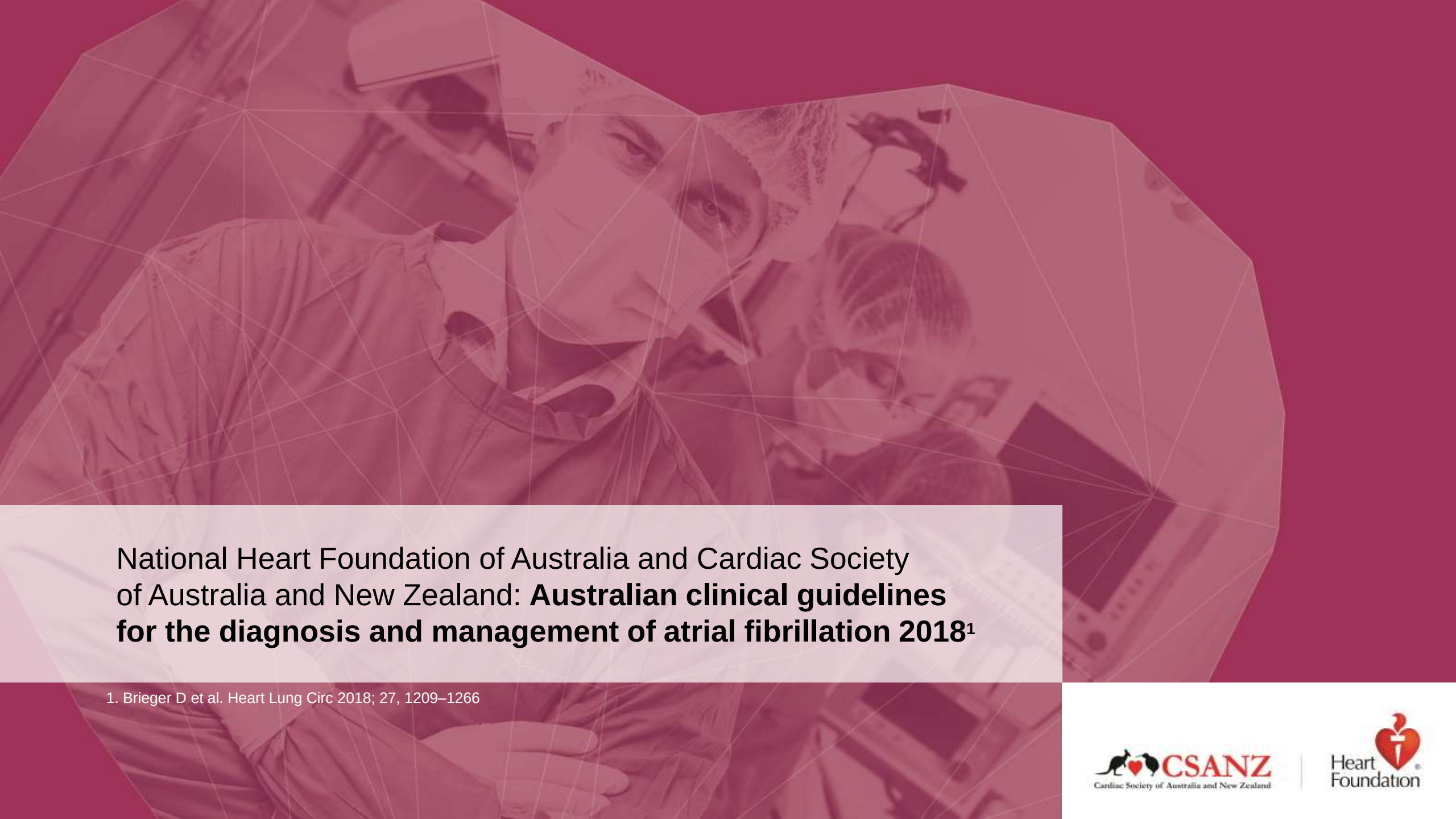

National Heart Foundation of Australia and Cardiac Society of Australia and New Zealand: **Australian clinical guidelines for the diagnosis and management of atrial fibrillation 2018**[1]

1. Brieger D et al. Heart Lung Circ 2018; 27, 1209–1266

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I would like to acknowledge the Traditional Owners of this Land
on which we are meeting today.

I would also like to pay respect to the Elders past, present and emerging.

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# Prevalence

- Atrial fibrillation(AF) occurs in 2-4% of the population in developed nations like Australia.
- It is the most common recurrent arrhythmia faced in clinical practice, and it causes substantial morbidity and mortality.
- In 2016, AF and flutter was the underlying cause of 2,128 deaths in Australia, accounting for 1.3 percent of total deaths.
  - Six deaths due to atrial fibrillation and flutter each day.[1]
- AF imposes a large and growing burden on healthcare resources, with hospitalisations being the major cost driver.[2]
  - 10 to 30% of patients with AF are admitted to hospital each year for cardiovascular and non-cardiovascular causes.[3]


1. Australian Bureau of Statistics 2017, Causes of Death 2016, ABS cat. no. 3303.0, September
2. Stewart S et al. Heart. 2004;90(3):286-92.
3. Devore AD et al. Europace. 2016;18(8):1135-42.

# Background

- These guidelines have been developed to assist Australian clinicians in the diagnosis and management of adult patients with AF
- They are informed by recent evidence interpreted by local experts to optimise application in an Australian context
- They are the first Australian guidelines on the topic

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# Working Group

- The guideline working group was facilitated by the NHFA, in partnership with the CSANZ.
- An expert working group was appointed comprising cardiologists, an epidemiologist and physician, a pharmacist, nurses, a consumer, general practitioners, a neurologist, and a cardiothoracic surgeon.
- A reference group was established comprising representatives of key stakeholder organisations with national relevance to the provision of AF care in Australia.

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# The process for developing the guidelines: literature review

- The working group generated clinical questions to form the basis of external literature searches in consultation with the clinical expert committees of NHFA and CSANZ and the reference group.
- Conducted by an external reviewer (Joanna Briggs Institute)

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# The process for developing the guidelines: governance

- Processes in place to ensure transparency, minimise bias, manage conflict of interest, and limit other influences during development.

- Recommendations developed using GRADE methodology (Grading of Recommendations Assessment, Development and Evaluation)
  - Strength of recommendation (weak or strong) AND
  - Quality of evidence

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# The process for developing the guidelines: review

- Public consultation period of 21 days in April 2018 on the draft manuscript
- NHFA and CSANZ clinical committee approval prior to and after public consultation
- NFHA and CSANZ board approval after public consultation
- Reviewed by key stakeholder organisations (reference group) prior to and after public consultation
- Endorsed by key stakeholder organisations
- Publication in peer review journals August 2018

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# What is new compared to international guidelines?

