulation treatment (Appendix III).
- support networks (for example, cardiovascular charities).

## 1.5 Referral for specialised management

1.5.1 Refer people promptly at any stage if treatment fails to control the symptoms of atrial fibrillation and more specialised management is needed. This should be within 4 weeks after the failed treatment or after recurrence of atrial fibrillation after cardioversion.

## 1.6 Stroke prevention

### Anticoagulation

1.6.1 When discussing the benefits and risks of anticoagulation use clinical risk profiles and personal preferences to guide treatment choices. Discuss with the person that:

- for most people the benefit of anticoagulation outweighs the bleeding risk
- for people with an increased risk of bleeding, the benefit of anticoagulation may not always outweigh the bleeding risk, and careful monitoring of bleeding risk is important.

1.6.2 When deciding between anticoagulation treatment options:

- Discuss the risks and benefits of different drugs with the person and involve the person in the treatment decision making process.
- Take into account any contraindications for each drug and follow the guidance in the Cyprus Register of Medicinal Products and the European Union Register of Medical Products, in particular for advice

on dosages in people with renal impairment, reversal agents and monitoring.

1.6.3 Offer anticoagulation with a direct-acting oral anticoagulant to people with atrial fibrillation and a $CHA_2DS_2$-VASc score of 2 or above, taking into account the risk of bleeding. Apixaban, dabigatran, and rivaroxaban are all recommended as options.

1.6.4 Consider anticoagulation with a direct-acting oral anticoagulant for men with atrial fibrillation and a $CHA_2DS_2$-VASc score of 1, taking into account the risk of bleeding. Apixaban, dabigatran, and rivaroxaban are all recommended as options.

1.6.5 If direct-acting oral anticoagulants are contraindicated, not tolerated or not suitable in people with atrial fibrillation, offer a vitamin K antagonist. See the section on self-monitoring and self-management of vitamin K antagonists.

1.6.6 For adults with atrial fibrillation who are already taking a vitamin K antagonist and are stable, continue with their current medication and discuss the option of switching treatment at their next routine appointment, taking into account the person's time in therapeutic range.

1.6.7 Do not offer stroke prevention therapy with anticoagulation to people aged under 65 years with atrial fibrillation and no risk factors other than their sex (that is, very low risk of stroke equating to a $CHA_2DS_2$-VASc score of 0 for men or 1 for women).

1.6.8 Do not withhold anticoagulation solely because of a person's age or their risk of falls.

For a short explanation of why the committee made these recommendations see the rationale and impact section on stroke prevention.

## Assessing anticoagulation control with vitamin K antagonists

1.6.9 Calculate the person's time in therapeutic range (TTR) at each visit. When calculating TTR:

- use a validated method of measurement such as the Rosendaal method for computer-assisted dosing or proportion of tests in range for manual dosing
- exclude measurements taken during the first 6 weeks of treatment
- calculate TTR over a maintenance period of at least 6 months.

1.6.10 Reassess anticoagulation for a person whose anticoagulation is poorly controlled shown by any of the following:

- 2 INR values higher than 5 or 1 INR value higher than 8 within the past 6 months
- 2 INR values less than 1.5 within the past 6 months
- TTR less than 65%.

1.6.11 When reassessing anticoagulation, take into account and if possible address the following factors that may contribute to poor anticoagulation control:

- cognitive function
- adherence to prescribed therapy
- illness
- interacting drug therapy
- lifestyle factors including diet and alcohol consumption.

1.6.12 If poor anticoagulation control cannot be improved, evaluate the risks and benefits of alternative stroke prevention strategies and discuss these with the person.

### Self-monitoring and self-management of vitamin K antagonists

1.6.13 The CoaguChek XS system is recommended for self-monitoring coagulation status in adults and children on long-term vitamin K antagonist therapy who have atrial fibrillation or heart valve disease if:

- the person prefers this form of testing and
- the person or their carer is both physically and cognitively able to self-monitor effectively.

1.6.14 Patients and carers should be trained in the effective use of the CoaguChek XS system and clinicians involved in their care should regularly review their ability to self-monitor.

1.6.15 Equipment for self-monitoring should be regularly checked using reliable quality control procedures, and by testing patients' equipment against a healthcare professional's coagulometer which is checked in line with an external quality assurance scheme. Ensure accurate patient records are kept and shared appropriately.

1.6.16 For people who may have difficulty with or who are unable to self-monitor, such as children or people with disabilities, their carers should be considered to help with self-monitoring (source: NICE guideline NG106).

## Antiplatelets

1.6.17 For people who have a separate indication for anticoagulation, take into account all of the following when thinking about the duration and type (dual or single) of antiplatelet therapy in the 12 months after an acute coronary syndrome:

- bleeding risk
- thromboembolic risk
- cardiovascular risk

- person’s wishes

Be aware that the optimal duration of aspirin therapy has not been established, and that long-term continuation of aspirin, clopidogrel and oral anticoagulation (triple therapy) significantly increases bleeding risk.

1.6.18 For people already on anticoagulation who have had PCI, continue anticoagulation and clopidogrel for up to 12 months. If the person is taking a direct oral anticoagulant, adjust the dose according to bleeding risk, thromboembolic risk and cardiovascular risk.

1.6.19 For people with a new indication for anticoagulation who have had PCI, offer clopidogrel (to replace prasugrel or ticagrelor) for up to 12 months and an oral anticoagulant licensed for the indication, which best matches the person's:

- bleeding risk
- thromboembolic risk
- cardiovascular risk
- wishes

1.6.20 For people already on anticoagulation, or those with a new indication, who have not had PCI (medical management, CABG), continue anticoagulation and, unless there is a high risk of bleeding, consider continuing aspirin (or clopidogrel for people with contraindication for aspirin) for up to 12 months.

1.6.21 Do not routinely offer prasugrel or ticagrelor in combination with an anticoagulant that is needed for an ongoing separate indication for anticoagulation.

1.6.23 For people with an ongoing indication for anticoagulation 12 months after an MI, take into consideration all of the following when thinking about the need for continuing antiplatelet therapy:

- indication for anticoagulation
- bleeding risk
- thromboembolic risk
- cardiovascular risk
- person's wishes

## Review of people with atrial fibrillation

1.6.24 For people who are not taking an anticoagulant, review stroke risk when they reach age 65 or if they develop any of the following at any age:

- diabetes
- heart failure
- peripheral arterial disease
- coronary heart disease
- stroke, transient ischaemic attack or systemic thromboembolism.

1.6.25 For people who are not taking an anticoagulant because of bleeding risk or other factors, review stroke and bleeding risks annually, and ensure that all reviews and decisions are documented.

1.6.26 For people who are taking an anticoagulant, review the need for anticoagulation and the quality of anticoagulation (taking into account bleeding risk and the need to monitor renal function in patients with renal impairment) at least annually, or more frequently if clinically relevant events occur affecting anticoagulation or bleeding risk.

## Left atrial appendage occlusion

1.6.27 Consider left atrial appendage occlusion (LAAO) if anticoagulation is contraindicated or not tolerated and discuss the benefits and risks of LAAO with the person.

1.6.28 Do not offer LAAO as an alternative to anticoagulation unless anticoagulation is contraindicated or not tolerated.

1.6.29 Patient selection should be carried out by a multidisciplinary team including a cardiologist and other appropriate clinicians experienced in the management of patients with AF at risk of stroke. Patients should be considered for alternative treatments to reduce the risk of thromboembolism associated with AF, and should be informed about these alternatives.

1.6.30 Percutaneous occlusion of the LAA is a technically challenging procedure which should only be carried out by clinicians with specific training and appropriate experience in the procedure.

1.6.31 This procedure should be carried out only in units with on-site cardiac surgery.

1.6.32 Any device-related adverse events resulting from the procedure should be reported to the Cyprus Medical Devices Authority through the relevant form.

## 1.7 Rate and rhythm control

This section covers rate and rhythm control in non-acute settings. See section 1.8 for rate and rhythm control in people presenting acutely (either new onset or destabilisation of existing atrial fibrillation).

### Rate control

1.7.1 Offer rate control as the first-line treatment strategy for atrial fibrillation except in people:

- whose atrial fibrillation has a reversible cause
- who have heart failure thought to be primarily caused by atrial fibrillation
- with new-onset atrial fibrillation

- with atrial flutter whose condition is considered suitable for an ablation strategy to restore sinus rhythm
- for whom a rhythm-control strategy would be more suitable based on clinical judgement.

