Shropshire and Staffordshire
Heart and Stroke Network

# Atrial Fibrillation Strategy

# February 2012

**Review date January 2015**

| Document Version | Date | Comments |
|---|---|---|
| **Version 1** | **13/09/10** | First draft for distribution |
| **Version 2** | **24/11/10** | Comments received |
| **Version 3** | **29/12/10** | Changes made following meeting |
| **Version 4** | **10/05/11** | Changes made sent to group for comments by 20th May 2011 |
| **Version 5** | **22/07/11** | Additional information attached, redistributed for amendments by 31st Aug |
| **Version 6** | **01/09/11** | Amendments |
| **Version 7** | **23/09/11** | Combined documents to incorporate changes |
| **Version 8** | **26/10/11** | Amendments made, patients perspective added |
| **Version 8a** | **20/12/11** | Amendments |
| **Version 8b** | **10/01/12** | Amendments |
| **Version 8c** | **03/02/12** | Amendments made, addition of Executive Summary and Foreword |
| **Version 8d** | **22/03/12** | Amendment to wording on p17 under anticoagulation |

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| **Circulation to** | Network Board, SCG, Network Team |
| **Document status** | FINAL |
| **Approval date** | Oct 2011 |
| **Version No** | 8c |
| **Review date** | January 2015 |
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**Contents**

## Foreword

We know from national information and data that Atrial Fibrillation (AF) accounts for 1 in 6 of all strokes and is most likely to cause disability and death. Diagnosis of AF is often not made until presentation and anecdotal evidence suggests that often anticoagulation is poorly managed leading to deterioration in health and sometimes acute admissions.

This strategy sends out a clear message that it is everyone's business to raise awareness of Atrial Fibrillation among the wider public and within healthcare teams. By increasing the knowledge and skills of our teams we will be able to detect more people with AF and the introduction of the National GRASP toolkit can assist with this process. The teams need to make sure that pathways are in place ensuring adequate diagnosis once patients are detected with AF. There is also the challenge we face with the introduction of new anticoagulants and in the future we may need to look at new ways of working.

These are the key messages of this strategy. We must make sure that we use every opportunity to detect, diagnose and manage appropriately this group of patients ensuring optimum care.

Thanking you for all you do.

Dr Leigh Griffin
Network Chair

## Executive Summary

The strategic intent of Shropshire and Staffordshire Heart and Stroke network is to ensure that within five years of the development of an Atrial Fibrillation (AF) Strategy all health professionals and members of the public would be aware of the importance of detection, diagnosis and management of people with AF.

### Building for the future

New anticoagulants and developments will continue to advance the treatment of Atrial Fibrillation so we will need to continue to reassess the progress made with the key recommendations set out in this strategy and refine our approach to reflect new developments

### Summary of recommendations

1. Support public information campaigns to raise awareness to prevent avoidable mortality and morbidity from strokes occurring as a result of , such as 'Ask First Campaign' September 15, 2011 for three weeks and ACT Campaign 28 October 2011. Further campaigns are scheduled for 2012
2. Distribution of information leaflets for AF patients within primary and secondary care
3. Locally agreed guidelines/pathways produced for the detection, treatment and management of AF including those patients for whom secondary care referral should be considered.
4. Network guidelines for the management of patients with cardiac arrhythmias from primary to secondary care have been produced. We aim to evaluate the impact of their introduction and distribution.
5. All practices should run the GRASP-AF tool, and upload the data to CHART online. GP's should use GRASP to identify high risk patients for review, and CHART online should be used by GP's and commissioners to benchmark and audit the quality of local service delivery. All practices should access the GRASP – AF toolkit using $CHA^2DS^2VASc$ score to detect patients and guide treatment.
6. AF workshops and educational programmes have been developed in association with Staffordshire University. Evaluation of these highlights the need for further educational sessions
7. Recognition of the fact that warfarin is much more effective than aspirin in preventing strokes associated with AF, commissioners should encourage the use of warfarin in AF patients at high risk of stroke.
8. Anti-coagulant clinics adhere to existing NPSA guidelines on audit and clinical governance, with particular emphasis on time in therapeutic range and that the audit data so generated is actively reviewed by commissioners.
9. Individual patients on anti-coagulant therapy undergo an annual review which includes consideration of the continuing indication for anti-coagulation; the patient's bleeding risk and the patient's percentage of time in therapeutic range
10. Self-monitoring and self-management of oral anticoagulants should be considered to improve compliance
11. New anti-coagulant agents are becoming available which will offer advantages to patients of greater convenience and may in some groups offer superior efficacy or safety, however, the use of these new agents requires careful economic and clinical appraisal prior to their widespread use. Development of an anticoagulation algorithm for AF management being undertaken by Medicines Management Leads within network and will require continual reappraisal.