- First Australian AF guideline
- International guidelines on the diagnosis and management of AF are available,[1, 2] but individual recommendations can differ
- Based on new and emerging evidence (since the ESC 2016 guidelines):
  - Novel risk factors (obesity, sleep apnoea, sedentary lifestyle)
  - The use of catheter ablation
  - Combining anticoagulants and antiplatelets
- Based on consensus opinion:
  - Changed stroke prediction score – in nomenclature only – the sexless $CHA_2DS_2$-VA. (Recommended clinical thresholds for anticoagulation treatment remain the same as the ESC).
  - More emphasis on integrated care.

1. Kirchhof P, et al. Eur Heart J, 2016.
2.January CT, et alCirculation, 2014. **130**(23): 2071-2104.

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# Recommendations

# Screening and prevention

# Screening and prevention

| Recommendation | GRADE quality of evidence | GRADE strength of recommendation |
|---|---|---|
| Opportunistic point-of-care screening in the clinic or community should be conducted in people aged 65 years or more. | Moderate | Strong |
| Pacemakers and defibrillators should be interrogated regularly for atrial high-rate episodes (AHRES), and should be confirmed by atrial electrocardiogram (EGM) to be AF. | Moderate | Strong |

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# Screening and prevention – practice points

- Opportunistic point-of-care screening
  - Devices that provide a medical quality electrocardiogram trace are preferred to pulse-taking or pulse-based devices for screening, because an electrocardiogram is required to confirm the diagnosis.
- Implantable device interrogation
  - Detection of AHREs on devices indicates a high risk of subsequent development of clinical AF.[1,2] If AHRE is detected, further assessment of stroke risk factors and surveillance for development of clinical AF should be performed.[3]


1. Mahajan R, et alEur Heart J, 2018. **39**(16): 1407-1415.
2. Freedman B et al. Nat Rev Cardiol, 2017. **14**(12): 701-714.
3. Kirchhof P, et al.. Europace, 2012. **14**(1): 8-27.

# Diagnostic work up and prevention

| Recommendation | GRADE quality of evidence | GRADE strength of recommendation |
|---|---|---|
| A transthoracic echocardiogram (TTE) should be performed in all patients with newly diagnosed AF. | Low | Strong |
| Intercurrent risk factors and comorbidities – including hypertension, diabetes, heart failure, valvular heart disease and alcohol excess – should be identified and their management considered an important component of treatment in patients with AF. | Low | Strong |

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# Diagnostic work up and prevention – practice points

- TTE for all patients
  - A TTE can identify valvular heart disease and quantify left ventricular (LV) function and atrial size.  Transoesophageal echocardiography (TOE) can be considered primarily where electrical or pharmacological cardioversion is indicated and the presence of intra-cardiac thrombus may affect timing.
- Risk factor identification
  - The more risk factors that an individual has, the greater the likelihood that a person will develop AF and more persistent AF.[1,2] With the burden of AF increasing at rates greater than those predicted by known risk factors, there has been interest in several newer risk factors,[3] including obesity, sleep apnoea, physical inactivity and prehypertension.[4-8] Physician-led intervention of weight and risk factor management in overweight and obese patients has been shown to lead to a marked reduction in AF burden, and to an improvement in quality of life in patients with paroxysmal AF.[9]


1. Schotten U, et al. Physiol Rev, 2011. **91**(1): 265-325.
2. Chamberlain et al. Am J Cardiol, 2011. **107**(1): 85-91.
3. Miyasaka et al. Circulation, 2006. **114**(2): 119-125.
4. Gami AS, et al. J Am Coll Cardiol, 2007. **49**(5): 565-571.
5. Tedrow UB, et al. J Am Coll Cardiol, 2010. **55**(21): 2319-2327.
6. Lau DH,, et al.. PloS One, 2013. **8**(10): e76776.
7. Mozaffarian, et al. Circulation, 2008. **118**(8): 800-807.
8. Huxley RR,, et al Circ Arrhythm Electrophysiol, 2014. **7**(4): 620-625.
9. Abed HS, et al. JAMA, 2013. **310**(19): 2050-2060.


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# Arrhythmia management

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# Arrhythmia management

| Recommendation | GRADE quality of evidence | GRADE strength of recommendation |
|---|---|---|
| A rhythm-control or a rate-control strategy should be selected, documented and communicated for all AF patients, and this strategy should be reviewed regularly. | Low | Strong |

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# Arrhythmia management – practice point

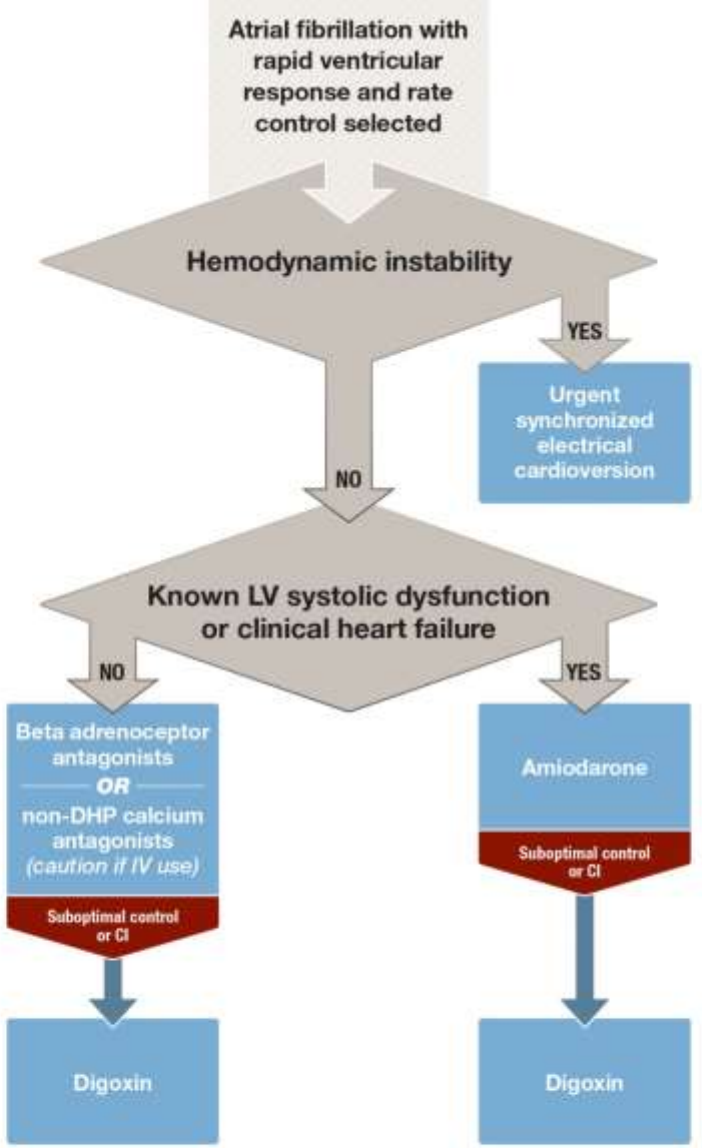
- Rhythm or rate control strategy
  - Factors favouring rhythm over rate control include
    - patients who are younger, more physically active and highly symptomatic;
    - paroxysmal or early persistent AF;
    - LV dysfunction;
    - no severe left atrial enlargement;
    - adequate control of the ventricular rate is difficult to achieve.
  - A rate-control strategy may be used in preference to rhythm-control in patients with minimal symptoms or in those in whom attempts at maintaining sinus rhythm are likely to be or are futile.