1.7.2 Offer either a standard beta-blocker (that is, a beta-blocker other than sotalol) or a rate-limiting calcium-channel blocker (diltiazem or verapamil) as initial rate-control monotherapy to people with atrial fibrillation unless the person has the features described in recommendation 1.7.4. Base the choice of drug on the person's symptoms, heart rate, comorbidities and preferences.

In 2023, this was an off-label use of diltiazem.

1.7.3 For people with atrial fibrillation and concomitant heart failure, follow the recommendations on the use of beta-blockers and avoiding calcium-channel blockers (NICE guideline NG106):

Beta-blockers

Do not withhold treatment with a beta-blocker solely because of age or the presence of peripheral vascular disease, erectile dysfunction, diabetes, interstitial pulmonary disease or chronic obstructive pulmonary disease.

Introduce beta-blockers in a 'start low, go slow' manner. Assess heart rate and clinical status after each titration. Measure blood pressure before and after each dose increment of a beta-blocker.

Switch people whose condition is stable and who are already taking a beta-blocker for a comorbidity (for example, angina or hypertension), and who develop heart failure with reduced ejection fraction, to a beta-blocker licensed for heart failure.

Calcium-channel blockers

Avoid verapamil, diltiazem and short-acting dihydropyridine agents in people who have heart failure with reduced ejection fraction (<40%).

1.7.4 Consider digoxin monotherapy for initial rate control for people with non-paroxysmal atrial fibrillation if:

- the person does no or very little physical exercise **or**
- other rate-limiting drug options are ruled out because of comorbidities or the person's preferences.

1.7.5 If monotherapy does not control the person's symptoms, and if continuing symptoms are thought to be caused by poor ventricular rate control, consider combination therapy with any 2 of the following:

- a beta-blocker
- diltiazem
- digoxin.

In 2023 this was an off-label use of diltiazem.

1.7.6 Do not offer amiodarone for long-term rate control.

For a short explanation of why the committee made these recommendations see the rationale and impact section on rate control.

## Rhythm control

1.7.7 Consider pharmacological and/or electrical rhythm control for people with atrial fibrillation whose symptoms continue after heart rate has been controlled or for whom a rate-control strategy has not been successful.

### Antiarrhythmic drug therapy

1.7.8 Assess the need for drug treatment for long-term rhythm control, taking into account the person's preferences, associated comorbidities, risks of treatment and likelihood of recurrence of atrial fibrillation.

1.7.9 Do not offer class 1c antiarrhythmic drugs such as flecainide or propafenone to people with known ischaemic or structural heart disease.

1.7.10 If drug treatment for long-term rhythm control is needed, consider a standard beta-blocker (that is, a beta-blocker other than sotalol) as first-line treatment unless there are contraindications.

1.7.11 If beta-blockers are contraindicated or unsuccessful, assess the suitability of alternative drugs for rhythm control, taking comorbidities into account.

1.7.12 Follow the advice on dronedarone as a second-line treatment option for long-term rhythm control after successful cardioversion (source: NICE guideline TA197).

1.7.13 Dronedarone is recommended as an option for the maintenance of sinus rhythm after successful cardioversion in people with paroxysmal or persistent atrial fibrillation:

- whose atrial fibrillation is not controlled by first-line therapy (usually including beta-blockers), that is, as a second-line treatment option and after alternative options have been considered **and**
- who have at least 1 of the following cardiovascular risk factors:
  - hypertension requiring drugs of at least 2 different classes
  - diabetes mellitus
  - previous transient ischaemic attack, stroke or systemic embolism
  - left atrial diameter of 50 mm or greater **or**
  - age 70 years or older **and**
- who do not have left ventricular systolic dysfunction **and**
- who do not have a history of, or current, heart failure.

1.7.14 People who do not meet the criteria in section 1.7.13 who are currently receiving dronedarone should have the option to continue treatment until they and their clinicians consider it appropriate to stop.

1.7.15 Consider amiodarone for people with left ventricular impairment or heart failure.

1.7.16 In people with infrequent paroxysms and few symptoms, or if symptoms are induced by known precipitants (such as alcohol, caffeine), a 'no drug treatment' strategy or a 'pill-in-the-pocket' strategy (in which antiarrhythmic drugs are taken only when an episode starts) should be considered and discussed with the person.

1.7.17 In people with paroxysmal atrial fibrillation, a 'pill-in-the-pocket' strategy should be considered for those who:

- have no history of left ventricular dysfunction, or valvular or ischaemic heart disease and
- have a history of infrequent symptomatic episodes of paroxysmal atrial fibrillation and
- have a systolic blood pressure greater than 100 mmHg and a resting heart rate above 70 bpm and
- are able to understand how to, and when to, take the medication.

**Cardioversion**

1.7.18 For people having cardioversion for atrial fibrillation that has persisted for longer than 48 hours, offer electrical (rather than pharmacological) cardioversion.

1.7.19 Consider amiodarone therapy starting 4 weeks before and continuing for up to 12 months after electrical cardioversion to maintain sinus rhythm, and discuss the benefits and risks of amiodarone with the person.

1.7.20 For people with atrial fibrillation of greater than 48 hours' duration, in whom elective cardioversion is indicated:

- both transoesophageal echocardiography (TOE)-guided cardioversion and conventional cardioversion should be considered equally effective
- a TOE-guided cardioversion strategy should be considered:
  - if experienced staff and appropriate facilities are available and
  - if a minimal period of precardioversion anticoagulation is indicated due to the person's choice or bleeding risks.

### Left atrial ablation

1.7.21 If drug treatment is unsuccessful, unsuitable or not tolerated in people with symptomatic paroxysmal or persistent atrial fibrillation:

- Consider point by point ablation **or** cryoballoon ablation **or** laser balloon ablation.

- When considering left atrial ablation, discuss the risks and benefits and take into account the person's preferences. In particular, explain that the procedure is not always effective and that the resolution of symptoms may not be long-lasting.

1.7.22 Consider left atrial surgical ablation at the same time as other cardiothoracic surgery for people with symptomatic atrial fibrillation.

For a short explanation of why the committee made these recommendations see the rationale and impact section on left atrial ablation.

### Preventing recurrence after ablation

1.7.23 Consider antiarrhythmic drug treatment for 3 months after left atrial ablation to prevent recurrence of atrial fibrillation, taking into account the person's preferences, and the risks and potential benefits.

1.7.24 Reassess the need for antiarrhythmic drug treatment at 3 months after left atrial ablation.

For a short explanation of why the committee made these recommendations see the rationale and impact section on preventing recurrence after ablation.

### Pace and ablate strategy

1.7.25 Consider pacing and atrioventricular node ablation for people with permanent atrial fibrillation with symptoms or left ventricular dysfunction thought to be caused by high ventricular rates.

1.7.26 When considering pacing and atrioventricular node ablation, reassess symptoms and the consequent need for ablation after pacing has been carried out and drug treatment further optimised.

1.7.27 Consider left atrial catheter ablation before pacing and atrioventricular node ablation for people with paroxysmal atrial fibrillation or heart failure caused by non-permanent (paroxysmal or persistent) atrial fibrillation.

## 1.8 Management for people presenting acutely with atrial fibrillation

### Rate and rhythm control for people presenting acutely

1.8.1 Carry out emergency electrical cardioversion, without delaying to achieve anticoagulation, in people with life-threatening haemodynamic instability caused by new-onset atrial fibrillation.

1.8.2 In people with atrial fibrillation presenting acutely without life-threatening haemodynamic instability:

- offer either rate or rhythm control if the onset of the arrhythmia is less than 48 hours
- offer rate control if onset is more than 48 hours or is uncertain.

1.8.3 In people with atrial fibrillation presenting acutely with suspected concomitant acute decompensated heart failure, seek senior specialist

input on the use of beta-blockers and do not use calcium-channel blockers.

1.8.4 Consider either pharmacological or electrical cardioversion depending on clinical circumstances and resources in people with new-onset atrial fibrillation who will be treated with a rhythm-control strategy.

1.8.5 If pharmacological cardioversion has been agreed on clinical and resource grounds for new-onset atrial fibrillation, offer:

- a choice of flecainide or amiodarone to people with no evidence of structural or ischaemic heart disease **or**
- amiodarone to people with evidence of structural heart disease.

1.8.6 In people with atrial fibrillation in whom the duration of the arrhythmia is greater than 48 hours or uncertain and considered for long-term rhythm control, delay cardioversion until they have been maintained on therapeutic anticoagulation for a minimum of 3 weeks. During this period offer rate control as appropriate.

1.8.7 Do not offer magnesium or a calcium-channel blocker for pharmacological cardioversion.

For a short explanation of why the committee made these recommendation see the rationale and impact section on rate and rhythm control for people presenting acutely.

