NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Guideline

Atrial fibrillation: management

Draft for consultation, September 2020

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.

This guideline will update NICE guideline CG180 (published June 2014).

Who is it for?

- Healthcare professionals
- Commissioners and 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 2020 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.

New and updated recommendations

We have reviewed the evidence on diagnosis and assessment, assessment of stroke and bleeding risks, preventing stroke, rate and rhythm control, preventing

recurrence, and preventing and managing postoperative atrial fibrillation. You are invited to comment on the new and updated recommendations. These are marked as **[2020]**.

You are also invited to comment on recommendations that NICE proposes to delete from the 2014 guideline.

We have not reviewed the evidence for the recommendations shaded in grey, and cannot accept comments on them. In some cases, we have made minor wording changes for clarification.

Full details of the evidence and the committee's discussion on the 2020 recommendations are in the evidence reviews. Evidence for the 2014 recommendations is in the full version of the 2014 guideline.

The recommendations in this guideline were developed before the COVID-19 pandemic. Please tell us if there are any particular issues relating to COVID-19 that we should take into account when finalising the guideline for publication.

Contents

Recommendations

People have the right to be involved in discussions and make informed decisions about their care, as described in NICE's information on making decisions about your care.

Making decisions using NICE guidelines explains how we use words to show the 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.

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. **[2006]**

1.1.2 Perform a 12-lead electrocardiogram (ECG) if an irregular pulse is detected in people with suspected atrial fibrillation with or without symptoms. **[2020]**

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 the frequency of symptoms if symptomatic episodes are more than 24 hours apart. **[2020]**

For a short explanation of why the committee made the 2020 recommendations see the rationale and impact section on detection and diagnosis.

Full details of the evidence and the committee's discussion are in evidence review A: effectiveness of tests for detection and evidence review B: accuracy of tests for detection.

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.

See the section on review of people with atrial fibrillation for advice on reassessment of stroke risk. **[2020]**

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

Full details of the evidence and the committee's discussion are in evidence review C and D: tools to predict stroke in people with atrial fibrillation.

Bleeding risk

1.2.2 Use the ORBIT bleeding risk score to assess the risk of bleeding when considering starting anticoagulation in people with atrial fibrillation and when reviewing people already taking anticoagulation. **[2020]**

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

- uncontrolled hypertension (see NICE's guideline on hypertension in adults)
- poor control of international normalised ratio (INR) in patients on vitamin K antagonists
- concurrent medication, including antiplatelets and non-steroidal anti-inflammatory drugs (NSAIDs)
- harmful alcohol consumption (see NICE's guideline on alcohol-use disorders: diagnosis, assessment and management of harmful drinking and alcohol dependence)
- reversible causes of anaemia. **[2020]**

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 further guidance see the section on enabling patients to actively participate in their care in NICE's guideline on patient experience in adult NHS services. **[2020]**

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

Full details of the evidence and the committee's discussion are in evidence review E and F: risk stratification tools for predicting bleeding in people with atrial fibrillation.

1.3 Assessment of cardiac function

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

- for whom a baseline echocardiogram is important for long-term management
- 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). **[2006, amended 2014]**

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). **[2006, amended 2014]**

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. **[2006]**

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 in NICE's guideline on venous thromboembolic diseases
- support networks (for example, cardiovascular charities). **[2014]**

1.4.2 NICE has produced guidance on the components of good patient experience in adult NHS services. Follow the recommendations in NICE's guideline on patient experience in adult NHS services. **[2014]**

Medicines adherences and optimisation

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 optimisation. **[2020]**

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. **[2014]**

1.6 Stroke prevention

Anticoagulation

In 2020 the use of direct-acting oral anticoagulants described in recommendations 1.6.3, 1.6.4 and 1.6.5 was an off-label use in people with atrial fibrillation who do not have specific additional risk factors. See NICE's information on prescribing medicines.

1.6.1 When discussing the benefits and risks of anticoagulation use clinical risk profiles and personal preferences to guide treatment choices. Explain to 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. **[2020]**

1.6.2 Apixaban, dabigatran, edoxaban and rivaroxaban are all recommended as options, within their marketing authorisation, for the prevention of stroke and systemic embolism in people with non-valvular atrial fibrillation, in line with the criteria specified in the relevant NICE technology appraisal guidance on direct-acting oral anticoagulants.