# Arrhythmia management – Acute rate control

| Recommendation | GRADE quality of evidence | GRADE strength of recommendation |
|---|---|---|
| Beta adrenoceptor antagonists or non-dihydropyridine calcium channel antagonists are recommended for **acute control** of the ventricular rate in haemodynamically stable patients, although caution is needed if given intravenously. | Low | Strong |

1. Segal JB, et al. J Fam Pract, 2000. **49**(1): 47-59.

# Acute rate control of atrial fibrillation with rapid ventricular response




LV left ventricular | DHP dihydropyridine | IV intravenous | CI contraindications

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# Acute rate control – practice points

- Oral administration of these agents is sufficient in many situations.
- A more rapid onset of action may be seen with careful administration of intravenous aliquots of metoprolol or esmolol.
- Intravenous verapamil must be used with extreme caution because of its strong negative inotropic effect.
- Digoxin may be considered in addition to the above agents, but it has a delayed onset of action and has a weak effect in terms of rate control, particularly when used as monotherapy.[1]
- In patients with marginal haemodynamic reserve, established heart failure or other significant structural heart disease, amiodarone may be the most effective rate-control option

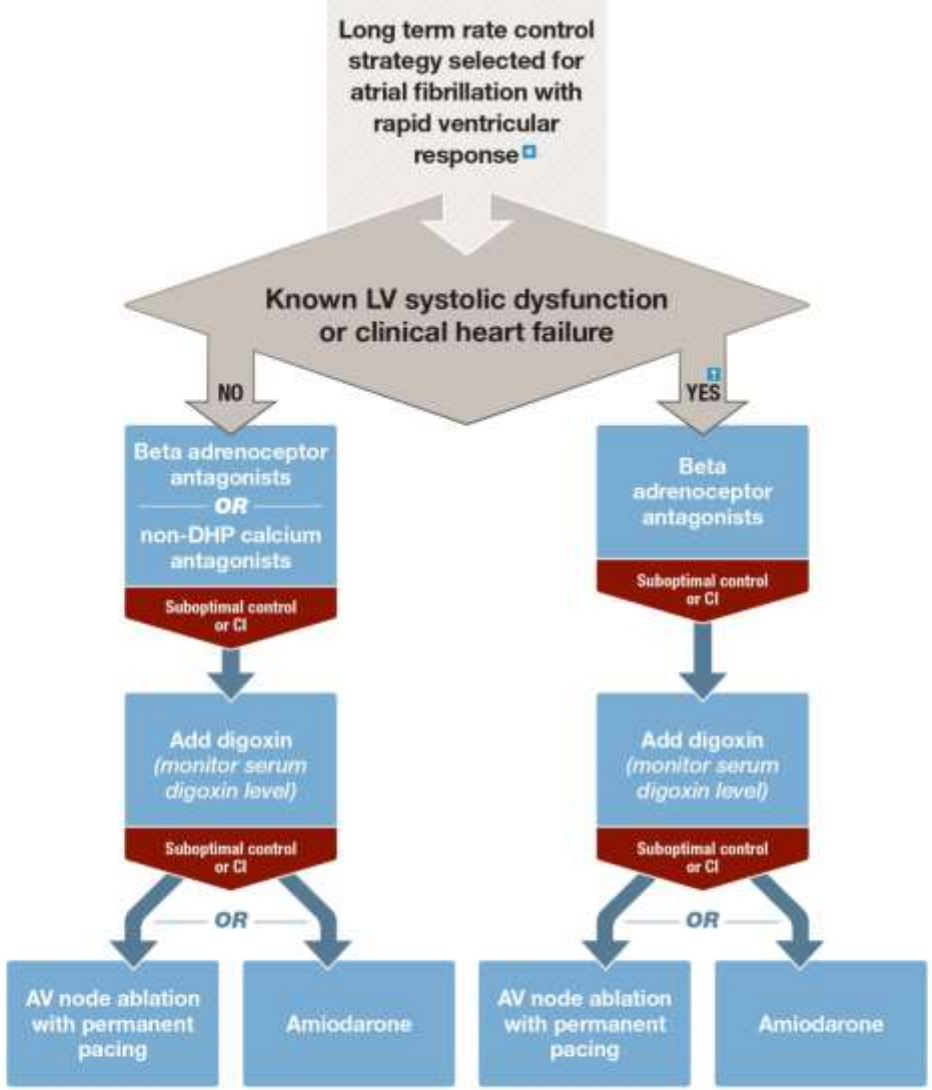
1. Schreck DM et al. Ann Emerg Med, 1997. **29**(1): 135-140.

# Arrhythmia management – Acute rate control

| Recommendation | GRADE quality of evidence | GRADE strength of recommendation |
|---|---|---|
| Beta adrenoceptor antagonists or non-dihydropyridine calcium channel antagonists should be the first-line agents used for long-term control of the ventricular rate.[1] | Moderate | Strong |

1. Segal JB, et al. J Fam Pract, 2000. **49**(1): 47-59.

# Chronic rate control of atrial fibrillation with rapid ventricular response




* Ensure membrane-active antiarrhythmic rhythm control agents are ceased once rate control strategy adopted

† Re-evaluate the potential role of a rhythm control strategy (in particular with catheter ablation) in heart failure patients with the goal of reversing systolic dysfunction and improving prognosis

**LV** left ventricular | **DHP** dihydropyridine | **IV** intravenous | **CI** contraindications | **AV** atrioventricular | **AF** atrial fibrillation

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# Long-term rate control – practice points

- Digoxin can be useful as a second-line agent or in combination with beta-blockers or calcium antagonists
  - if used, serum concentration should be monitored -aim levels < 1.2ng/mL.
- Verapamil and diltiazem should not be used in the presence of left ventricular systolic dysfunction
- Amiodarone should be considered a last-line option, given its toxicity profile.
- Membrane-active rhythm-control agents (e.g. flecainide or sotalol) should not be continued in patients being started on or transitioned to a long-term rate-control strategy.