### Anticoagulation for people presenting acutely with atrial fibrillation

1.8.8 In people with new-onset atrial fibrillation who are receiving no, or subtherapeutic, anticoagulation therapy:

- in the absence of contraindications, offer heparin at initial presentation
- continue heparin until a full assessment has been made and appropriate antithrombotic therapy has been started, based on risk

stratification (see section 1.2 on assessment of stroke and bleeding risks and section 1.6 on stroke prevention).

1.8.9 In people with a confirmed diagnosis of atrial fibrillation of recent onset (less than 48 hours since onset), offer oral anticoagulation if:

- stable sinus rhythm is not successfully restored within the same 48-hour period after onset of atrial fibrillation **or**
- there are factors indicating a high risk of atrial fibrillation recurrence, including history of failed cardioversion, structural heart disease, prolonged atrial fibrillation (more than 12 months), or previous recurrences **or**
- it is recommended in section 1.2 on assessment of stroke and bleeding risks and section 1.6 on stroke prevention.

1.8.10 In people with new-onset atrial fibrillation, if there is uncertainty over the precise time since onset, offer oral anticoagulation as for persistent atrial fibrillation (see section 1.2 on assessment of stroke and bleeding risks and section 1.6 stroke prevention).

## 1.9 Initial management of stroke and atrial fibrillation

1.9.1 Ensure that people with disabling ischaemic stroke who are in atrial fibrillation are treated with aspirin 300 mg for the first 2 weeks before anticoagulation treatment is considered (source: NICE guideline NG128).

## 1.10 Preventing and managing postoperative atrial fibrillation

### Preventing postoperative atrial fibrillation

1.10.1 In people having cardiothoracic surgery:

- reduce the risk of postoperative atrial fibrillation by offering 1 of the following:
  - amiodarone
  - a standard beta-blocker (that is, a beta-blocker other than sotalol)

  - a rate-limiting calcium-channel blocker (diltiazem or verapamil)
- do not offer digoxin.

In 2023 this was an off-label use of diltiazem.

1.10.2 In people having cardiothoracic surgery who are already on beta-blocker therapy, continue this treatment unless contraindications develop (such as postoperative bradycardia or hypotension).

1.10.3 Do not start statins in people having cardiothoracic surgery solely to prevent postoperative atrial fibrillation.

1.10.4 In people having cardiothoracic surgery who are already on statins, continue this treatment.

For a short explanation of why the committee made these recommendations see the rationale and impact section on preventing postoperative atrial fibrillation.

## Managing postoperative atrial fibrillation

### Atrial fibrillation after cardiothoracic surgery

1.10.5 Consider either a rhythm-control or rate-control strategy for the initial treatment of new-onset postoperative atrial fibrillation after cardiothoracic surgery.

1.10.6 If a rhythm-control strategy is chosen, reassess the need for antiarrhythmic drug treatment at a suitable time point (usually at around 6 weeks).

### Atrial fibrillation after non-cardiothoracic surgery

1.10.7 Manage postoperative atrial fibrillation after non-cardiothoracic surgery in the same way as for new-onset atrial fibrillation with any other cause.

### Antithrombotic therapy for postoperative atrial fibrillation

1.10.8 In the prophylaxis and management of postoperative atrial fibrillation, use appropriate antithrombotic therapy and correct identifiable causes (such as electrolyte imbalance or hypoxia).

For a short explanation of why the committee made these recommendations see the rationale and impact section on managing atrial fibrillation after cardiothoracic surgery.

## 1.11 Stopping anticoagulation

1.11.1 In people with a diagnosis of atrial fibrillation, do not stop anticoagulation solely because atrial fibrillation is no longer detectable.

1.11.2 Base decisions to stop anticoagulation on a reassessment of stroke and bleeding risk using $CHA_2DS_2$-VASc and ORBIT and a discussion of the person's preferences.

For a short explanation of why the committee made these recommendations see the rationale and impact section on stopping anticoagulation.

## Terms used in this guideline

This section defines terms that have been used in a particular way for this guideline.

### People with atrial fibrillation presenting acutely

People presenting with atrial fibrillation of definite recent onset or with destabilisation of existing atrial fibrillation. This does not include people with atrial fibrillation that has been discovered incidentally, for example through pulse palpitation before routine blood pressure measurement.

### Pill-in-the-pocket strategy

The person self-manages paroxysmal atrial fibrillation by taking antiarrhythmic drugs only when an episode of atrial fibrillation starts.

## Paroxysmal atrial fibrillation

Episodes of atrial fibrillation that stop within 7 days, usually within 48 hours, without any treatment.

# Rationale and impact

These sections briefly explain why the committee made the recommendations and how they might affect practice. The term “committee” is defined as the NICE Atrial fibrillation Guideline Committee which developed the original guideline NG196 “Atrial Fibrillation: diagnosis and management”.

## Detection and diagnosis

Recommendations 1.1.2 and 1.1.3

### Why the committee made the recommendations

The evidence did not support changing the recommended diagnostic tests to either replace 12-lead ECG as the test to confirm persistent atrial fibrillation or replace pulse palpation as the initial step for persistent atrial fibrillation in a 2-step strategy. The committee clarified that 12-lead ECG should be used as the test to confirm atrial fibrillation, to prevent the use of less accurate ECG devices, such as mobile and lead-I ECG devices. The committee agreed that, although the evidence showed that accuracy varied, there was some evidence that new devices were accurate and showed promise. It was noted that NICE has produced diagnostics guidance on lead-I ECG devices for detecting symptomatic atrial fibrillation using single time point testing in primary care. The committee made a research recommendation on tests to diagnose persistent atrial fibrillation (more information available in the original guideline) to encourage further high-quality research in this area to guide future practice.

The committee agreed that the evidence on tests to detect paroxysmal atrial fibrillation was not clear enough to warrant a change in practice from the 2014 recommendation. However, the evidence did show that longer durations of detection increased accuracy. The committee made a research recommendation on tests to diagnose paroxysmal atrial fibrillation (more information available in the original guideline).

### How the recommendations might affect practice

The recommendations reflect current good practice and are unlikely to have an impact on practice.

Return to recommendations

## Stroke risk

Recommendations 1.2.1 and 1.2.4

### Why the committee made the recommendations

The committee decided to prioritise identifying people above or below a certain risk threshold (discrimination) in its interpretation of the evidence rather than estimating a person's risk of stroke in absolute terms.

The evidence suggested that a score of 2 or more is the ideal threshold for the $CHA_2DS_2$-VASC in terms of indicating the need for anticoagulation. (Men with a $CHA_2DS_2$-VASc score of 1 were regarded as being at intermediate risk, and a group in whom anticoagulation should also be considered.) The evidence showed that this threshold of 2 or more offered a good combination of high sensitivity (0.92) and adequate specificity (0.23).

The high sensitivity means that the tool would correctly identify almost everyone who would later have a stroke if they did not receive anticoagulants. Importantly, this will allow them to be prescribed anticoagulants to reduce their risk of stroke.

The adequate specificity means that 23% of the people who would not later have a stroke (even when not taking anticoagulants) would be correctly identified as not needing anticoagulation. This would prevent these people from having adverse events from anticoagulants. It also means that 77% of people who would not later have a stroke (without anticoagulation) would be wrongly identified as needing anticoagulation. However, this was thought to be acceptable given the perceived lesser harms from unnecessarily giving anticoagulants compared with not giving anticoagulants to people who need them, together with the inevitable trade-off between sensitivity and specificity.

The ATRIA stroke risk score was shown to have better overall accuracy, but although it had better specificity than $CHA_2DS_2$-VASc (fewer false-positive results) it had lower sensitivity, meaning that more people at risk would be missed (more false-negative results) compared with the $CHA_2DS_2$-VASc score. As already suggested, sensitivity was agreed by the committee to be more important than specificity because the risks of unnecessary anticoagulation are outweighed by the risks of not treating people who need anticoagulation. In addition, the ATRIA risk score may result in a time delay in calculating the results.

The committee also discussed that the evidence for the QStroke risk calculator suggested that it might be a useful tool. However, the evidence was limited, and they agreed that further research was needed.

### How the recommendation might affect practice

The recommendation does not constitute a change in practice, and so there would not be a resource impact on the NHS.

Return to recommendations

## Bleeding risk

Recommendations 1.2.2 to 1.2.4

### Why the committee made the recommendations

The committee agreed that anticoagulation should usually be considered in people at risk of stroke even if bleeding risk is high, and so a bleeding risk tool should not be used to provide a cut off for determining who should have anticoagulation. Instead, the tool should be used to provide accurate knowledge of absolute bleeding risk, which can support discussions between the person and their healthcare professional about bleeding risk modification and appropriate levels of vigilance. They therefore agreed that accurately estimating absolute risk (calibration) is more important than identifying a risk threshold for anticoagulation (discrimination) when choosing between different bleeding risk tools.

