Providing information, support and access to established, new or innovative treatments for atrial fibrillation
Every 15 seconds someone suffers an AF-related stroke

**Detect**
AF by a simple pulse check

**Protect**
from AF-related stroke using anticoagulation (not aspirin)

**Correct**
the irregular rhythm with access to appropriate treatment

**Perfect**
the patient care pathway

*Based upon global stroke incidence data and published evidence on the proportion of ischaemic strokes that result from AF*
INTRODUCTION

The AF Playbook is a construct of the AF patient journey based on evidence-based best practice. It has been created by AF Association® and Arrhythmia Alliance®. The enclosed content is based on the patient journey construct as created by the AF Association:

- **Detect** AF by a simple pulse check
- **Protect** against AF-related stroke using anticoagulation therapy (not aspirin)
- **Correct** the irregular rhythm with access to appropriate treatment
- **Perfect** the patient care pathway

The content is drawn from the most recent evidence-based guidance and peer-reviewed publications on the management of the patient with AF from NICE1, ESC3, PHE4 (including RightCare5) and NHSE6. The construct aligns with partnership and collaborative work that AF Association and Arrhythmia Alliance have undertaken with the Academic Health Science Network, AF-screen International, iPACT, and the All Party Parliamentary Group on Atrial Fibrillation.

The Playbook is also being used in conjunction with AF Association AF patient journey visualisation to help local and regional stakeholders improve their management of AF. It will enable CCGs, Local Authorities, Specialists, Primary Care and allied Healthcare Professionals committed to the management of AF to identify gaps where resources can be best employed to improve the identification, diagnosis, management and treatment of people with AF in their local area. Although the data, evidence and guidance used in the content focuses on England, AF Association believes the pathway and visualisation can be used with policy makers in other parts of the UK. The creation of country-specific guidance for Scotland and Wales has been raised by AF Association and the All-Party Parliamentary Group on AF (APPG-AF) and in the Welsh Assembly and Scottish Parliament.

WHY WE NEED TO DRIVE IMPLEMENTATION OF BEST PRACTICE ACROSS ENGLAND (AND THE UK)

In 2014, NICE produced guidance on the management of AF1 and on the use of self-monitoring diagnostics for people with AF2. A freedom of information request raised one year after the guidance was published found that an overwhelming majority of CCGs had not implemented some, or any of its recommendations7.

AF is the most common arrhythmia, and estimates suggest its prevalence is increasing. If left untreated atrial fibrillation is a significant risk factor for stroke and other morbidities. Men are more commonly affected than women and the prevalence increases with age.

The aim of anticoagulant therapy is to reduce the risk of AF-related stroke. Whereas the aim of treatment (rhythm/rate control) is to alleviate symptoms, therefore improving the patient’s quality of life. Individuals with AF who do not receive anticoagulation therapy (whether symptomatic or not), have a five-fold increased risk of stroke, often of greater severity [see table 1].
Table 1: AF and risks of CV death, renal disease and death (BMJ 2016;354:i4482)

<table>
<thead>
<tr>
<th>Associated morbidity &amp; mortality</th>
<th>Increase in risk</th>
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</thead>
<tbody>
<tr>
<td>All-cause mortality</td>
<td>46%</td>
</tr>
<tr>
<td>Ischaemic heart disease</td>
<td>61%</td>
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<td>Chronic kidney disease</td>
<td>64%</td>
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<td>88%</td>
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<td>Major CV event</td>
<td>96%</td>
</tr>
<tr>
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<td>203%</td>
</tr>
<tr>
<td>Ischaemic Stroke</td>
<td>233%</td>
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<tr>
<td>Stroke</td>
<td>242%</td>
</tr>
<tr>
<td>Congestive heart failure</td>
<td>499%</td>
</tr>
</tbody>
</table>

There were over 16,000 AF-related strokes in the UK in the 12 months to June 2015. Data one year after the publication of NICE CG180 show that more than one in five patients admitted to hospital because of stroke were known to have AF prior to admission, less than half were taking anticoagulants, and over a quarter were still taking aspirin. It is estimated that 11,600 AF-related strokes could be averted each year if everyone with AF received appropriate treatment including anticoagulation.