# Arrhythmia management - acute rhythm control

| Recommendation | GRADE quality of evidence | GRADE strength of recommendation |
|---|---|---|
| Electrical cardioversion should be performed urgently in haemodynamically unstable patients with AF. | Low | Strong |
| Electrical cardioversion can be considered – either as a first-line option or when pharmacological rhythm control fails – in haemodynamically stable patients, after consideration of thromboembolic risk. | Low | Strong |
| Flecainide can be considered for rapid conversion to sinus rhythm, either intravenously or orally, in patients without left ventricular systolic dysfunction, moderate left ventricular hypertrophy or coronary artery disease, after consideration of thromboembolic risk. | Moderate | Strong |

# Acute rhythm control – practice points

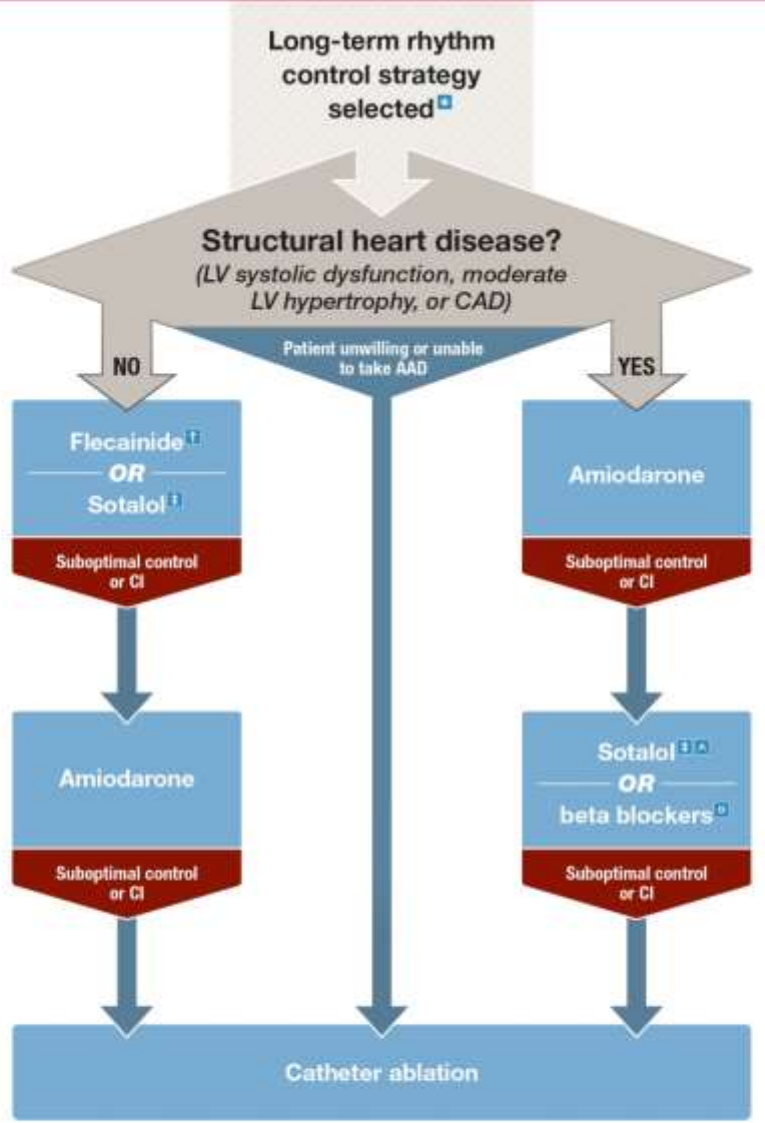
- There is a high spontaneous reversion rate to sinus rhythm for new onset AF within 48 hours, so a ‘wait and watch’ approach with rate control may be reasonable in a mildly symptomatic patient.
- Flecainide or amiodarone are the recommended drugs for pharmacologic cardioversion.
  - Flecainide results in earlier and more effective conversion to sinus rhythm when compared with amiodarone.[1,2]
  - Atrioventricular nodal blocking medication should be administered to patients prior to flecainide to avoid 1:1 conduction of atrial flutter.
- In patients with an AF duration of more than 48 hours or of unknown duration, acute rhythm control should generally not be attempted unless left atrial thrombus is excluded with TOE.


1. Capucci A et al. Am J Cardiol, 1992. **70**(1): 69-72.
2. Chevalier P et al. J Am Coll Cardiol, 2003. **41**(2): 255-262.

# Arrhythmia management - long-term rhythm control

| Recommendation | GRADE quality of evidence | GRADE strength of recommendation |
|---|---|---|
| Flecainide can be considered in the maintenance of sinus rhythm in patients without left ventricular systolic dysfunction, moderate left ventricular hypertrophy or coronary artery disease. | High | Strong |
| Amiodarone can be considered for maintenance of sinus rhythm as a second-line agent or as a first-line agent in patients with left ventricular systolic dysfunction, moderate left ventricular hypertrophy or coronary artery disease. | High | Strong |

# Long term rhythm control strategies




- ✱ See table 2 for factors favouring rhythm control strategy
- † With AV nodal blocking agent
- ‡ Close monitoring of QT interval recommended
- ^ May worsen heart failure, contraindicated in patients LVEF<40%
- ° Indicated in patients with heart failure with reduced ejection fraction, may be less effective than other AAD in maintenance of sinus rhythm

**LV** left ventricular | **CAD** coronary artery disease | **AV** atrioventricular | **AAD** antiarrhythmic drugs | **AF** atrial fibrillation | **CI** contraindicated | **LVEF** left ventricular ejection fraction

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# Long-term rhythm control – practice points

- Amiodarone has superior efficacy over other antiarrhythmic drugs (AADs) or placebo in maintenance of sinus rhythm. [1-3] [4, 5]
  - However, amiodarone is associated with potential long-term toxicities, and therefore should not be a first-line treatment choice
- Flecainide should be used in conjunction with an atrioventricular nodal block agent.
- Sotalol has modest efficacy in maintenance of sinus rhythm[1, 2, 6, 7]
  - torsades de pointes occurs in about 2% of patients[8] necessitating close monitoring of the QT interval for all patients.[9]
- Beta blockers are generally regarded as less effective than AAD in the maintenance of sinus rhythm.[4, 10, 11]


1.Singh BN, et al. N Engl J Med. 2005;352(18):1861-72.
2.Roy D, et al. N Engl J Med. 2000;342(13):913-20.
3.N Engl J Med. 2002;347(23):1825-33.
4.Lafuente-Lafuente C, et al. Cochrane Database Syst Rev. 2015(3):Cd005049.
5.McNamara RL, et al. Ann Intern Med. 2003;139(12):1018-33.
6.Benditt DG, et al. Am J Cardiol. 1999;84(3):270-7.
7.Fetsch T, et al. Eur Heart J. 2004;25(16):1385-94.
8.MacNeil DJ, et al. Am J Cardiol. 1993;72(4):44a-50a.
9.Tisdale JE, et al. Circ Cardiovasc Qual Outcomes. 2013;6(4):479-87.
10.Kirchhof P, et al. Eur Heart J. 2016.
11.January CT, et al. Circulation. 2014;130(23):2071-104.


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# Percutaneous catheter AF ablation

| Recommendation | GRADE quality of evidence | GRADE strength of recommendation |
|---|---|---|
| Catheter ablation should be considered for symptomatic paroxysmal or persistent AF refractory or intolerant to at least one Class I or III antiarrhythmic medication. | High | Strong |
| Catheter ablation can be considered for symptomatic paroxysmal or persistent AF in selected patients with heart failure with reduced ejection fraction. | Moderate | Strong |

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# Percutaneous catheter ablation– practice points

- AF ablation is an effective procedure for appropriately selected patients with symptomatic AF. [1]
  - Recent evidence demonstrates that the procedure may have a mortality benefit in patients with heart failure.[2]
- In the discussion with the patient it is important to emphasise that 20–30% of ablation patients will require a second procedure within the first 12 months.
- Major complication rates from experienced Australian institutions have been about 1%.[3]
- In patients at increased risk of stroke, anticoagulation should be continued indefinitely, even following a successful procedure.