12. Easier access to services such as Transthoracic echocardiography should be encouraged
13. Paramedic's performing ECG's on all fall patients will identify those with AF
14. Commissioners should encourage practices to undertake targeted, opportunistic case finding (by pulse taking) as the best approach to detecting patients with asymptomatic AF. Appropriate groups for targeting include patients over 65 and patients with known heart disease, peripheral vascular disease, hypertension, diabetes or previous stroke.
15. Telehealth trialled within GP practices for ECG interpretation, report to inform practices
16. The baseline medical assessment of stroke patients should include documentation of the cardiac rhythm and a standard 12 lead ECG. This should be the subject of regular audit. Measures should be undertaken to ensure the ECG recording and the detection of AF are an integral part on on-going, inpatient stroke care.
17. Pilot project in Shropshire nursing homes to identify people in AF 'Can you feel it?' should be replicated across the network

In order to ensure that we build for the future for the management of this group of people we will:

a) Continue to support education and training of the workforce
b) Continue to support awareness raising, Local and National Campaigns
c) Participate in the development of a National Quality Standard for Atrial Fibrillation
d) Publish annual reports on progress and outcomes from the key objectives

## Introduction

This strategy has been developed in line with the National Stroke Strategy (2007) and the Accelerating Stroke Initiative (2010). It also takes account of Chapter 8 of the National service Framework for Coronary Heart Disease 2005, which set out the quality requirements for the prevention and treatment of cardiac arrhythmias, and the Network Arrhythmia Strategy 2009. In this document the Network aims to produce recommendations for best practice in the identification and management of all patients with atrial fibrillation across Shropshire and Staffordshire.

## Background

Hospitalisations due to AF account for at least one-third of all admissions for cardiac arrhythmias. Atrial fibrillation may also precipitate acute coronary syndromes and lead to decompensation of patients with heart failure. Thrombo-embolic complications, particularly stroke, and the need for acute arrhythmia management are the main clinical scenarios leading to hospital admission (ESC Guidance 2010).

Stroke management and stroke prevention are major priority areas for the NHS. Atrial fibrillation (AF) is a major cause of stroke, accounting for some 14% of all strokes. Atrial fibrillation increases the risk and severity of stroke. Recognition and optimal treatment of AF is of particular importance as strokes due to AF are eminently preventable.

- Prevalence rate in primary care is 1.2%, which equates to just over 600,000 patients in England with AF. Within Shropshire and Staffordshire the prevalence rates according to QOF is 1.5% which equates to 24,734 people with AF within the population.
- 12,500 strokes per year are thought to be directly attributable to AF.

Audit data suggests that:

- The annual risk of stroke is five to six times greater in AF patients.
- The treatment of AF with warfarin reduces the risk of stroke by 50–70%.
- The number needed to treat (NNT) to prevent one stroke is 37.
- It is estimated that up to 4,500 strokes per year and 3,000 deaths may be preventable through improved services and optimal therapy. Within Shropshire and Staffordshire this would equate to approximately 400.
- Based on NNT ranging from 25 to 37 (Kerr) the costs of each stroke prevented with warfarin are in the range £9500 to £14000.
- Efficiency and productivity may be increased through the reduction in inappropriate referrals to secondary care and bed days saved.

- Current anti-coagulant management of AF is sub-optimal. NICE estimate that 46% of patients that should be on warfarin are not receiving it.

- Improvement in AF management would lead to a very substantial reduction in stroke numbers nationally.

- Uniquely AF is an eminently preventable cause of stroke with a simple highly effective treatment. This treatment is also highly cost effective.