1.6.3 Offer anticoagulation with either apixaban or dabigatran to people with atrial fibrillation and a CHA_2DS_2-VASc score of 2 or above, taking into account the risk of bleeding. For more information, see NICE's technology appraisals on apixaban for preventing stroke and systemic embolism in people with non-valvular atrial fibrillation and dabigatran etexilate for the prevention of stroke and systemic embolism in atrial fibrillation. **[2020]**

1.6.4 Consider anticoagulation with either apixaban or dabigatran for men with atrial fibrillation and a CHA_2DS_2-VASc score of 1, taking into account the risk of bleeding. For more information, see NICE's technology appraisals on apixaban for preventing stroke and systemic embolism in people with non-valvular atrial fibrillation and dabigatran etexilate for the prevention of stroke and systemic embolism in atrial fibrillation. **[2020]**

1.6.5 If apixaban and dabigatran are not tolerated in people with atrial fibrillation, offer anticoagulation with either edoxaban or rivaroxaban. For more information, see the NICE technology appraisals on edoxaban for preventing stroke and systemic embolism in people with non-valvular atrial fibrillation and rivaroxaban for the prevention of stroke and systemic embolism in people with atrial fibrillation. **[2020]**

1.6.6 If direct-acting oral anticoagulants are contraindicated, not tolerated or not suitable in people with atrial fibrillation, offer a vitamin K antagonist. **[2020]**

1.6.7 For adults with atrial fibrillation who are already taking a direct-acting oral anticoagulant other than apixaban and dabigatran or a vitamin K antagonist and are stable, discuss the option of switching treatment at their next routine appointment. **[2020]**

1.6.8 Do not offer stroke prevention therapy 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). [**2020]**

1.6.9 Do not withhold anticoagulation solely because of a person's age or their risk of falls. **[2020]**

NICE technology appraisal guidance on direct-acting oral anticoagulants

For NICE technology appraisal guidance on direct-acting oral anticoagulants to prevent stroke and systemic embolism in people with atrial fibrillation, see:

- Apixaban for preventing stroke and systemic embolism in people with non-valvular atrial fibrillation
- Dabigatran etexilate for the prevention of stroke and systemic embolism in atrial fibrillation
- Edoxaban for preventing stroke and systemic embolism in people with non-valvular atrial fibrillation
- Rivaroxaban for the prevention of stroke and systemic embolism in people with atrial fibrillation.

Note: The economic modelling for these recommendations was based on UK drug tariff prices at the time of consultation. NICE is aware that procurement of direct-acting anticoagulants for use in the NHS is ongoing and that the results of this may have an impact on this guidance.

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

Full details of the evidence and the committee's discussion are in evidence reviews G1 and G2: anticoagulant therapy for stroke prevention in people with atrial fibrillation.

Assessing anticoagulation control with vitamin K antagonists

1.6.10 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. **[2014]**

1.6.11 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%. **[2014]**

1.6.12 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. **[2014]**

1.6.13 If poor anticoagulation control cannot be improved, evaluate the risks and benefits of alternative stroke prevention strategies and discuss these with the person. **[2014]**

Self-monitoring and self-management of vitamin K antagonists

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).

Antiplatelets

For guidance on antiplatelet therapy for people having anticoagulation, see NICE's guideline on myocardial infarction: rehabilitation and prevention.

1.6.14 Do not offer aspirin monotherapy solely for stroke prevention to people with atrial fibrillation. **[2014]**

Review of people with atrial fibrillation

1.6.15 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.

[2014]

1.6.16 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. **[2014]**

1.6.17 For people who are taking an anticoagulant, review the need for anticoagulation and the quality of anticoagulation at least annually, or more frequently if clinically relevant events occur affecting anticoagulation or bleeding risk. **[2014]**

Left atrial appendage occlusion

1.6.18 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. **[2014]**

1.6.19 Do not offer LAAO as an alternative to anticoagulation unless anticoagulation is contraindicated or not tolerated. **[2014]**

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. **[2014]**

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. **[2020]**

In 2020 this was an off-label use of diltiazem. See NICE's information on prescribing medicines.

1.7.3 For people with atrial fibrillation and concomitant heart failure, follow the recommendations in on the use of beta-blockers and avoiding calcium-channel blockers in NICE's guideline on chronic heart failure. **[2020]**

1.7.4 Consider digoxin monotherapy for as 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. **[2020]**

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. **[2020]**

In 2020 this was an off-label use of diltiazem. See NICE's information on prescribing medicines.