The committee focused on calibration data for the tools with the most evidence: ORBIT, HAS-BLED and ATRIA. The calibration evidence clearly suggested that ORBIT was more accurate than HAS-BLED and ATRIA at predicting absolute risk of major bleeding, both for people using vitamin K antagonists and those using direct-acting oral anticoagulants. Importantly, ORBIT was better calibrated at all levels of major bleeding risk, including higher levels. ORBIT was also better at predicting absolute risk of intracranial haemorrhage.

The discrimination data showed little difference between tools in predicting major bleeding, with some outcome measures showing no difference and others showing a slight benefit for either ORBIT or HAS-BLED. Evidence showed that ORBIT had a significantly higher specificity and a slighter lower sensitivity than the other tools, but the committee agreed that the lower sensitivity would not be a drawback when used to inform discussions of risk.

The committee agreed that the evidence overall, and particularly the calibration data demonstrating higher accuracy of absolute risk, strongly supported ORBIT as the tool of choice.

The committee agreed that the NICE's previous advice on monitoring and addressing modifiable risk factors was still relevant and added reversible causes of anaemia because it is a component of the ORBIT tool.

### How the recommendations might affect practice

Use of the ORBIT score is a change in practice, which will take time to implement. The committee considered that the more accurate prediction of the absolute risk of bleeding is a real advantage in supporting patients and clinicians in shared decision making, which should lead to better clinical outcomes. The committee considered carefully a number of practical issues set out in this section. Overall, the committee concluded that this change is one that is worth making.

One potential concern discussed by the committee is that ORBIT does not include all of the modifiable risk factors included in HAS-BLED so does not serve as a reminder

of these to clinicians. However, the committee considered that fully investigating modifiable risk factors is established clinical practice, regardless of the tool used.

Another potential challenge is that ORBIT is not the recommended bleeding risk tool for other conditions (such as venous thromboembolism). Therefore, an initial transition period may be needed for training and education in both primary and secondary care while healthcare professionals become familiar with the tool. This will have a resource impact, although it will be time limited. The committee also noted that use of the ORBIT tool, and access to online versions, is straightforward.

Finally, the committee also discussed that, unlike HAS-BLED, ORBIT is not embedded in GP systems, which may cause some initial practical difficulties. However, because this will involve changes to centralised software, it is thought that it will be straightforward to implement and ORBIT will quickly be included in GP systems. Neither tool is included in hospital systems although both are widely available on smartphone apps.

Return to recommendations

## Stroke prevention

Recommendations 1.6.1 to 1.6.8

### Why the committee made the recommendations

Evidence from an analysis of several studies showed that direct-acting oral anticoagulants are more effective than warfarin for a number of outcomes. An economic model also showed that they offered a better balance of benefits to costs than warfarin. There were no studies directly comparing the direct-acting anticoagulants head-to-head but indirect comparisons based on the clinical evidence showed that the different direct-acting oral anticoagulants offered different benefits depending on the outcome considered. When all these outcomes were combined in the cost-effectiveness analysis, apixaban was the most clinically effective and cost-effective anticoagulant based on UK drug tariff prices at the time. However, the committee had concerns over the lack of head-to-head comparisons, differences in the study populations and uncertainties in the economic model.

Based on the evidence and their experience, the committee decided not to recommend one direct-acting oral anticoagulant over the others, but instead to emphasise that treatment should be tailored to the person's clinical needs and preferences. Each anticoagulant has different risks and benefits that should be considered and fully discussed with the person as part of informed shared decision making. The committee highlighted that the choice might be affected by factors such as renal impairment and swallowing difficulties, and that healthcare professionals should refer to the BNF for advice on contraindications and cautions. They also stressed the importance of adherence and factors that might affect this, such as dosing frequency, when making the decision. If direct-acting oral anticoagulants are not suitable, for example in people with antiphospholipid syndrome, the committee agreed that a vitamin K antagonist should be offered.

For people already established and stable on a vitamin K antagonist, the committee agreed that the benefits of changing to a direct-acting anticoagulant need to be discussed. Therefore, the risks and benefits of changing medication, the person's time in therapeutic range and the person's preferences should be explored at their next routine appointment.

The committee agreed that the existing thresholds for the $CHA_2DS_2$-VASc score threshold for anticoagulation are in line with current practice.

Although bleeding risk scores may occasionally be used as a reason not to offer anticoagulation, the committee agreed that they should typically be used as a prompt to identify and manage modifiable risk factors for bleeding rather than as a reason for not offering anticoagulation in people at increased risk. The committee discussed that when anticoagulation is not given because of bleeding risk, people should have regular review and reconsideration for treatment.

The committee were concerned that anticoagulation is sometimes not recommended for people at risk of falls and for older people, even though age is factored into the bleeding risk score and falls are rarely a cause of major haemorrhage. Age was therefore added to the previous recommendation on people at risk of falls to ensure

that anticoagulation is offered in this population when needed. The benefits and harms should be discussed with the person.

### How the recommendations might affect practice

The recommendations are likely to lead to a change in current practice, with a reduction in warfarin use. The committee noted that this has been a prescribing trend over recent years and it may lead to a contraction in warfarin clinic services. The unit cost of direct-acting anticoagulants is greater than that for warfarin, so there is likely to be a resource impact from increased use of direct-acting anticoagulants.

Return to recommendations

## Rate control

Recommendations 1.7.2 to 1.7.6

### Why the committee made the recommendations

The committee made some updates to the 2014 recommendations, based on their experience and knowledge.

The use of beta-blockers or rate-limiting calcium-channel blockers for initial rate-control treatment was retained by the committee because this is current practice and there was insufficient evidence to suggest an alternative option. The committee agreed that the choice of treatment should still be made based on the symptoms, heart rate, comorbidities and preferences of those being treated.

The committee agreed that the recommendations should refer to NICE's guideline on chronic heart failure for advice on using beta-blockers and avoiding rate-limiting calcium-channel blockers such as diltiazem and verapamil in people who have atrial fibrillation with heart failure.

The committee agreed that digoxin monotherapy for non-paroxysmal atrial fibrillation should continue to be considered for people who are sedentary. Based on their experience, the committee agreed that it may also be considered as a treatment option when other rate-limiting drugs are not suitable, so they expanded the

recommendation in the previous guideline to also cover these circumstances. The committee were aware that some clinicians feel that digoxin monotherapy is often better than alternatives for improving symptoms; however, the lack of evidence currently available meant that the recommendation for digoxin was not expanded to cover further groups of people.

In the absence of new evidence, the committee also agreed with the existing recommendation for combination therapy options if initial monotherapy fails, which is consistent with the committee's experience and current practice.

There was a lack of evidence on long-term rate control, and the committee were aware of numerous serious side effects associated with the long-term use of amiodarone (including thyroid, lung and nerve damage), many of which are irreversible. The committee noted that although the most common side effects were less severe, the occurrence of severe side effects was unpredictable and long-term rate control with amiodarone should be avoided. Amiodarone should only be used as an interim therapy, for example while waiting for cardioversion, and would not usually be taken for longer than 12 months.

### How the recommendations might affect practice

The recommendations reflect current practice. Digoxin monotherapy may now be an option in non-paroxysmal atrial fibrillation if comorbidities or patient preferences limit other rate-control drug choices. However, the committee agreed that this already happens in practice.

Return to recommendations

## Left atrial ablation

Recommendations 1.7.19 to 1.7.21

### Why the committee made the recommendations

Ablation may be a treatment option if antiarrhythmic drug treatment has not been successful or is not tolerated. The committee reviewed new clinical and health economic evidence for the different types of ablation for people with paroxysmal

atrial fibrillation and agreed that the catheter ablation techniques that are currently available (point by point ablation, cryoballoon ablation and laser balloon ablation) were characterized by equal effectiveness according to recent evidence and for this reason should be treated equally. The safety profile of these techniques was also similar. The evidence supporting these assessments is based on two recent and well conducted randomized trials (https://pubmed.ncbi.nlm.nih.gov/36184349/ and https://pubmed.ncbi.nlm.nih.gov/31630538/) as well as a recent review and meta-analysis (https://pubmed.ncbi.nlm.nih.gov/29564527/).