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AF related stroke tends to be severe and more likely to be fatal. The average costs of both health and social care for stroke have recently been calculated to be an average of £44,434 over the first 5 years.

PHE has identified that a third of people with AF remain undiagnosed (approximately 500,000 people) and half of all people diagnosed are untreated or have poorly controlled anticoagulation.

NICE guidance (CG180) predicted that effective management including optimal anticoagulation of patients with AF could save 7,000 strokes and 2,000 premature deaths each year.

GOALS OF IMPROVED AF MANAGEMENT

- Implementation of NICE CG180 will result in 7,000 fewer strokes and save 2,000 premature deaths per year
- Increase diagnosis of people with AF to accepted population prevalence of 2.4%
- Increase % of people with AF on effective anticoagulation to in excess of 70%
- Identify and eradicate use of aspirin as monotherapy anticoagulant in people with AF
- Identify and provide self-monitoring option to all appropriate patients prescribed VKA/warfarin
- Increase the uptake of NICE guidance DG14
- Implementation of NICE AF quality standards
Detect AF by a simple pulse check

The prevalence of AF is expected to significantly increase from 1.6% - modelled estimates suggest the real prevalence is much higher at 2.4%. AF prevalence increases sharply with age with 80% of cases occurring in people >65 years.

Co-morbidities
- Stroke / TIA
- Type 2 diabetes
- Heart Failure
- Hypertension
- Chronic kidney disease
- Recent unexplained fall(s)

Opportunistic case-finding
- NHS Health check – manual pulse rhythm check to be provided with blood pressure monitoring for at-risk people over 65yrs
- People presenting through Pharmacy / Know Your Pulse Community checks

Detection of AF in England
Source: QOF 2013/14; NCVIN 2015
1.4 million people in England are estimated to have atrial fibrillation (AF) (2.4% of the adult population).

Chart 1: Undiagnosed AF in England (source QOF 2013-14; NCVIN 2015)
Use of detection devices

There are many new devices available to improve the sensitivity and specificity of AF detection when compared to pulse rhythm checks alone. The use of these devices may enhance AF detection and reduce the demand for 12 lead ECGs to confirm diagnosis. NICE has approved the use of two such devices, AliveCor Kardia mobile ECG Monitor and Watch BP Home A12.

CONFIRMATION OF DIAGNOSIS1

Perform ECG in all people, symptomatic OR NOT, if AF suspected due to irregular pulse.
In people with suspected paroxysmal AF, undetected by ECG:

- With symptoms, less than 24 hours apart – use 24-hour ambulatory monitor
- With symptoms, more than 24 hours apart – use event recorder ECG
Protect against AF-related stroke using anticoagulation therapy (not aspirin)

IDENTIFY AF PATIENTS ON ASPIRIN MONOTHERAPY
Aspirin has been proven to be ineffective as anticoagulant monotherapy in patients with AF and should not be used. Recent data has shown that 27.9% of AF patients are still managed on aspirin.

PERSONALISED PACKAGE OF CARE
All people diagnosed with AF – symptomatic or not – must be offered a personalised package of care

DOCUMENTED Package of Care must cover:
- AF-related stroke awareness, and ways to prevent stroke
- Rate control
- Assessment of symptoms for rhythm control
- Psychological support
- Contact details for further advice and support
- Latest and comprehensive education and information on:
  - cause, effects and possible complications of atrial fibrillation
  - management of rate and rhythm control
  - anticoagulation, including practical advice to improve adherence
  - provision of self-monitoring
  - support networks (for example, AF Association)

ASSESSMENT:
Stroke risk – use CHA2DS2-VASc in following patients with:
- symptomatic or asymptomatic paroxysmal, persistent or permanent atrial fibrillation
- atrial flutter
- a continuing risk of arrhythmia recurrence after cardioversion back to sinus rhythm

Bleeding risk – use the HAS-BLED score to assess the risk of bleeding in people who are starting or have started anticoagulation