NHS Improvement (2009)
Quality Marker 2 states:

'Markers of a quality service: Risk factors, including hypertension, obesity, high cholesterol, atrial fibrillation (irregular heartbeats) and diabetes, are managed according to clinical guidelines, and appropriate action is taken to reduce overall vascular risk

Atrial Fibrillation is one of the top six QIPP examples featured on the NHS Evidence**.** Atrial fibrillation (AF) is a major predisposing factor for stroke, and those strokes caused by AF can be particularly severe and disabling. The annual risk of stroke is five to six times greater in AF patients, but if treated with Warfarin it can reduce the risk of stroke by 50-70%. NHS Improvement has worked with eighteen priority project sites and has identified ways that can potentially save up to 4,000 lives per year and help prevent lifetime disability. These findings could help to increase efficiency and reduce the financial and resource demands placed upon secondary care and other services. Up-scaling such innovative work has the potential of generating savings of £134.5m in the first year of stroke prevention in patients with AF.

# Chapter 1

### *1 Key aims of this strategy:*

- To standardise the management of AF across secondary and primary care
- To facilitate support for the interpretation of ECGs in primary care
- To increase warfarin prescribing in those over 75 years of age in line with national guidance
- To improve access to anticoagulation services
- To improve practice data from primary care information systems
- To increase the identification of individuals with atrial fibrillation through opportunistic screening by pulse palpation.

Six Objectives for AF management

- Opportunistic/targeted case detection including taking a manual pulse to detect AF
- Accurate diagnosis of AF from the ECG
- Further investigations and clinical assessment, including risk stratification for stroke & thrombo-embolism
- Antithrombotic therapy as appropriate
- Development of a management plan – rate-control, rhythm-control or referral
- Follow-up and review

## *1.1 Classification of AF*

**Table 1.1 Classification of AF subtypes**

| Terminology | Clinical features | Pattern |
|---|---|---|
| Initial event (first detected episode) | Symptomatic<br>Asymptomatic (first detected)<br>Onset unknown (first detected) | May or may not reoccur |
| Paroxysmal | Spontaneous termination <7 days and most often <48 hours | Recurrent |
| Persistent | Not self-terminating<br>Lasting >7 days or prior cardioversion | Recurrent |
| Permanent ('Accepted') | Not terminated<br>Terminated but relapsed<br>No cardioversion attempt | Established |

Table reprinted with permission from Levy S, Camm AJ, Saksena S et al. International consensus on nomenclature and classification of atrial fibrillation. *Europace* 2003;5:119–22.[1]

AF is considered *recurrent* when a patient experiences two or more episodes. These episodes may be paroxysmal if they terminate spontaneously, defined by consensus as within 7 days, or persistent if the arrhythmia requires electrical or pharmacological cardioversion for termination. Successful termination of AF does not alter the classification of persistent AF in these patients.

Long-standing AF (defined as over a year) that is not successfully terminated by cardioversion, or when cardioversion is not pursued, is classified as permanent.
Paroxysmal AF, in which the frequency of paroxysms is low, may degenerate into either paroxysmal AF with more frequent paroxysms, or a sustained form of AF. Similarly, persistent AF may progress to permanent AF. Despite its name, the reversion of permanent AF to normal sinus rhythm is also possible, particularly in those cases where the AF is caused by an underlying disease process which is successfully treated (e.g. thyroid disease), or where a specialist procedure is performed that modifies the electrophysiological properties of the heart.
Without treatment, AF can sometimes result in a degree of haemodynamic instability which can represent a critical condition that requires immediate intervention to alleviate symptoms of breathlessness, chest pain and loss of consciousness, and restore haemodynamic stability (NICE 2006)

## *1.2 Prevalence*

AF is the commonest sustained cardiac arrhythmia. Much of the epidemiology of AF is derived from data from predominantly white populations, and information on AF in non white populations is scarce. Hospital practice data may give a biased view of the clinical epidemiology of AF, since only one-third of patients with AF may actually have been admitted to hospital.

The prevalence of AF roughly doubles with each advancing decade of age, from 0.5% at age 50–59 years to almost 9% at age 80–89 years.3 Conversely, AF is very uncommon in infants and children, unless concomitant structural or congenital heart disease is present.