### How the recommendations might affect practice

Ablation is carried out in a relatively restricted population (approximately 1% to 2% of all people with atrial fibrillation currently have ablation) and usually reserved for people in whom antiarrhythmic drugs have failed. The committee noted that only point by point ablation and cryoballoon ablation are currently offered in Cyprus but the current frequency of each of these procedures is unknown. As a result, the committee was not able to provide an opinion on how the recommendations may affect practice.

Return to recommendations

## Preventing recurrence after ablation

Recommendations 1.7.23 and 1.7.24

### Why the committee made the recommendations

Most of the evidence on preventing recurrence after ablation was for amiodarone. The evidence suggested that amiodarone may reduce recurrence of atrial fibrillation after ablation. However, there was evidence of an increased risk of hospitalisation and the committee noted the known side effects of amiodarone, which although rare, can be severe and life-threatening.

There was a lack of evidence for other antiarrhythmic drugs and there were no comparisons between different antiarrhythmic drugs. Therefore, the committee

agreed that there was too much uncertainty to recommend one specific antiarrhythmic drug over others.

In addition, the studies often made no distinction between people who had been on antiarrhythmic drugs up to ablation and those who had not. There is variation in current practice on whether people who were not previously taking antiarrhythmic drugs should start them after ablation to reduce recurrence. However, the evidence did not support making separate recommendations to clarify this.

The committee decided that antiarrhythmic drug treatment should be considered after ablation, but only after discussion with the person, taking into account their preferences for treatment and the potential individual risks and benefits. In particular, the committee noted that people should fully understand the potential adverse events associated with these drugs. While there is some variation, the committee agreed that good current practice is for patients taking antiarrhythmic drugs up to ablation to continue them for 3 months after ablation and reassess the need for drug treatment after this time.

### How the recommendations might affect practice

There is some variation in current practice. Practice is likely to change in some centres both in prescribing and in the need for a more formal reassessment of treatment at 3 months. The impact on use of antiarrhythmic drugs is difficult to predict, but there may be an increase from current levels. Increased resources may be needed for reassessment, but it is anticipated that this could be performed at routine follow-up appointments with a cardiologist.

Return to recommendations

## Rate and rhythm control for people presenting acutely

Recommendation 1.8.3

### Why the committee made the recommendations

The committee agreed that the evidence was too limited in quality and quantity to be able to specify a preferred rate-control drug for acute atrial fibrillation. Although there

was some evidence that amiodarone was better than digoxin for rate control, the committee had concerns about the quality of the evidence and the short timeframe used in 1 study, which it agreed could disadvantage digoxin. In addition, there was limited evidence available for morbidity and adverse events for this comparison and no evidence identified for other drug classes.

The committee highlighted that the existing recommendations gave no guidance on acute atrial fibrillation with acute decompensated heart failure. Using their expertise and experience the committee agreed that advice on the use of beta-blockers and rate-limiting calcium-channel blockers should be included because they can lead to further deterioration in people with pulmonary oedema caused by heart failure.

### How the recommendations might affect practice

Digoxin monotherapy may now be an option in non-paroxysmal atrial fibrillation if other rate-control drug choices are ruled out. However, the committee agreed that this already happens in practice.

The recommendations do not constitute a change in practice, and so are unlikely to have a resource impact.

Return to recommendations

## Preventing postoperative atrial fibrillation

Recommendations 1.10.3 and 1.10.4

### Why the committee made the recommendations

The committee noted that the most recent studies reviewed showed no benefit from statins in reducing atrial fibrillation after cardiothoracic surgery. This contrasted with analysis of the evidence overall, which showed a small but definite benefit from statins. The committee agreed that the evidence of no effect in the newer studies was important, because these studies were larger and of higher quality than the older studies included in the analysis.

Although the newer studies suggested that statins did not affect the short-term risk of stroke, they did suggest a greater risk of mortality in the peri-operative period compared with placebo treatment or usual care. The committee agreed that although the additional risk of death was probably small, it was important, especially alongside the lack of convincing evidence of benefit.

For these reasons, the committee decided that statins should not be given to prevent atrial fibrillation after cardiothoracic surgery. However, the committee wanted to highlight that statins have an important role in preventing cardiovascular events other than atrial fibrillation and that people already taking statins for other reasons should continue to do so.

### How the recommendations might affect practice

The committee agreed that the recommendation would not constitute a change in practice, and that there would not be a resource impact on the NHS.

Return to recommendations

## Managing atrial fibrillation after cardiothoracic surgery

Recommendations 1.10.5 and 1.10.6

### Why the committee made the recommendation

The evidence on managing postoperative atrial fibrillation after cardiothoracic surgery in people without pre-existing atrial fibrillation was limited – many of the studies reviewed were old and included small numbers of participants. There were few studies comparing drug classes, and the committee agreed that they could not recommend a particular class of drugs based on such limited evidence.

One larger study comparing mixed rate control and rhythm control with a potassium-channel blocker (amiodarone) with or without rate control suggested little difference between the 2 groups. Based on this evidence and their experience, the committee decided that rhythm control could be considered but that the evidence no longer supported the stronger recommendation included in the 2014 guideline. The committee noted that postoperative atrial fibrillation often resolves naturally, meaning

that rate control rather than rhythm control may be a suitable option for some people. Reducing the emphasis on rhythm-control strategies will allow rate-control strategies to be considered if appropriate for the person.

The committee were also aware of the risk of adverse events if amiodarone, a rhythm control drug, is taken long-term. They highlighted that if a rhythm-control strategy is chosen, the need for rhythm control drugs should be reassessed at approximately 6 weeks, in line with current practice, and they should not be continued automatically for long periods of time. The committee agreed that 6 weeks is an appropriate time point to assess the person's recovery including, for example prosthetic valve function, and to check if sinus rhythm has been restored.

The committee did not make a separate recommendation for people with pre-existing atrial fibrillation because of a lack of evidence. The committee noted that most people undergoing mitral valve surgery with pre-existing atrial fibrillation would undergo left atrial surgery to treat atrial fibrillation at the same time.

### How the recommendations might affect practice

Rhythm control for the treatment of new-onset atrial fibrillation after cardiothoracic surgery is current practice and amiodarone is most commonly used. This can still be considered, but there may be a reduction in the use of rhythm control in this population and an increase in the use of rate-control drugs instead.

Return to recommendations

## Stopping anticoagulation

Recommendations 1.11.1 and 1.11.2

### Why the committee made the recommendations

There was limited evidence on whether to continue anticoagulation or stop it and switch to aspirin after successful treatment of atrial fibrillation by catheter ablation. The committee agreed that the evidence was insufficient and that there was too much uncertainty in the results to make a recommendation based on the evidence.

The committee was concerned about the potential withdrawal of anticoagulation in people who had not had ablation or cardiac surgery for atrial fibrillation, but in whom sinus rhythm is now present and atrial fibrillation is no longer detectable. In particular, the committee noted that paroxysmal atrial fibrillation is not always detectable. Based on their experience, the committee made a consensus-based recommendation to ensure that decisions about stopping anticoagulation in this population are based on formal risk assessment of stroke and bleeding risks and patient preference.

### How the recommendations might affect practice

The committee felt that the recommendation would not constitute a change in practice, and that there would not be a resource impact on the NHS.

Return to recommendations

## Context

Atrial fibrillation is the most common heart rhythm disorder (affecting approximately 2% of the adult population), and estimates suggest its prevalence is increasing. Atrial fibrillation causes palpitations and breathlessness in many people but it may be silent and undetected. If left untreated it is a significant risk factor for stroke and other morbidities: it is estimated that it is responsible for approximately 20% of all strokes and is associated with increased mortality. Men are more commonly affected than women and the prevalence increases with age and in underlying heart disease, diabetes, obesity and hypertension.

Atrial fibrillation is typically detected as an irregular pulse or an irregular rhythm on an electrocardiogram (ECG). This may be an incidental finding or arise while investigating symptoms suggestive of the disease. Because atrial fibrillation can be intermittent, detection and diagnosis may be challenging.

The aim of treatment is to prevent complications, particularly stroke, and alleviate symptoms. Drug treatments include anticoagulants to reduce the risk of stroke and antiarrhythmics to restore or maintain the normal heart rhythm or to slow the heart

rate in people who remain in atrial fibrillation. Non-pharmacological management includes electrical cardioversion, which may be used to ‘shock’ the heart back to its normal rhythm, and catheter or surgical ablation to create lesions to stop the triggers that cause atrial fibrillation. These procedures can markedly reduce the symptom burden when drug therapy is not tolerated or ineffective.

This update focuses on areas of new evidence and changing practice since the 2014 NICE guideline. These include methods of identifying atrial fibrillation, assessing stroke and bleeding risk, antithrombotic agents, ablation strategies, preventing recurrence and preventing and managing postoperative atrial. This guideline update includes recommendations on these specific issues.