Modification and monitoring of the following risk factors:
- Uncontrolled hypertension
- Poor control of international normalised ratio (INR) (‘labile INRs’)
- Concurrent medication, for example concomitant use of aspirin or a non-steroidal anti-inflammatory drug (NSAID)
- Harmful alcohol consumption
When discussing the benefits and risks of anticoagulation, 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

DO NOT withhold anticoagulation solely because the person is at risk of having a fall.1

Do not offer stroke prevention therapy to people aged under 65 years with AF and no risk factors other than their gender, i.e. very low risk of stroke equating to a CHA2DS2-VASc score of 0 for men or 1 for women

**CHA2DS2-VASc score 2 and above**
Offer anticoagulation taking bleeding risk into account

**For men**
Consider anticoagulation with a CHA2DS2-VASc score of 1 - take bleeding risk into account

**ANTICOAGULANT OPTIONS**
Discuss the options for anticoagulation with the person and base the choice on their clinical features and preferences

Anticoagulation may be provided through:

- DOAC (apixaban, dabigatran etexilate, edoxaban, rivaroxaban)
- Warfarin/vitamin K antagonist – self-monitoring should be offered to all appropriate patients

**Assessing anticoagulation control with vitamin K antagonists**
Guidelines on oral anticoagulation with warfarin, published by the British Committee for Standards in Haematology14, outline the process for INR monitoring for those receiving warfarin. INR should be measured:

- daily, or on alternate days, until it is within the therapeutic range (usually between 2.0 and 3.0, ideally 2.5) on two consecutive occasions
- then twice weekly for 1-2 weeks,
- followed by weekly measurements until the INR is stable within the therapeutic range
- thereafter, depending on the stability of the INR, at longer intervals (for example, up to every 12 weeks, if agreed locally).
Calculate the person’s time in therapeutic range (TTR) at each visit:

• use a validated method of measurement
• exclude measurements taken during the first 6 weeks of treatment
• calculate TTR over a maintenance period of at least 6 months

Reassess poor anticoagulation control shown by:

• 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%

**Self-monitoring of vitamin K antagonists**

Several trials have demonstrated that patient self-monitoring (PSM) by those on long term warfarin significantly improves TTR and leads to better outcomes including 50% reduction in thromboembolism.

The NICE quality standard for the management of AF states that patients on long-term VKA therapy are supported to self-manage with a coagulometer. Enabling adults with AF to self-manage their coagulation using a coagulometer can help to optimise their anticoagulation treatment, reduce the frequency of hospital or clinic visits and can improve health outcomes such as risk of stroke and bleeding.

Patients who self-monitor spend more time within their therapeutic range compared with patients attending clinics for monitoring, reducing the risk of blood clots and thromboembolic events by 49%.

NICE developed diagnostics guidance on self-monitoring coagulation status in people on long-term vitamin K antagonist therapy who have AF or heart valve disease. NICE has concluded that anticoagulation therapy is cost-effective and must be available to NHS patients within their licensed indications.

Two coagulometers, the CoaguChek XS system and the InRatio2 PT/INR monitor, are recommended for self-monitoring coagulation status in adults and children on long-term vitamin K antagonist therapy who have atrial fibrillation if:

• the person prefers this form of testing and the person or their carer is both physically and cognitively able to self-monitor effectively.
• Patients and carers should be trained in the effective use of the CoaguChek XS system or the INRatio2 PT/INR monitor and clinicians involved in their care should regularly review their ability to self-monitor.
• The point-of-care coagulometers are designed to monitor the clotting tendency of blood in people on long-term vitamin K antagonist therapy, such as those with AF who are at risk of thrombosis. The tests allow monitoring by 2 different methods of care: self-testing and self-managing. Both methods are based on the INR, which is a standardised unit for measuring the time it takes for blood to clot.
• Self-testing refers to the user doing the INR test themselves and then contacting their healthcare professional with the reading for advice on any change to the dosage of the anticoagulant that may be needed.
• Self-managing refers to the user doing the INR test themselves and self-adjusting dosage of their anticoagulant medication following agreed care protocol. Together, these methods of care are referred to as self-monitoring.
INR monitoring can be managed by local anticoagulant clinics in primary care, but sometimes clinics are based in secondary care, involving travel to hospital. The NICE anticoagulation commissioning guide states that anticoagulation therapy services can be delivered in a number of different ways, and that mixed models of provision may be needed across a local health region. This could include full service provision in secondary or primary care, shared provision, domiciliary provision and self-management. Services may be managed by a range of healthcare professionals including nurses, pharmacists and general practitioners.