1.7.6 Do not offer amiodarone for long-term rate control. **[2020]**

For a short explanation of why the committee made the 2020 recommendations see the rationale and impact section on rate control.

Full details of the evidence and the committee's discussion are in evidence review I: non-ablative rate control therapies.

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. **[2014]**

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. **[2014]**

1.7.9 Do not offer class 1c antiarrhythmic drugs such as flecainide or propafenone to people with known ischaemic or structural heart disease. **[2014]**

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. **[2014]**

1.7.11 If beta-blockers are contraindicated or unsuccessful, assess the suitability of alternative drugs for rhythm control, taking comorbidities into account. **[2014]**

1.7.12 Follow the advice on dronedarone as a 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.

1.7.13 Consider amiodarone for people with left ventricular impairment or heart failure. **[2014]**

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 considered and discussed with the person. **[2006]**

1.7.15 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. **[2006]**

Cardioversion

1.7.16 For people having cardioversion for atrial fibrillation that has persisted for longer than 48 hours, offer electrical (rather than pharmacological) cardioversion. **[2014]**

1.7.17 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. **[2014]**

1.7.18 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. **[2006]**

Left atrial ablation

1.7.19 Consider radiofrequency point-by-point ablation or laser ablation for people with symptomatic paroxysmal or persistent atrial fibrillation if drug treatment is unsuccessful, unsuitable or not tolerated. **[2020]**

1.7.20 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. **[2020]**

1.7.21 Consider left atrial surgical ablation at the same time as other cardiothoracic surgery for people with symptomatic atrial fibrillation (see also the section of this guideline on NICE interventional procedures guidance on left atrial ablation). **[2014]**

For a short explanation of why the committee made the 2020 recommendations see the rationale and impact section on left atrial ablation.

Full details of the evidence and the committee's discussion are in evidence reviews J1, J2 and J3: ablation.

NICE interventional procedures guidance on left atrial ablation

For NICE interventional procedures guidance on left atrial catheter ablation and left surgical ablation without thoracotomy, see:

- Percutaneous endoscopic laser balloon pulmonary vein isolation for atrial fibrillation
- Percutaneous (non-thoracoscopic) epicardial catheter radiofrequency ablation for atrial fibrillation.

For NICE interventional procedures guidance on left atrial surgical ablation in association with other cardiac surgery, see:

- High-intensity focused ultrasound for atrial fibrillation in association with other cardiac surgery
- Cryoablation for atrial fibrillation in association with other cardiac surgery
- Microwave ablation for atrial fibrillation in association with other cardiac surgery
- Radiofrequency ablation for atrial fibrillation in association with other cardiac surgery.

Preventing recurrence after ablation

1.7.22 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. **[2020]**

1.7.23 Reassess the need for antiarrhythmic drug treatment at 3 months after left atrial ablation. **[2020]**

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

Full details of the evidence and the committee's discussion are in evidence review K: antiarrhythmic drugs after ablation.

Pace and ablate strategy

1.7.24 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. **[2014]**

1.7.25 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. **[2014]**

1.7.26 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. **[2014]**

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. **[2014]**

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. **[2014]**

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. See also NICE's guideline on myocardial infarction: cardiac rehabilitation and prevention. **[2020]**

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. **[2014]**

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. **[2014]**

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. **[2006, amended 2014]**

1.8.7 Do not offer magnesium or a calcium-channel blocker for pharmacological cardioversion. **[2014]**

For a short explanation of why the committee made the 2020 recommendation see the rationale and impact section on rate and rhythm control for people presenting acutely.

Full details of the evidence and the committee's discussion are in evidence review I: non-ablative rate control therapies.

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). **[2006, amended 2014]**

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. **[2006, amended 2014]**

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). **[2006, amended 2014]**

1.9 Initial management of stroke and atrial fibrillation

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. **[2014]**

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. **[2006, amended 2014]**

In 2014 this was an off-label use of diltiazem. See NICE's information on prescribing medicines.

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). **[2006, amended 2014]**

1.10.3 Do not start statins in people having cardiothoracic surgery solely to prevent postoperative atrial fibrillation. **[2020]**

1.10.4 In people having cardiothoracic surgery who are already on statins, continue this treatment. For further advice on statins for the prevention of cardiovascular disease, see NICE's guideline on cardiovascular disease: risk assessment and reduction. **[2020]**

For a short explanation of why the committee made the 2020 recommendations see the rationale and impact section on preventing postoperative atrial fibrillation.