The recommendations apply to adults (18 years or older) with atrial fibrillation, including paroxysmal (recurrent), persistent and permanent atrial fibrillation, and atrial flutter. They do not apply to people with congenital heart disease precipitating atrial fibrillation.

## Finding more information

For full details of the evidence and the guideline committee’s discussions, see the evidence reviews. You can also find information about how the guideline was developed.

## APPENDIX I

### Information about making decisions about your care

**Your care**

It's your right to be involved in making choices about your care. To make a decision, you need to know what your options are and what might happen if you don’t want any treatment or care.

Get information on what to do:

- before you see your health or care professional
- when you see your health or care professional
- when involving other people
- when you cannot give consent.

**Shared decision making**

Shared decision making is when health professionals and patients work together. It puts you at the centre of decisions about your own treatment and care.

This means that:

- different choices available to the patient are discussed
- care or treatment options are explored in full, along with the risks and benefits
- patients reach a decision with their health and social care professional.

## APPENDIX II:

### Diagnosing hypertension

If blood pressure in the clinic is 140/90 mmHg or higher:

- Take a second measurement during the consultation.
- If the second measurement is substantially different from the first, take a third measurement.
- Record the lower of the last 2 measurements as the clinic blood pressure.

When using ambulatory blood pressure monitoring to confirm a diagnosis of hypertension, ensure that at least 2 measurements per hour are taken during the person's usual waking hours (for example 08:00 and 22:00). Use the average value of at least 14 measurements taken during the person's usual waking hours to confirm diagnosis of hypertension.

Confirm diagnosis of hypertension in people with a:

- clinic blood pressure of 140/90 mmHg or higher **and**
- ABPM daytime average or HBPM average of 135/85 mmHg or higher.

## APPENDIX III

### Information and support for people having anticoagulation treatment

1. Give people having anticoagulation treatment verbal and written information about:

- how to use anticoagulants
- how long to take anticoagulants
- possible side effects of anticoagulants and what to do if these occur
- how other medications, foods and alcohol can affect oral anticoagulation treatment
- any monitoring needed for their anticoagulant treatment
- how anticoagulants may affect their dental treatment
- taking anticoagulants if they are planning pregnancy or become pregnant
- how anticoagulants may affect activities such as sports and travel
- when and how to seek medical help.

2. Give people who are having anticoagulation treatment information and an 'anticoagulant alert card' that is specific to their treatment. Advise them to carry the 'anticoagulant alert card' at all times.

3. Be aware that heparins are of animal origin and that apixaban and rivaroxaban contain lactose from cow's milk.

## APPENDIX IV

## List of changes in the contextualised guideline

### General Remarks:

Several changes were carried out to remove links to other NICE guidelines to make the contextualized guideline a stand-alone document.

Deleted year information **[22XX]** from all points in the guideline as these were not relevant for the Cyprus audience.

The sentence referring to the full details of the evidence and the committee's discussion in the box after each guideline section was deleted as it is covered by the link to the guideline webpage which is part of the title page.

| # | Original Guideline | Contextualized Guideline | Original Wording | Contextualized wording | Rationale for Contextualization |
|---|---|---|---|---|---|
| **1** | Title page | Title page | This guideline will update NICE guideline CG180 (published June 2014) | Deleted sentence | Information not relevant to the Cyprus audience was removed. |
| **2** | Title page | Title page | Information about how the guideline was developed is on the guideline's webpage. This includes the evidence reviews, the scope, details of the committee and any declarations of interest | Made it bold | Information emphasized |
| **3** | Recom-mendations | Recom-mendations | NICE's information on making decisions about your care | Deleted sentence and link and replace with "Appendix I" | The link to another document has been removed and the information is provided in the appendix |
| **4** | Recom-mendations | Recom-mendations | Making decisions using NICE guidelines explains how we use words to show strength (or certainty) of our recommendations, and has information about prescribing medicines (including off label use), professional guidelines, standards and laws (including on consent and mental capacity), and safeguarding. | Deleted sentence and link and replaced with informatory text from the NICE training material explains the specific format of wording and structure of recommendations | The link to another document has been removed and the information and the relevant information is provided within the guideline document. |
| **5** | 1.2.2 | 1.2.2 | Use the ORBIT bleeding risk score because evidence | Use the ORBIT bleeding risk score because evidence | From the initial contextualization stage, TEC was aware that |

| | | | | | |
|---|---|---|---|---|---|
| | | | shows that it has a higher accuracy in predicting absolute bleeding risk than other bleeding risk tools. Accurate knowledge of bleeding risk supports shared decision making and has practical benefits, for example, increasing patient confidence and willingness to accept treatment when risk is low and prompting discussion of risk reduction when risk is high. Although ORBIT is the best tool for this purpose, other bleeding risk tools, may need to be used until it is embedded in clinical pathways and electronic systems. | shows that it has a higher accuracy in predicting absolute bleeding risk than other bleeding risk tools. Accurate knowledge of bleeding risk supports shared decision making and has practical benefits, for example, increasing patient confidence and willingness to accept treatment when risk is low and prompting discussion of risk reduction when risk is high. Although ORBIT is the best tool for this purpose, other bleeding risk tools, such as the HAS-BLED score, may need to be used until it is embedded in clinical pathways and electronic systems. | current practices to evaluate risk of bleeding in atrial fibrillation rely on the use of HAS-BLED score. However, based on the available evidence, it was decided to suggest the use of ORBIT as the main tool to evaluate risk of bleeding as it was found to be more sensitive compared to HAS-BLED. To this effect, the TEC considered that the use of ORBIT as more sensitive tool for the evaluation of the absolute risk of bleeding is a real advantage for supporting patients and clinicians in joint decision-making and advocated in favor of including it the contextualized guideline. However, given that ORBIT is not part of the current clinical pathways in Cyprus and is not part of the HIO electronic system, the guideline allows for the use of other tools, such as the HAS-BLED score, until ORBIT is fully incorporated in clinical practice and the electronic systems. |
| **6** | 1.2.3 | 1.2.3 | uncontrolled hypertension (see NICE's guideline on hypertension in adults) | uncontrolled hypertension ((uncontrolled hypertension is persistently elevated clinic systolic blood pressure ≥140 mmHg and/or a clinic diastolic blood pressure ≥90 mmHg and/or ambulatory daytime average systolic blood pressure ≥135 mmHg and/or ambulatory daytime average diastolic blood pressure ≥85 mmHg in hypertensive patients with or without medical therapy). Measurement of blood pressure should be carried out as described in Appendix II (source: NICE guideline NG136) | The contextualized text defines uncontrolled hypertension within the guideline document. The link to another guideline has been removed. |
| **7** | 1.2.3 | 1.2.3 | harmful alcohol consumption (see NICE's guideline on alcohol-use disorders: diagnosis, assessment and management of harmful drinking and alcohol dependence) | harmful alcohol consumption (harmful alcohol consumption defined as AUDIT score >8, consider using the Greek version of audit tool to assess harmful alcohol consumption) | The contextualized text defines harmful alcohol consumption within the guideline document and the link to another document has been removed. In addition, it provides a link to the Greek version of the AUDIT tool |
| **8** | 1.2.4 | 1.2.4 | Discuss the results of the assessments of stroke and bleeding risk with the person taking into account their specific characteristics, for example comorbidities, and their individual preferences. For further guidance see the section on enabling patients | Discuss the results of the assessments of stroke and bleeding risk with the person taking into account their specific characteristics, for example comorbidities, and their individual preferences. ~~For further guidance see the section on enabling patients~~ | Information and link that were not relevant to the Cyprus audience were removed. |