Case study – Standard Operating Procedure: Durham and Darlington NHS Foundation Trust

The Trust deliver a digital INR service allowing patients to test at home instead of attending clinic, while being closely managed and monitored by their clinician. When a patient has been identified as suitable for INR self-testing, the patient is supplied with a CoaguChek® XS that allows them to measure their INR at home. They are trained on how to use the device and how to access the digital service. On the day of the INR test, the patient receives an automated phone call which asks the patient questions about their INR result and current warfarin dose. It also asks safety questions about bleeding, medication changes and missed doses. Once the patient has completed their call the INR and warfarin data is sent directly to the clinic. The clinician assesses the patient and calculates the patient’s new warfarin dose using their existing Clinical Decision Support System. The patient then receives a 2nd automated phone call at a pre-agreed time with their new warfarin dose and date of next INR test. The service fits around the life-style needs of the patient.

Further information & advice

We, at AF Association, have a library of resources available in a variety of languages to support patients’ understanding and management of AF.

Our booklets are written by AF experts and approved by the Department of Health, and can be downloaded free of charge from our website www.afa-international.org. Alternatively, you can order paper copies via our website or by calling 01789 867502.
Correct the irregular rhythm with access to appropriate treatment

REFER FOR SPECIALISED MANAGEMENT
At any stage, if treatment fails to control the symptoms of atrial fibrillation promptly refer for specialised management.

RATE CONTROL
Offer rate control as the first-line strategy to people with atrial fibrillation

But NOT in people:
• whose AF has a reversible cause
• who have heart failure thought to be primarily caused by AF
• with new-onset atrial AF
• 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

Initial monotherapy as rate control strategy for patients who need drug treatment
• Standard beta-blocker (that is, a beta-blocker other than sotalol) or rate-limiting calcium-channel blocker
• Base choice on patient’s symptoms, heart rate, comorbidities and preferences

If rate uncontrolled on monotherapy, consider combination therapy
Any two of:
• beta-blocker
• diltiazem
• digoxin

RHYTHM CONTROL
Pharmacological and/or electrical
• Consider if symptoms persist after heart rate controlled, or if rate-control strategy has not been successful

Electrical Cardioversion for AF persisted for more than 48 hours
• Consider amiodarone therapy starting 4 weeks before and continuing for up to 12 months after electrical cardioversion to maintain sinus rhythm
• Discuss benefits and risks of amiodarone with patient

Drug treatment for long-term rhythm control
• Consider a standard beta-blocker (that is, a beta-blocker other than sotalol) as first-line treatment unless contraindications

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

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

• Consider amiodarone for people with left ventricular impairment or heart failure

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

Consider amiodarone for people with left ventricular impairment or heart failure


**Left atrial ablation and a pace and ablate strategy**

If drug treatment has failed to control symptoms of AF or is unsuitable:

- offer left atrial catheter ablation to people with paroxysmal AF
- consider left atrial catheter or surgical ablation for people with persistent AF
- discuss the risks and benefits with the person

**Pace and ablate strategy**

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

**Left Atrial Appendage Occlusion (LAAO)**

Consider LAAO if anticoagulation is contra-indicated or not tolerated and discuss the benefits and risks of LAAO with the person.

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**PATIENT DIES AFTER BEING DENIED ACCESS TO LIFESAVING TREATMENT DUE TO LACK OF NHS FUNDING**

High risk patients living with ‘ticking time bomb’ as Cardiac Centres prevented from providing urgent treatment due to indefinite NHS England ‘evaluation process’.

LAAO is the only treatment available to prevent an AF-related stroke in hundreds of patients in whom oral anticoagulant drugs are contra-indicated. Many of these high-risk patients who are suitable for LAAO have suffered from previous strokes or transient ischaemic attacks, and many have also suffered from intracranial haemorrhage or major bleeds at other sites.