**QOF data in Shropshire & Staffordshire for AF 2009/10**

## Quality and Outcomes Framework (QOF) for April 2009- March 2010, England

| PCT | No. of Practices | AF1 Patient Registers | | | AF4 AF patients diagnosed after 1/4/09 with confirmed diagnosis | | | AF3 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Pts with AF | Total pt population | Ratio | Pts with confirmed AF | Total AF pt population | Ratio | AF Pts with anti coag or anti-platelet therapy | Total pt AF patients | Ratio |
| Shropshire County | 44 | 5465 | 296419 | 1.8% | 514 | 530 | 95.0% | 4931 | 5268 | 93.6% |
| Telford & Wrekin | 20 | 2162 | 170515 | 1.3% | 227 | 238 | 94.5% | 1912 | 2089 | 91.5% |
| South Staffordshire | 95 | 9424 | 617241 | 1.5% | 929 | 939 | 97.1% | 8490 | 9079 | 93.5% |
| North Staffordshire | 35 | 3731 | 210734 | 1.8% | 339 | 351 | 96.6% | 3380 | 3643 | 92.5% |
| Stoke-on-Trent | 55 | 3952 | 280265 | 1.4% | 372 | 388 | 96.3% | 3587 | 3848 | 93.7% |
| **Totals** | **249** | **24,734** | **1,575,174** | **1.5%** | **2,381** | **2,446** | **96.1%** | **21,602** | **23,085** | **92.9%** |

**AF1**: The practice can produce a register of patients with atrial fibrillation

**AF4**: The percentage of patients with atrial fibrillation diagnosed after 1 April 2009 with ECG or specialist confirmed diagnosis

**AF3**: The percentage of patients with atrial fibrillation who are currently treated with anti-coagulation drug therapy or an antiplatelet therapy **(note: according to latest ESC guidelines anti-platelet therapy has no place in treatment of AF)**

# Chapter 2

The following chapter is set out in three separate sections:-

- Detection
- Investigation and assessment
- Treatment including Anticoagulation

## *2.1 Detection*

### 2.1.1 Patients may present in one of three ways to the clinician (see Network Guidelines, appendix 2):

1. Acutely ill patient is taken to A&E

2. Symptomatically- presents to primary care with any of the following:
    - breathlessness/dyspnoea
    - palpitations
    - syncope/dizziness
    - chest discomfort
    - stroke/TIA

    Manual pulse palpation should be performed to assess for the presence of an irregular pulse that may indicate underlying AF.

3. Opportunistically- detected during routine screening or during consultation for other medical condition, pre-operative assessment, pulse check by paramedics, primary care clinicians, Health Check clinic nurse

## *2.2 Investigation and assessment*

### 2.2.1 Electrocardiogram (ECG)

- **A 12 lead ECG is essential for the diagnosis of atrial fibrillation and should be performed in all cases where the arrhythmia is suspected**

- ECG features: no 'P' waves, an irregular undulating baseline, an irregular ventricular rate (50-200/min).
- The QRS complexes may be normal in appearance but may reveal possible underlying causes e.g. ischaemia, previous myocardial infarction, left ventricular hypertrophy or a pre-excitation syndrome.
- Some practices may employ a single channel ECG recorder (e.g. OMRON Heartscan) as a rapid first line assessment of arrhythmia

### 2.2.2 Transthoracic Echocardiography

- All patients with AF should be **considered for echocardiography** to define cardiac structure and function, including the presence of atrial dilatation, valvular

disease, left ventricular hypertrophy, cardiomyopathy and make an assessment of left ventricular size and function, where this might influence treatment, and in all cases where the underlying or associated condition needs treatment in its own right.

- Abnormalities beyond a mildly dilated (4.5cm) left atrium should prompt consideration of referral to secondary care.
- In the elderly (>75years) echocardiographic findings do not influence the recommendation for warfarin.

### 2.2.3 Ambulatory ECG monitoring / ECG event recorders

These may be of help in selected people to diagnose paroxysmal AF:

- a 24-hour ambulatory ECG monitor should be used in those with suspected asymptomatic episodes or symptomatic episodes less than 24 hours apart
- an event recorder ECG should be used in those with symptomatic episodes more than 24 hours apart

### 2.2.4 Blood tests

- Thyroid function tests may be required where hyperthyroidism is suspected as a possible cause for atrial fibrillation and other blood tests may be required for concomitant conditions eg. Heart failure
- Full blood count, serum electrolytes & creatinine, blood glucose, liver function tests.

### 2.2.5 Assess stroke and thrombo-embolic risk in AF

All patients should be assessed for stroke risk. This has hitherto been done using the CHADS2 score as recommended in the NICE guidelines 2006. However, the CHA2DS2VASc scoring system has been introduced and was published in the Guidelines of the European Cardiac Society 2010. This supersedes the CHADS2 scoring system recommended in the NICE guidelines (2006) and refines the risk/benefit ratio for anticoagulant treatment in patients with atrial fibrillation, though it does have the disadvantage of being more complex and therefore difficult to remember without suitable prompts.
The scoring system is based on clinical assessment and can therefore be carried out by any clinician and is shown in the table below.