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|---|---|---|---|---|---|
| | | | to actively participate in their care in NICE's guideline on patient experience in adult NHS services. | ~~to actively participate in their care in NICE's guideline on patient experience in adult NHS services.~~ | |
| **9** | 1.3.1 | 1.3.1 | Perform transthoracic echocardiography (TTE) in people with atrial fibrillation:<br>• For whom a baseline echocardiogram is important for long term management | Perform transthoracic echocardiography (TTE) in people with atrial fibrillation:<br>• when firstly diagnosed with atrial fibrillation<br>• For whom a baseline echocardiogram is important for long term management | The TEC members were in favor of all newly diagnosed AF patients undergoing echocardiography. This position is in line with previous expert consensus statements and guidelines. https://pubmed.ncbi.nlm.nih.gov/26864186/ https://www.jacc.org/doi/full/10.1016/j.jacc.2006.07.009 |
| **10** | 1.4.1 | 1.4.1 | -practical advice on anticoagulation in line with the recommendations on information and support for people having anticoagulation treatment in NICE's guideline on venous thromboembolic diseases | -practical advice on anticoagulation in line with the recommendations on information and support for people having anticoagulation treatment (Appendix III) | The contextualized text provides the relevant information in the appendix within the same document. The link to another guideline has been removed. |
| **11** | 1.4.2 | 1.4.2 | Follow the recommendations on shared decision making in NICE's guideline on patient experience in adult NHS services | Deleted text | Information and link that were not relevant to the Cyprus audience were removed. |
| **12** | 1.4.3 | 1.4.3 | To support adherence and ensure safe and effective medicines use in people with atrial fibrillation, follow the recommendations in NICE's guidelines on medicines adherence and medicines optimization. | Deleted text | Information and link that were not relevant to the Cyprus audience were removed. |
| **13** | 1.6.2 | 1.6.2 | When deciding between anticoagulation treatment options:<br>• Discuss the risks and benefits of different drugs with the person<br>• and follow the recommendations on shared decision making in NICE's guideline on patient experience in adult NHS services.<br>• Follow the recommendations on patient involvement in decisions about medicines in NICE's guideline on medicines adherence and patient decision aids in NICE's guideline on medicines optimization. | When deciding between anticoagulation treatment options:<br>• Discuss the risks and benefits of different drugs with the person and involve the person in the treatment decision making process.<br>• Take into account any contraindications for each drug and follow the guidance in the Cyprus Register of Medicinal Products and the European Union Register of Medical Products, in particular for advice on dosages in people with renal impairment, reversal agents and monitoring. | Information and links that were not relevant to the Cyprus audience as well as links to guidelines that were not feasible to also be contextualized were removed. The contextualized text provides the same overall message and includes the links for local and European Union sources for drug contraindications. |

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| | | | • Take into account any contraindications for each drug and follow the guidance in the British National Formulary and the MHRA advice on direct acting oral anticoagulants, in particular for advice on dosages in people with renal impairment, reversal agents and monitoring. | | |
| **14** | 1.6.3 | 1.6.3 | Offer anticoagulation with a direct-acting oral anticoagulant to people with atrial fibrillation and a CHA2DS2-VASc score of 2 or above, taking into account the risk of bleeding. Apixaban, dabigatran, edoxaban and rivaroxaban are all recommended as options, when used in line with the criteria specified in the relevant NICE technology appraisal guidance (see anticoagulation treatment in the NICE Pathway on atrial fibrillation) | Offer anticoagulation with a direct-acting oral anticoagulant to people with atrial fibrillation and a CHA2DS2-VASc score of 2 or above, taking into account the risk of bleeding. Apixaban, dabigatran, and rivaroxaban are all recommended as options. | Removed “edoxaban” as this drug is not marketed in Cyprus. The link to another guideline that was not feasible to contextualize was removed. |
| **15** | 1.6.4 | 1.6.4 | Consider anticoagulation with a direct-acting oral anticoagulant for men with atrial fibrillation and a CHA2DS2-VASc score of 1, taking into account the risk of bleeding. Apixaban, dabigatran, edoxaban and rivaroxaban are all recommended as options, when used in line with the criteria specified in the relevant NICE technology appraisal guidance (see anticoagulation treatment in the NICE Pathway on atrial fibrillation). | Consider anticoagulation with a direct-acting oral anticoagulant for men with atrial fibrillation and a CHA2DS2-VASc score of 1, taking into account the risk of bleeding. Apixaban, dabigatran, and rivaroxaban are all recommended as options. | Removed “edoxaban” as this drug is not marketed in Cyprus. The link to another guideline that was not feasible to contextualize was removed. |
| **16** | 1.6.12 | 1.6.12 | If poor anticoagulation control cannot be improved, evaluate the risks and benefits of alternative stroke prevention strategies and discuss these with the person.<br><br>**Self-monitoring and self-management of vitamin K antagonists** | If poor anticoagulation control cannot be improved, evaluate the risks and benefits of alternative stroke prevention strategies and discuss these with the person.<br><br>**Self-monitoring and self-management of vitamin K antagonists** | Links directing the reader to NICE guidelines that were not feasible to contextualize were removed. The contextualized text provides the same message within the guideline document. |

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| | | | NICE has developed diagnostics guidance on atrial fibrillation and heart valve disease: self-monitoring coagulation status using point-of-care coagulometers (the CoaguChek XS system)<br>**Antiplatelets**<br>For guidance on antiplatelet therapy for people who have had a myocardial infarction and are having anticoagulation, see antiplatelet therapy for people with an ongoing separate indication for anticoagulation in NICE's guideline on acute coronary syndromes. | 1.6.13 The CoaguChek XS system is recommended for self-monitoring coagulation status in adults and children on long-term vitamin K antagonist therapy who have atrial fibrillation or heart valve disease if:<br>• the person prefers this form of testing and<br>• the person or their carer is both physically and cognitively able to self-monitor effectively.<br><br>1.6.14 Patients and carers should be trained in the effective use of the CoaguChek XS system and clinicians involved in their care should regularly review their ability to self-monitor.<br><br>1.6.15 Equipment for self-monitoring should be regularly checked using reliable quality control procedures, and by testing patients' equipment against a healthcare professional's coagulometer which is checked in line with an external quality assurance scheme. Ensure accurate patient records are kept and shared appropriately.<br><br>1.6.16 For people who may have difficulty with or who are unable to self-monitor, such as children or people with disabilities, their carers should be considered to help with self-monitoring (source: NICE guideline NG106).<br><br>**Antiplatelets**<br><br>1.6.17 For people who have a separate indication for anticoagulation, take into account all of the following when thinking about the duration and type (dual or single) of antiplatelet therapy in the 12 months after an acute coronary syndrome:<br>• bleeding risk<br>• thromboembolic risk<br>• cardiovascular risk<br>• person's wishes | |

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| | | | | Be aware that the optimal duration of aspirin therapy has not been established, and that long-term continuation of aspirin, clopidogrel and oral anticoagulation (triple therapy) significantly increases bleeding risk.<br><br>1.6.18 For people already on anticoagulation who have had PCI, continue anticoagulation and clopidogrel for up to 12 months. If the person is taking a direct oral anticoagulant, adjust the dose according to bleeding risk, thromboembolic risk and cardiovascular risk.<br><br>1.6.19 For people with a new indication for anticoagulation who have had PCI, offer clopidogrel (to replace prasugrel or ticagrelor) for up to 12 months and an oral anticoagulant licensed for the indication, which best matches the person's:<br>• bleeding risk<br>• thromboembolic risk<br>• cardiovascular risk<br>• wishes<br><br>1.6.20 For people already on anticoagulation, or those with a new indication, who have not had PCI (medical management, CABG), continue anticoagulation and, unless there is a high risk of bleeding, consider continuing aspirin (or clopidogrel for people with contraindication for aspirin) for up to 12 months.<br><br>1.6.21 Do not routinely offer prasugrel or ticagrelor in combination with an anticoagulant that is needed for an ongoing separate indication for anticoagulation.<br><br>1.6.23 For people with an ongoing indication for anticoagulation 12 months after an MI, take into consideration all of the following when thinking | |

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| | | | | about the need for continuing antiplatelet therapy:<br>• indication for anticoagulation<br>• bleeding risk<br>• thromboembolic risk<br>• cardiovascular risk<br>• person's wishes | |
| **17** | 1.6.16 | 1.6.26 | For people who are taking an anticoagulant, review the need for anticoagulation and the quality of anticoagulation (taking into account MHRA advice on direct-acting oral anticoagulants about bleeding risk and the need to monitor renal function in patients with renal impairment) at least annually, or more frequently if clinically relevant events occur affecting anticoagulation or bleeding risk. | For people who are taking an anticoagulant, review the need for anticoagulation and the quality of anticoagulation (taking into account about bleeding risk and the need to monitor renal function in patients with renal impairment) at least annually, or more frequently if clinically relevant events occur affecting anticoagulation or bleeding risk. | The link to MHRA advice on direct-acting oral anticoagulants was removed as it was not possible to be contextualized. A local source with similar information does not exist but the deletion of this link does not significantly affect the quality of the contextualized guideline. |
| **18** | 1.6.17 | 1.6.27 | Consider left atrial appendage occlusion (LAAO) if anticoagulation is contraindicated or not tolerated and discuss the benefits and risks of LAAO with the person. For more information see NICE's interventional procedure guidance on percutaneous occlusion of the left atrial appendage in non-valvular atrial fibrillation for the prevention of thromboembolism. | Consider left atrial appendage occlusion (LAAO) if anticoagulation is contraindicated or not tolerated and discuss the benefits and risks of LAAO with the person. | The link to another guideline that was not feasible to also be contextualized was removed. The deletion of this link does not have a significant impact on the overall quality of the contextualized guideline. |
| **19** | 1.7.2 | 1.7.2 | In 2021 this was an off-label use of diltiazem. See NICE's information on prescribing medicines | In 2023, this was an off-label use of diltiazem. | The contextualized text is up to date. The deletion of the link to another document does not have a significant impact on the overall quality of the contextualized guideline. |
| **20** | 1.7.3 | 1.7.3 | For people with atrial fibrillation and concomitant heart failure, follow the recommendations on the use of beta-blockers and avoiding calcium-channel blockers in NICE's guideline on chronic heart failure. | For people with atrial fibrillation and concomitant heart failure, follow the recommendations on the use of beta-blockers and avoiding calcium-channel blockers (NICE guideline NG106):<br><br>Beta-blockers<br><br>Do not withhold treatment with a beta-blocker solely because of age or the presence of peripheral vascular disease, erectile dysfunction, diabetes, | Link directing the reader to NICE guideline that was not feasible to contextualize was removed. The contextualized text provides the same message within the guideline document. |