GF, 74, from Hertfordshire, tragically suffered a bleed to the brain on 24 July 2017, and passed away three days later when his children agreed to turn off his life support.

In August 2016, GF was told that the best option to treat his AF would be to have LAAO. After having this procedure delayed at the last minute when a clot was found on his heart, he was devastated to be told in January 2017 that the treatment was no longer being funded by the NHS. He was placed on anticoagulation therapy but sadly suffered a major bleed on 24 July.
PERFECT

Perfect the patient care pathway

REASSESS POOR ANTICOAGULATION CONTROL IF FOLLOWING FACTORS ARE AT PLAY

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

If poor anticoagulation control cannot be improved, evaluate and discuss risks and benefits of alternative AF-related stroke prevention strategies with patient.

ANTICOAGULATION REVIEW

Review the need for, and quality of, anticoagulation at least annually, or more frequently if clinically relevant events occur affecting anticoagulation or bleeding risk.

Patients with AF not taking an anticoagulant

Review AF-related stroke risk at 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
- systemic thromboembolism

Review stroke and bleeding risks annually for patients not taking an anticoagulant because of bleeding risk or other factors.

Ensure that all reviews and decisions are documented

COMMISSIONING EXCELLENCE IN ANTICOAGULANT CARE

Commissioners should ensure the following criteria are delivered by the local anticoagulant pathway:

1. Anticoagulation services for a local population should be patient-centred and directly involve users and carers

2. Anticoagulation services should ensure that the whole population of patients requiring anticoagulation has access via a clear and simple electronic referral pathway

3. All anticoagulation options should be available and discussed where appropriate, in line with NICE guidance. These include:
   - Vitamin K oral antagonists, such as warfarin, including the ability to self-monitor or self-manage
   - Direct oral anticoagulants (DOACs): apixaban, dabigatran, edoxaban and rivaroxaban

4. All treatment decisions should be made in partnership with patients following a comprehensive education and decision support consultation, with an ongoing package of patient monitoring, review, education and support.
5. Clear written protocols should be in place to support the reassessment of patients who have poor warfarin anticoagulant control. The minimum acceptable time in therapeutic range (TTR) is 65 per cent, and in patients where this is not achieved, alternative management options should be offered, such as self-monitoring, and if this is not feasible, alternative treatment options, if clinically appropriate.

6. Protocols for the initiation of DOAC treatment should be in place, consistent with NICE recommendations, and with clear follow up arrangements.

7. Support for medication adherence is crucial, and excellent anticoagulation services should have mechanisms in place to address this. Community pharmacy New Medicine Service (NMS) and Medicines Use Reviews (MUR) should be central to optimising medication use.

8. Anticoagulation services should have locally agreed formal links with relevant local specialist departments, including hospital-based cardiology and haematology services.

9. Anticoagulation services should be able to provide regular and transparent performance data to commissioners and patients. Regular review of the quality and safety of services will be key to continually improving outcome.

The AF Association Healthcare Pioneers Report recognises best practice in the identification, diagnosis, treatment and care of patients with atrial fibrillation (AF) and is used as a benchmark to improve services and care for the patients with AF.
REFERENCES


15. NICE (2013) NICE support for commissioning: anticoagulation therapy.


The AF Playbook has been produced with an unrestricted educational grant and support from Roche Diagnostics UK
AF Association Global AF Aware Week

During Global AF Aware Week we ask our supporters to help us to raise awareness of AF whether by simply sharing and displaying information, holding an awareness activity or by fundraising and donating to AF Association.

www.afa-international.org

Join the pioneering, global, Heart Rhythm Specialists website.

The resource provides information on local services to general healthcare practitioners seeking to refer a patient or in need of advisory council; and patients with heart rhythm disorders. The website aims to bring together a comprehensive database, which can be accessed easily by both patients and healthcare providers. Register on the heart rhythm specialist website

www.heartrhythmspecialists.org

The Heart of AF

A one-stop educational resource for healthcare professionals Promoting best practice in AF care by professionals, for professionals.

www.heartofaf.org