1.Kalla M, et al. Heart Lung Circ. 2017;26(9):941-9.
2.Marrouche NF, et al. N Engl J Med. 2018;378(5):417-27.
3.Voskoboinik A, et al. Heart Lung Circ. 2018.

# Surgical management of AF

| Recommendation | GRADE quality of evidence | GRADE strength of recommendation |
|---|---|---|
| Surgical ablation of AF to restore sinus rhythm in the context of concomitant cardiac surgery may be considered for patients with symptomatic paroxysmal, persistent or long-standing persistent AF. | Moderate | Strong |

# Surgical management of AF– practice points

- Most of the studies comparing coronary artery bypass grafting (CABG) with concomitant surgical ablation of AF with CABG alone showed a reduction in AF recurrence, and no significant difference in morbidity or mortality.[1-4]


1.Cherniavsky A, et al. Interact Cardiovasc Thorac Surg. 2014;18(6):727-31.
2.Ad N, et al. J Thorac Cardiovasc Surg. 2012;143(4):936-44.
3.Damiano RJ, Jr., et al. J Thorac Cardiovasc Surg. 2003;126(6):2016-21.
4.Geidel S, et al. Thorac Cardiovasc Surg. 2011;59(4):207-12.


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# Stroke prevention

# Predicting stroke and bleeding risk

| Recommendation | GRADE quality of evidence | GRADE strength of recommendation |
|---|---|---|
| The $CHA_2DS_2$-VA score – the sexless $CHA_2DS_2$-VASc score – is recommended for predicting stroke risk in AF. | Moderate | Strong |

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# Definitions and points in the $CHA_2DS_2$-VA score

| Score | Points | Definition |
|---|---|---|
| **C** | 1 | Congestive heart failure – recent signs, symptoms or admission for decompensated heart failure; this includes both HFREF and HFPEF, or moderately to severely reduced systolic left ventricular function, whether or not there is a history of heart failure |
| **H** | 1 | History of Hypertension, whether or not BP is currently elevated |
| **$A_2$** | 2 | Age ≥75 years |
| **D** | 1 | Diabetes |
| **$S_2$** | 2 | History of prior Stroke or TIA or systemic thromboembolism |
| **V** | 1 | Vascular disease, defined as prior myocardial infarction or peripheral arterial disease or complex aortic atheroma or plaque on imaging (if performed) |
| **A** | 1 | Age 65–74 years |

# Predicting stroke risk – practice points

- To avoid the cumbersome practice of selecting different $CHA_2DS_2$-VASc thresholds for males and females when recommending anticoagulation, these guidelines recommend a sexless $CHA_2DS_2$-VASc score, abbreviated as $CHA_2DS_2$-VA score
- Stroke risk factors may change over time due to ageing or development of new comorbidities.
  - Annual review of low-risk patients is recommended to ensure that risk is adequately characterised to guide oral anticoagulant (OAC) therapy.

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# Predicting stroke and bleeding risk

| Recommendation | GRADE quality of evidence | GRADE strength of recommendation |
|---|---|---|
| Reversible bleeding factors should be identified and corrected in AF patients for whom anticoagulation is indicated. | Low | Strong |

# Bleeding risk factors

1.Chiang C-E, et al. J Formos Med Assoc.115(11):893-952.
2.Goldsmith K, et al. Intern Med J. 2017;47:7-.
Table adapted from the 2016 European Society of Cardiology (ESC) guidelines[1] with permission

| Modifiable bleeding risk factors | Comment |
|---|---|
| Hypertension (SBP >160) | Blood pressure control reduces the potential risk of bleeding |
| Labile INR (TTR <60%) | Consider changing to a NOAC |
| Concomitant medications including antiplatelet agents and NSAIDs<br>Excess alcohol (>8 drinks per week) | Minimise duration of double or triple therapy in patients with coronary disease and AF |
| Potentially modifiable bleeding risk factors | Correct these factors where possible |
| Anaemia | |
| Impaired renal function | Monitor, especially in situations when renal function may be affected |
| Impaired liver function | |
| Frailty and falls | Walking aids, footwear, aged care home review |
| **Non-modifiable bleeding risk factors** | |
| Advanced age | Stroke risk outweighs bleeding risk |
| History of major bleeding | |
| Previous stroke | Risk of recurrent stroke outweighs risk of bleeding |
| Dialysis-dependent kidney disease | The role of anticoagulation (warfarin only indicated) in this population is controversial |
| Cirrhotic liver disease | Contraindication to NOACs (these patients are excluded from trials); consider advice from hepatologist |
| Malignancy | Individualise decisions about anticoagulation based on risk and benefit |
| Genetic or racial variation | Subgroup analyses from the NOAC versus warfarin RCTs suggest that, when warfarin is used, Asian patients are at higher risk of major bleeding and ICH than non-Asians; standard-dose NOACs appear to be as effective in Asians as non-Asians[1]<br>ICH risk is high in Aboriginal and Torres Strait Islander patients on anticoagulation[2]<br>Pay careful attention to blood pressure control in these populations |

# Prediction and minimisation of bleeding risk – practice points

- Patients at high risk of stroke are also at high risk of major bleeding.[1]
- The net clinical benefit almost always favours stroke prevention over major bleeding
  - bleeding risk scores should **not** be used to avoid anticoagulation in patients with AF.
- Treating reversible bleeding risk should be prioritised to minimise the bleeding rate in patients on anticoagulants.

1.Zhu W, et al. Clin Cardiol. 2015;38(9):555-61.

# Stroke prevention

| Recommendation | GRADE quality of evidence | GRADE strength of recommendation |
|---|---|---|
| Oral anticoagulation therapy to prevent stroke and systemic embolism is recommended in patients with non-valvular AF (N-VAF) whose $CHA_2DS_2$-VA score is 2 or more, unless there are contraindications to anticoagulation. | High | Strong |
| Oral anticoagulation therapy to prevent stroke and systemic embolism should be considered in patients with N-VAF whose $CHA_2DS_2$-VA score is 1. | Moderate | Strong |
| Oral anticoagulation therapy to prevent thromboembolism and systemic embolism is not recommended in patients with N-VAF whose $CHA_2DS_2$-VA score is 0. | Moderate | Weak |