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| | | | | interstitial pulmonary disease or chronic obstructive pulmonary disease.<br><br>Introduce beta-blockers in a 'start low, go slow' manner. Assess heart rate and clinical status after each titration. Measure blood pressure before and after each dose increment of a beta-blocker.<br><br>Switch people whose condition is stable and who are already taking a beta-blocker for a comorbidity (for example, angina or hypertension), and who develop heart failure with reduced ejection fraction, to a beta-blocker licensed for heart failure.<br><br>Calcium-channel blockers<br><br>Avoid verapamil, diltiazem and short-acting dihydropyridine agents in people who have heart failure with reduced ejection fraction (<40%). | |
| **21** | 1.7.5 | 1.7.5 | In 2021 this was an off-label use of diltiazem. See NICE's information on prescribing medicines | In 2023 this was an off-label use of diltiazem. | The contextualized text is up to date. The deletion of the link to another document does not have a significant impact on the overall quality of the contextualized guideline. |
| **22** | 1.7.12 | 1.7.12 | Follow the advice on dronedarone as second line treatment option for long-term rhythm control after successful cardioversion in NICE's technology appraisal guidance on dronedarone for the treatment of non-permanent atrial fibrillation | 1.7.12 Follow the advice on dronedarone as a second-line treatment option for long-term rhythm control after successful cardioversion (source: NICE guideline TA197). | Link directing the reader to NICE guideline that was not feasible to contextualize was removed but the source guideline was kept as in text reference. The same information is provided (added new point 1.713) in the same document |
| **23** | 1.7.13 | 17.13 | 1.7.13 Consider amiodarone for people with left ventricular impairment or heart failure. **[2014]**<br><br>1.7.14. In people with infrequent paroxysms and few symptoms, or if symptoms are induced by known precipitants (such as alcohol, caffeine), a 'no drug treatment' strategy or a 'pill-in-the-pocket' strategy (in which antiarrhythmic drugs are taken only when an episode starts) should be | 1.7.13 Dronedarone is recommended as an option for the maintenance of sinus rhythm after successful cardioversion in people with paroxysmal or persistent atrial fibrillation:<br>• whose atrial fibrillation is not controlled by first-line therapy (usually including beta-blockers), that is, as a second-line treatment option and after alternative options have been considered **and** | Removed link from 1,7.12 added point 1.7.13 to provide information within the same document. Renumbered all remaining points until the end of section 1.7. |

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| | | | considered and discussed with the person. **[2006]**<br><br>1.7.15. In people with paroxysmal atrial fibrillation, a 'pill-in-the-pocket' strategy should be considered for those who:<br>have no history of left ventricular dysfunction, or valvular or ischaemic heart disease and<br>have a history of infrequent symptomatic episodes of paroxysmal atrial fibrillation and<br>have a systolic blood pressure greater than 100 mmHg and a resting heart rate above 70 bpm and are able to understand how to, and when to, take the medication. **[2006]** | • who have at least 1 of the following cardiovascular risk factors:<br>- hypertension requiring drugs of at least 2 different classes<br>- diabetes mellitus<br>- previous transient ischaemic attack, stroke or systemic embolism<br>- left atrial diameter of 50 mm or greater **or**<br>- age 70 years or older **and**<br>• who do not have left ventricular systolic dysfunction **and**<br>• who do not have a history of, or current, heart failure.<br><br>1.7.14 People who do not meet the criteria in section 1.7.13 who are currently receiving dronedarone should have the option to continue treatment until they and their clinicians consider it appropriate to stop.<br><br>1.7.15 Consider amiodarone for people with left ventricular impairment or heart failure.<br><br>1.7.16 In people with infrequent paroxysms and few symptoms, or if symptoms are induced by known precipitants (such as alcohol, caffeine), a 'no drug treatment' strategy or a 'pill-in-the-pocket' strategy (in which antiarrhythmic drugs are taken only when an episode starts) should be considered and discussed with the person.<br><br>1.7.17 In people with paroxysmal atrial fibrillation, a 'pill-in-the-pocket' strategy should be considered for those who:<br>• have no history of left ventricular dysfunction, or valvular or ischaemic heart disease and<br>• have a history of | |

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| | | | | infrequent symptomatic episodes of paroxysmal atrial fibrillation and<br>• have a systolic blood pressure greater than 100 mmHg and a resting heart rate above 70 bpm and<br>• are able to understand how to, and when to, take the medication. | |
| **24** | 1.7.19 | 1.7.21 | If drug treatment is unsuccessful, unsuitable or not tolerated in people with symptomatic paroxysmal or persistent atrial fibrillation:<br>• Consider radiofrequency point by point ablation **or**<br>• If radiofrequency point by point ablation is assessed as being unsuitable, consider cryoballoon ablation or laser balloon ablation | 1.7.21 If drug treatment is unsuccessful, unsuitable or not tolerated in people with symptomatic paroxysmal or persistent atrial fibrillation:<br>• Consider point by point ablation or cryoballoon ablation or laser balloon ablation | The TEC members expressed the opinion that the different approaches of ablation (point by point and cryoballon/laser balloon) have been found to be of equal effectiveness according to recent evidence and for this reason should be treated equally.<br>https://pubmed.ncbi.nlm.nih.gov/29564527/<br>https://pubmed.ncbi.nlm.nih.gov/36184349/<br>https://pubmed.ncbi.nlm.nih.gov/31630538/<br>Regarding the costs of the procedures, the TEC checked the reasoning of the NICE position and argued that for Cyprus the cost differences between the two procedures will be negligible. HIO has checked for some examples to assess differences in the costs for these procedures in Cyprus and confirmed that the cost differences between the procedures were negligible. |
| **25** | 1.7.21 | n/a | For NICE interventional procedures guidance on left atrial ablation for atrial fibrillation, see left atrial ablation and a pace and ablate strategy in the NICE Pathway on atrial fibrillation | Deleted text | The link to another guideline that was not feasible to also be contextualized was removed. The deletion of this link does not have a significant impact on the overall quality of the contextualized guideline. |

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| **26** | 1.9.1 | 1.9.1 | For guidance on the initial management of stroke and atrial fibrillation see recommendation 1.4.17 in NICE's guideline on stroke and transient ischaemic attack in over 16s. | Ensure that people with disabling ischaemic stroke who are in atrial fibrillation are treated with aspirin 300 mg for the first 2 weeks before anticoagulation treatment is considered (source: NICE guideline NG128). | Link directing the reader to NICE guideline that was not feasible to contextualize was removed. The contextualized text provides the same message within the guideline document. |
| **27** | 1.10.1 | 1.10.1 | In 2014, this was an off-label use of diltiazem. See NICE's information on prescribing medicines | In 2023 this was an off-label use of diltiazem. | The contextualized text is up to date. The deletion of the link to another document does not have a significant impact on the overall quality of the contextualized guideline. |
| **28** | 1.10.4 | 1.10.4 | In people with cardiothoracic surgery who are already on statins, continue this treatment.<br>For further advice on statins for the prevention of cardiovascular disease, see NICE's guideline on cardiovascular disease: risk assessment and reduction. | In people with cardiothoracic surgery who are already on statins, continue this treatment. | The link to another guideline that was not feasible to also be contextualized was removed. The deletion of this link does not have a significant impact on the overall quality of the contextualized guideline |