Full details of the evidence and the committee's discussion are in evidence review M: statins for preventing atrial fibrillation after cardiothoracic surgery.

Managing postoperative atrial fibrillation

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. **[2020]**

1.10.6 Manage postoperative atrial fibrillation after non-cardiothoracic surgery in the same way as for new-onset atrial fibrillation with any other cause. **[2006, amended 2014]**

1.10.7 In the prophylaxis and management of postoperative atrial fibrillation, use appropriate antithrombotic therapy and correct identifiable causes (such as electrolyte imbalance or hypoxia). **[2006, amended 2014]**

For a short explanation of why the committee made the 2020 recommendation see the rationale and impact section on managing postoperative atrial fibrillation.

Full details of the evidence and the committee's discussion are in evidence review L: treatment strategies for 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. **[2020]**

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. **[2020]**

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

Full details of the evidence and the committee's discussion are in evidence review H: discontinuing anticoagulation in people whose atrial fibrillation has resolved.

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.

Recommendations for research

As part of the 2020 update, the guideline committee made 4 new research recommendations (marked **[2020]**). Research recommendations retained from the 2014 guideline are labelled **[2014]**.

Key recommendations for research

1 Tests to diagnose persistent atrial fibrillation

What is the diagnostic accuracy of key index tests (such as Alive Cor, MyDiagnostik, Microlife BP monitors, iPhone plethysmography and pulse palpation) compared with the gold standard of 12-lead ECG in people with risk factors for or symptoms of atrial fibrillation? **[2020]**

For a short explanation of why the committee made this recommendation see the rationale section on detection and diagnosis.

Full details of the evidence and the committee's discussion are in evidence review B: accuracy of tests for detection.

2 Tests to diagnose paroxysmal atrial fibrillation

What is the diagnostic accuracy of key index tests compared with the gold standard of prolonged ambulatory monitoring in people suspected of having paroxysmal atrial fibrillation? **[2020]**

For a short explanation of why the committee made this recommendation see the rationale section on detection and diagnosis.

Full details of the evidence and the committee's discussion are in evidence review B: accuracy of tests for detection.

3 Stopping anticoagulation after ablation

What is the clinical and cost effectiveness of stopping anticoagulation in people whose atrial fibrillation has resolved after ablation? **[2020]**

For a short explanation of why the committee made this recommendation see the rationale section on stopping anticoagulation.

Full details of the evidence and the committee's discussion are in evidence review H: discontinuing anticoagulation in people whose atrial fibrillation has resolved.

4 Stopping anticoagulation after resolution of postoperative atrial fibrillation

What is the clinical and cost effectiveness of stopping anticoagulation in people whose postoperative atrial fibrillation after cardiac surgery has resolved? **[2020]**

For a short explanation of why the committee made this recommendation see the rationale section on stopping anticoagulation.

Full details of the evidence and the committee's discussion are in evidence review H: discontinuing anticoagulation in people whose atrial fibrillation has resolved.

5 Cognitive behavioural therapy for people with atrial fibrillation

What is the clinical and cost effectiveness of cognitive behavioural therapy compared with usual care for people with newly diagnosed atrial fibrillation? **[2014]**

6 Rate-control drug treatment for people aged 75 and over with atrial fibrillation

What is the comparative effectiveness of the 3 main drug classes used for rate control (beta-blockers, calcium-channel blockers and digoxin) in people aged 75 and over with atrial fibrillation in controlling symptoms, improving quality of life and reducing morbidity and mortality? **[2014]**

7 Stroke risk assessment

Can routine data from UK primary care databases clarify stroke risk in people with atrial fibrillation according to baseline risk factors and treatment? **[2014]**

Rationale and impact

These sections briefly explain why the committee made the recommendations and how they might affect practice.

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 test for persistent atrial fibrillation in a 2-test 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. The committee made a research recommendation on tests to diagnose persistent atrial fibrillation 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.

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 overestimating 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 CHA2DS2-VASc (fewer false-positive results) it had lower sensitivity, meaning that more people at risk would be missed (false-negative results) compared with the CHA2DS2-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 the ORBIT score was the most appropriate bleeding risk tool. The evidence showed that it was the most accurate tool to predict risk of major bleeding, both for people using vitamin K antagonists and those using direct-acting oral anticoagulants. The committee were aware that some studies showed that ORBIT places more patients in the low-risk category than HAS-BLED, thus

potentially under-predicting their major bleeding risk. However, overall the committee agreed that the data supported the use of ORBIT.