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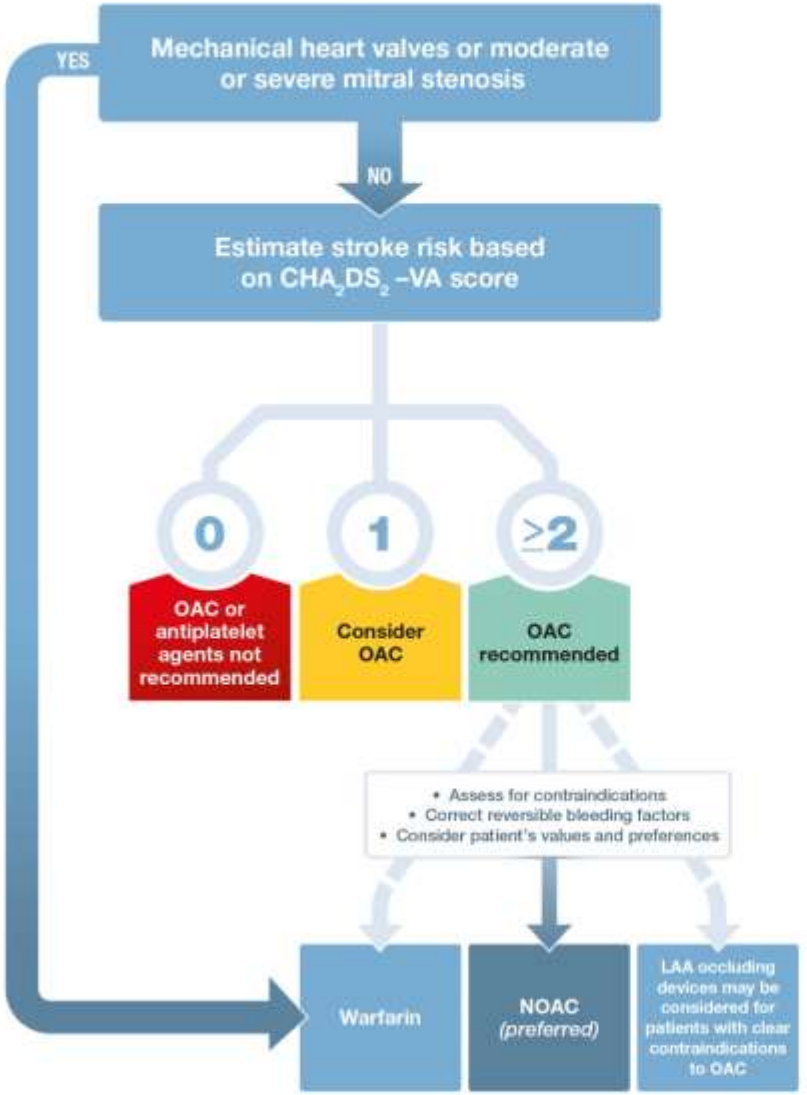
# Stroke prevention in atrial fibrillation




OAC oral anticoagulant | NOAC non-vitamin K oral anticoagulant | LAA left atrial appendage

# Stroke prevention – practice points

- The $CHA_2DS_2$-VA score should be used to determine a threshold at which oral anticoagulation therapy is recommended.
  - Asymptomatic patients with AF detected on opportunistic screening have a comparable stroke risk to symptomatic patients.
  - Patients with atrial flutter have a slightly lower stroke risk than patients with atrial fibrillation, but the risk still exists[1] and many of these patients have episodes of atrial fibrillation so the same recommendations for anticoagulation apply.
  - The stroke risk for patients with implantable devices and incidentally detected AF appears to be lower than in the general AF population
    - Patients with a $CHA_2DS_2$-VA score of $\geq$2 should have close follow-up for development of clinical AF, with consideration of OAC when an episode lasts for more than 24 hours.

1.Al-Kawaz M, et al. J Stroke Cerebrovasc Dis. 2018;27(4):839-44.

# Pharmacological stroke prevention

| Recommendation | GRADE quality of evidence | GRADE strength of recommendation |
|---|---|---|
| When oral anticoagulation is initiated in a patient with N-VAF*, an NOAC – apixaban, dabigatran or rivaroxaban – is recommended in preference to warfarin. | Moderate | Strong |
| Antiplatelet therapy is not recommended for stroke prevention in N-VAF patients, regardless of stroke risk. | Moderate | Strong |

*N-VAF refers to AF in the absence of moderate to severe mitral stenosis or mechanical heart valve.

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# Pharmacological stroke prevention – practice points

- Anticoagulation with warfarin reduces the risk of embolic stroke by 64% and of mortality by 26% when used in patients with N-VAF.[1]
- Randomised data show that the NOACs are as good as or better than warfarin in reducing stroke and systemic embolism, and that bleeding rates are less or similar to warfarin. Intracranial haemorrhage (ICH) is significantly reduced with NOACs compared with warfarin.
- NOACs have minimal drug and food interactions, and do not need haematological monitoring, so are much easier for the patient and physician to use.[2-5]
- International normalised ratio (INR) monitoring may be difficult in remote Australian communities, and therefore NOACs have the capacity to greatly improve anticoagulant therapy in patients with N-VAF.
- The evidence for stroke prevention with aspirin is weak, and aspirin may have bleeding rates similar to OAC.[6]


1.Hart RG, et al. Ann Intern Med. 2007;147(8):590-2.
2.Connolly SJ, et al. N Engl J Med. 2009;361(12):1139-51.
3.Granger CB, et al. N Engl J Med. 2011;365(11):981-92.
4.Patel MR, et al. N Engl J Med. 2011;365(10):883-91.
5.Ruff CT, et al. Lancet. 2014;383(9921):955-62.
6.SPAF Investigators. Lancet. 1994;343(8899):687-91.

# Optimisation of anticoagulation

| Recommendation | GRADE quality of evidence | GRADE strength of recommendation |
|---|---|---|
| Point-of-care INR measurement is recommended in the primary care management of patients receiving warfarin. | Moderate | Strong |

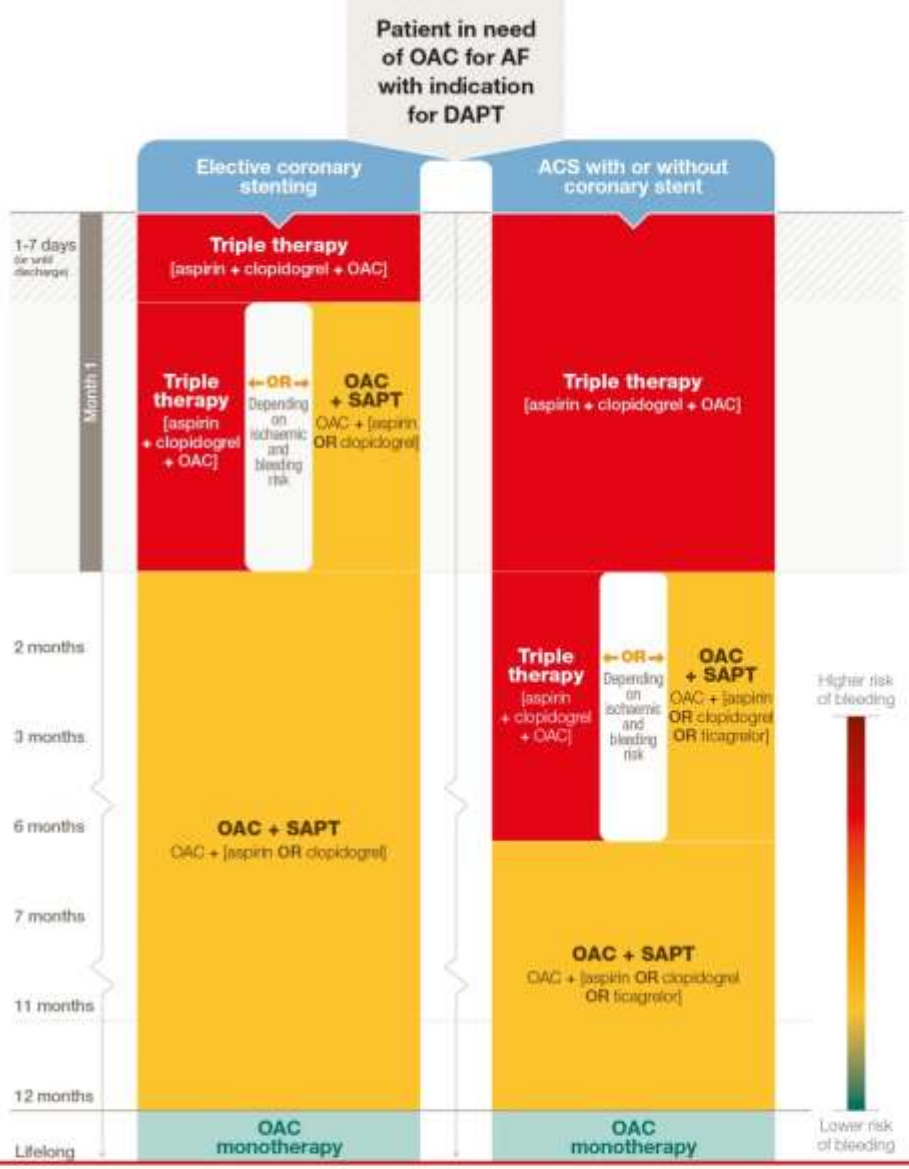
Practice point:

- Current point-of-care measurement of INR for warfarin therapy is most useful for patients who are generally stable and/or in acute situations where a timely result is needed to guide patient management.

# Optimisation of anticoagulation

| Recommendation | GRADE quality of evidence | GRADE strength of recommendation |
|---|---|---|
| Careful assessment of the bleeding and ischaemic risks (i.e. stroke, new or recurrent cardiac ischaemia or infarction, and stent thrombosis) should be undertaken for patients with AF who have a long-term requirement for anticoagulation for stroke prevention and require dual antiplatelet therapy (DAPT) after acute coronary syndrome (ACS) or stent implantation (or both). | Low | Strong |

# Combining anticoagulants and antiplatelet agents




**OAC** oral anticoagulant | **AF** atrial fibrillation | **DAPT** dual antiplatelet therapy | **ACS** acute coronary syndrome | **SAPT** single antiplatelet therapy

# Optimisation of anticoagulation – practice points

- Duration of triple therapy (aspirin, $P2Y_{12}$ inhibitor and OAC) should be as short as possible to minimise bleeding, while ensuring coverage of the initial period of high thrombotic risk.
- The risk of gastrointestinal bleeding in patients on triple therapy is likely to be reduced by concomitant administration of protein pump inhibitors.[1]
- Where DAPT is required in combination with OAC, aspirin and clopidogrel are recommended.
- Where OAC is used for AF, discontinuation of antiplatelet therapy should be considered 12 months after stent implantation, ACS, or both, with continuation of OAC alone.

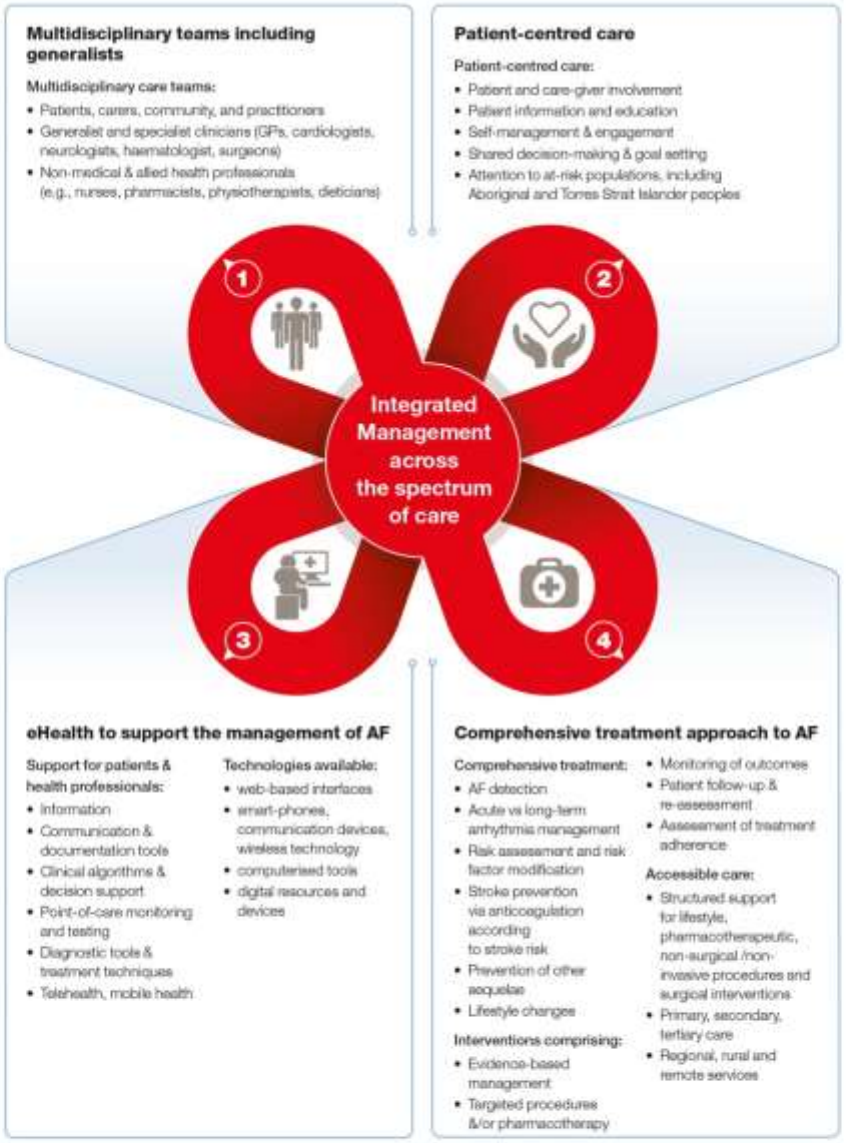
1. Bhatt DL, et al. N Engl J Med. 2010;363(20):1909-17.