There was evidence showing that ORBIT was the best tool at identifying bleeding risk in people using direct-acting oral anticoagulants, which are used by many people having anticoagulation.

The committee emphasised the importance of using a bleeding risk tool to inform plans to reduce reversible causes of bleeding. The committee agreed that the 2014 advice on monitoring and addressing modifiable risk factors is still relevant, and added reversible causes of anaemia because it is a component of the ORBIT tool.

How the recommendations might affect practice

The use of the ORBIT score is a change in practice. It involves measuring some parameters, such as haemoglobin and haematocrit, that are not included in the HAS-BLED tool used in current practice. The committee noted that these factors would be measured routinely for people starting anticoagulation, regardless of the risk tool used, so extra resources are unlikely to be needed. For people who are not being considered for anticoagulation, these tests may not be routinely done. As a result this could have a resource impact.

Return to recommendations

Stroke prevention

Recommendations 1.6.1 to 1.6.9

Why the committee made the recommendations

Evidence from an analysis of several studies and an economic model demonstrated that direct-acting oral anticoagulants are more effective than warfarin for a number of outcomes. Results from the indirect comparisons based on the clinical evidence showed that the direct-acting oral anticoagulants performed differently depending on the outcome. When all these outcomes were combined in the cost-effectiveness analysis, apixaban was the clinically most effective option, followed by rivaroxaban and dabigatran. When costs were also considered, apixaban and dabigatran emerged as the most cost-effective options, based on their list prices. Apixaban has

lower rates of gastrointestinal bleeding, major bleeding, clinically relevant non-major bleeding and myocardial infarction when compared with dabigatran. Dabigatran has lower rates of all stroke or systemic thromboembolism, and ischaemic stroke (with some uncertainty) when compared with apixaban. The committee agreed that the risks and benefits of changing medication should be discussed with people who are stable on anticoagulants other than apixaban or dabigatran.

The committee noted that vitamin K antagonists are indicated in people for whom direct-acting oral anticoagulants are not suitable, for example due to low creatinine clearance.

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

The committee agreed that it is important to provide information and education to ensure the benefits and harms are fully understood, in line with the section on shared decision making in NICE's guideline on patient experience in adult NHS services.

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 2014 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. This may lead to a contraction in warfarin clinic services. The unit cost of direct-acting anticoagulants is greater than the unit cost of warfarin and so there is likely to be a resource impact in more people receiving direct-acting anticoagulants. The unit costs of direct-acting anticoagulants are similar, so increased use of apixaban and dabigatran over other direct-acting anticoagulants is unlikely to have a significant resource impact.

Return to recommendations

Rate control

Recommendations 1.7.2 to 1.7.6

Why the committee made the recommendations

The committee made some changes 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. However, based on its experience, the committee agreed that it may also be considered as a treatment option when other rate-limiting drugs are not suitable.

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.

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.

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 1.7.20

Why the committee made the recommendations

The committee reviewed new clinical and health economic evidence for the different types of ablation and updated the recommendations based on this.

The evidence showed that laser ablation was more cost effective over a lifetime than antiarrhythmic drug treatment and other ablation strategies in people for whom 1 or more antiarrhythmic drug has failed. Radiofrequency point-by-point ablation was ranked the second most cost-effective option and in some analyses was the most cost-effective option. Therefore the committee agreed that radiofrequency point-by-point ablation and laser ablation should be considered in people with symptomatic paroxysmal atrial fibrillation if drug treatment is unsuccessful or unsuitable or not tolerated. There was limited evidence for ablation in people with persistent atrial fibrillation. Despite this, the committee decided that the evidence, combined with their experience and knowledge (including noting the CABANA study, which contained a mixed population of people with persistent and paroxysmal atrial

fibrillation), was sufficient to support ablation as an option to be considered for those with persistent symptoms that are not alleviated by or who cannot have antiarrhythmic drugs. The committee agreed that ablation can be effective and that this population might have as much to gain from ablation as people with paroxysmal symptoms. The committee agreed that the cost-effectiveness analyses of different types of ablation in paroxysmal atrial fibrillation could also be applied to this population.