# Integrated management

# Integrated management

| Recommendation | GRADE quality of evidence | GRADE strength of recommendation |
|---|---|---|
| An integrated care approach is recommended; such an approach aims to provide patient-centred comprehensive treatment delivered by a multidisciplinary team. | High | Strong |
| All patients prescribed pharmacotherapy for the management of AF, including core rhythm control and anticoagulation therapies, should have their treatment adherence and persistence regularly monitored and supported using accessible and patient-centred strategies. | Low | Strong |

# Fundamentals of integrated care in the management of atrial fibrillation




AF
atrial fibrillation

CSANZ
Cardiac Society of Australia and New Zealand

Heart Foundation

# Integrated care – practice points

- Integrated care focuses on three fundamental aspects; multidisciplinary teams; patient-centred care with a focus on shared decision-making; and application of eHealth.[1, 2]
- Long-term persistence to OAC tends to decrease over time; approximately one-third to half of patients discontinue therapy within 2.5 years of initiation.[3, 4]
  - Recent studies focus on improving adherence to anticoagulants via the use of electronic applications, with mixed results.
  - Earlier studies focused on educational and behavioural interventions, but did not generate enough evidence to determine their impact.[5]
- Regular monitoring and feedback of treatment adherence and persistence should be prioritised to optimise and standardise care and improve outcomes.


1.Guo Y, et al. AMJMED. 2017;Available at: www.hon.ch/Conduct.html.
2.Pandya E, et al. J Clin Pharm Ther. 2016;41(6):667-76.
3.Simons LA, et al. Curr Med Res Opin. 2017;33(7):1337-41.
4.Abdou JK, et al. British journal of haematology. 2016;174(1):30-42.
5.Clarkesmith DE, et al. Cochrane Database Syst Rev. 2013(6):Cd008600.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# Working group acknowledgements

Professor David Brieger (Chair)

A/Professor John Amerena

Professor John Attia

A/Professor Beata Bajorek

Dr Kim Chan

Professor Ben Freedman

Dr Caleb Ferguson

Ms Tanya Hall

A/Professor Haris Haqqani

Dr Jeroen Hendriks

A/Professor Charlotte Hespe

Professor Joseph Hung

Professor Jonathan M. Kalman

Professor Prash Sanders

A/Professor John Worthington

Professor Tristan D. Yan

Professor Nick Zwar

Cia Connell (NHFA)

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## Endorsement

CRANAplus improving remote hea

Stroke FOUNDATION

Australian College of Nursing

Australian & New Zealand Society of Cardiac & Thoracic Surgeons

Australian College of Rural & Remote Medicine
WORLD LEADERS IN RURAL PRACTICE

AUSTRALIAN COMMISSION ON SAFETY AND QUALITY IN HEALTH CARE

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# Publications

Full guideline in *Heart, Lung, and Circulation*

Heart, Lung and Circulation (2018) 27, 1209–1266
1443-9506/04/$36.00
https://doi.org/10.1016/j.hlc.2018.06.1043

GUIDELINES

## National Heart Foundation of Australia and the Cardiac Society of Australia and New Zealand: Australian Clinical Guidelines for the Diagnosis and Management of Atrial Fibrillation 2018

### Contents



Executive summary in *Medical Journal of Australia*

## National Heart Foundation of Australia and Cardiac Society of Australia and New Zealand: Australian clinical guidelines for the diagnosis and management of atrial fibrillation 2018

David Brieger[1], John Amerena[2], John R Attia[3,4], Beata Bajorek[5], Kim H Chan[6,7], Cia Connell[8], Ben Freedman[7], Caleb Ferguson[9,10], Tanya Hall[5], Haris M Haqqani[11], Jeroen Hendriks[12,13], Charlotte M Hespe[14], Joseph Hung[15], Jonathan M Kalman[17,18], Prashanthan Sanders[13,14], John Worthington[6], Tristan Yan[6], Nicholas A Zwar[19]

Abstract

**Introduction:** Atrial fibrillation (AF) is increasing in prevalence and is associated with significant morbidity and mortality. The optimal diagnostic and treatment strategies for AF are continually evolving and care for patients requires confidence in integrating these new developments into practice. These clinical practice guidelines will assist Australian practitioners in the diagnosis and management of adult patients with AF.

**Main recommendations:** These guidelines provide advice on the standardised assessment and management of patients with atrial fibrillation regarding:

- screening, prevention and diagnostic work-up;
- acute and chronic arrhythmia management with antiarrhythmic therapy and percutaneous and surgical ablative therapies;
- stroke prevention and optimal use of anticoagulants; and
- integrated multidisciplinary care.

**Changes in management as a result of the guideline:**

- Opportunistic screening in the clinic or community is recommended for patients over 65 years of age.
- The importance of deciding between a rate and rhythm control strategy at the time of diagnosis and periodically thereafter is highlighted. β-Blockers or non-dihydropyridine calcium channel antagonists remain the first line choice for acute and chronic rate control. Cardioversion remains first line choice for acute rhythm control when clinically indicated. Flecainide is preferable to amiodarone for acute and chronic rhythm control. Failure of rate or rhythm control should prompt consideration of percutaneous or surgical ablation.
- The sexless $CHA_2DS_2$-VA score is recommended to assess stroke risk, which standardises thresholds across men and women; anticoagulation is not recommended for a score of 0, and is recommended for a score of ≥ 2. If anticoagulation is indicated, non-vitamin K oral anticoagulants are recommended in preference to warfarin.
- An integrated care approach should be adopted, delivered by multidisciplinary teams, including patient education and the use of eHealth tools and resources where available. Regular monitoring and feedback of risk factor control, treatment adherence and persistence should occur.

Atrial fibrillation (AF) is a burdensome condition with increasing prevalence. International guidelines on the diagnosis and management of AF are available,[1,2] but individual recommendations may differ, and no guidelines have previously been developed specific to the Australian population.

These guidelines have been developed by the National Heart Foundation of Australia (NHFA) and the Cardiac Society of Australia and New Zealand (CSANZ) to assist Australian clinicians in the diagnosis and management of adult patients with AF. They are informed by recent evidence interpreted by local experts to optimise application in an Australian context.

This executive summary provides important recommendations together with their strength of evidence and guidance for their implementation in clinical practice (practice points). The full clinical guidelines are available in *Heart, Lung and Circulation* at https://doi.org/10.1016/j.hlc.2018.06.1043.[3]

### Method

The NHFA, in partnership with the CSANZ, appointed an expert working group comprising cardiologists (including electrophysiologists), an epidemiologist and physician, a pharmacist, nurses, a consumer, general practitioners, a neurologist, and a cardiothoracic surgeon. Three subgroups covered the topics of screening and prevention, arrhythmia management, and stroke prevention.

A reference group of representatives from key stakeholder organisations with national relevance in the provision of AF care in Australia was formed. This group provided input into the scope of the guidelines and guideline content.

A draft of the guidelines was open for a 21-day period of public consultation in April 2018 to capture stakeholder views and facilitate engagement. Appropriate governance processes were followed to ensure transparency, minimise bias, manage conflict of interest and limit other influences during guideline development.

### Key evidence-based recommendations

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# Resources on NHFA website

- MJA summary
- Full guideline
- External Presentation on each guideline
- FAQs
- Governance documents
- Algorithms and tables as separate documents
- Conflict of interest register

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Questions?
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