The committee emphasised the importance of discussing the risks and benefits with the person – in particular the risk of adverse events. The discussion should also include that, in the experience of the committee, the effects of ablation may not be long term.

How the recommendations might affect practice

The committee noted that the recommendations are likely to reinforce current practice, which is relatively restricted – 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 recommendation is likely to lead to a change in the types of ablation offered, with fewer people receiving other catheter ablation techniques, such as cryoballoon ablation.

Although the guidance specifies radiofrequency point-by-point ablation and laser over other ablation techniques as these were the most cost effective, this does not mean that other techniques such as cryoballoon are prohibited. Furthermore, if a person's preferences include factors such as avoiding general anaesthetic, cryoballoon may be the ablation technique of choice.

Return to recommendations

Preventing recurrence after ablation

Recommendations 1.7.22 and 1.7.23

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 taking antiarrhythmic drugs previously 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 provision 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 avoiding beta-blockers and rate-limiting calcium-channel blockers should be included because their use 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

Recommendation 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 postoperative atrial fibrillation

Recommendation 1.10.5

Why the committee made the recommendations

The evidence on managing postoperative atrial fibrillation 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 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

Recommendation 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. The committee therefore developed research recommendations on stopping anticoagulation after ablation and stopping anticoagulation after resolution of postoperative atrial fibrillation to encourage further research.

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 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. The committee developed a research recommendation to encourage further research in this area.

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 patients 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. As 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 and committee details

To find NICE guidance on related topics, including guidance in development, see the NICE webpage on cardiovascular conditions.

For details of the guideline committee see the committee member list.

Update information

This guideline is an update of NICE guideline CG180 (published June 2014) and will replace it.

We have reviewed the evidence on diagnosis and assessment, assessment of stroke and bleeding risks, preventing stroke, rate and rhythm control, preventing recurrence, and preventing and managing postoperative atrial fibrillation for people with atrial fibrillation.

Recommendations are marked **[2020]** if the evidence has been reviewed.

Recommendations that have been deleted, or changed without an evidence review

We propose to delete some recommendations from the 2014 guideline. Table 1 sets out these recommendations and includes details of replacement recommendations. If there is no replacement recommendation, an explanation for the proposed deletion is given.

For recommendations shaded in grey and ending **[2014] or [2006]**, we have not reviewed the evidence. In some cases minor changes have been made – for

example, to update links, or bring the language and style up to date – without changing the intent of the recommendation. Minor changes are listed in table 2.

See also the previous NICE guideline and supporting documents.

Table 1 Recommendations that have been deleted

Recommendation in 2014 guideline	Comment
1.5.5 to 1.5.10	These recommendations covered the guidance in the relevant technology appraisals. This update cross refers to the appraisals but makes new recommendations on what anticoagulants to offer

Table 2 Minor changes to recommendation wording (no change to intent)

Recommendation numbers in current guideline	Comment
1.1.1	Changes were made to be clear that the symptoms listed are examples of possible presenting symptoms and not an exhaustive list.
1.3.2, 1.3.3	Changes were made to update the wording for clear English.
1.5.1	The timeframe was moved from a footnote into the recommendation in line with current NICE style for accessibility. The wording of the footnote was edited in line with NICE style.
1.6.10	Changes were made to update the wording to more person-centred language.
1.7.2	A cross reference was added to a new section on further NICE guidance. This replaced a footnote, in line with current advice on accessibility.
1.7.14	The definition for 'pill-in-the-pocket' strategy was moved from a footnote into the recommendation in line with current NICE style for accessibility.
1.7.18	Changes were made to update the wording for clear English.
1.8.2, 1.8.9	Changes were made to update the wording for clear English.
1.9.9	Factors indicating a high risk of atrial fibrillation recurrence were moved from a footnote into the recommendation in line with current NICE style for accessibility. The wording of the footnote was edited in line with NICE style.
1.11.2, 1.11.6, 1.11.7	Changes were made to update the wording for clear English.

February 2016: Recommendation 1.9.5 was amended to clarify the populations referred to and their treatment choices.

August 2014: The wording of recommendation 1.9.2 was clarified, and now refers to people without life-threatening haemodynamic instability.

June 2014: This guideline updated and replaced NICE clinical guideline 36 (published June 2006). New recommendations were added for a personalised package of care and information, referral for specialised management, stroke prevention, rate and rhythm control and the management of acute atrial fibrillation.