One point is given for additional risk factors (cardiac failure, hypertension, age >65, diabetes or other vascular disease, female sex, and 2 for age >75 or previous stroke (including TIA, or other embolic event). A score of 2 mandates anticoagulation. For a score of 1 either Warfarin or no anticoagulation is recommended and a score of 0 requires no anticoagulation.

Warfarin is the anticoagulant used in these scoring systems. It is not yet clear whether the same scoring system would apply for the newer anticoagulant agents.

Anti-platelet therapy (which has previously been widely used as a “soft option”) has no place in the newer guidelines

**Table 8** $CHA_2DS_2VASc$ score and stroke rate

| (a) Risk factors for stroke and thrombo-embolism in non-valvular AF | |
|---|---|
| **'Major' risk factors** | **'Clinically relevant non-major' risk factors** |
| Previous stroke, TIA, or systemic embolism<br>Age ≥75 years | Heart failure or moderate to severe LV systolic dysfunction (e.g. LV EF ≤40%)<br>Hypertension - Diabetes mellitus<br>Female sex - Age 65–74 years<br>Vascular disease[a] |

| (b) Risk factor-based approach expressed as a point based scoring system, with the acronym $CHA_2DS_2$-VASc (Note: maximum score is 9 since age may contribute 0, 1, or 2 points) | |
|---|---|
| **Risk factor** | **Score** |
| Congestive heart failure/LV dysfunction | 1 |
| Hypertension | 1 |
| Age ≥75 | 2 |
| Diabetes mellitus | 1 |
| Stroke/TIA/thrombo-embolism | 2 |
| Vascular disease[a] | 1 |
| Age 65–74 | 1 |
| Sex category (i.e. female sex) | 1 |
| **Maximum score** | **9** |

| (c) Adjusted stroke rate according to $CHA_2DS_2$-VASc score | | |
|---|---|---|
| **$CHA_2DS_2$-VASc score** | **Patients ($n$=7329)** | **Adjusted stroke rate (%/year)[b]** |
| 0 | 1 | 0% |
| 1 | 422 | 1.3% |
| 2 | 1230 | 2.2% |
| 3 | 1730 | 3.2% |
| 4 | 1718 | 4.0% |
| 5 | 1159 | 6.7% |
| 6 | 679 | 9.8% |
| 7 | 294 | 9.6% |
| 8 | 82 | 6.7% |
| 9 | 14 | 15.2% |

See text for definitions.
[a]Prior myocardial infarction, peripheral artery disease, aortic plaque. Actual rates of stroke in contemporary cohorts may vary from these estimates.
[b]Based on Lip *et al.*[53]
AF = atrial fibrillation; EF = ejection fraction (as documented by echocardiography, radionuclide ventriculography, cardiac catheterization, cardiac magnetic resonance imaging, etc.); LV = left ventricular;
TIA = transient ischaemic attack.

Source: Guidelines for the management of atrial fibrillation European Society of Cardiology (2010)

Clinicians are advised to use the new $CHA^2DS^2VASc$ to make decisions about antithrombotic therapy based on patient-specific risk of stroke.

### 2.2.6 Information for patients

- Education and provision of verified written patient information
- Patient Decision Aids (PDA) can be extremely useful when talking to patients about risks versus benefits of different treatments and medications. This NPCi PDA poses the question "Atrial Fibrillation – is warfarin or aspirin better?"

Download from: http://www.npci.org.uk/therapeutics/cardio/atrial/resources/pda_af.pdf

### 2.2.7 GRASP Toolkit

This toolkit has been produced based on the work and experiences of the West Yorkshire Cardiovascular Network (WYCN) and stakeholder members. It specifically supports the AF CHADS2 tool designed to identify stroke risk in AF patients, it:

- Provides a set of MIQUEST queries to identify, for general practice, patients with a diagnosis of AF who are not on warfarin
- The GRASP - AF tool will calculate their stroke risk using the validated CHADS2 scoring system
- The tool will highlight patients with a CHADS2 score of 2 or more not receiving warfarin who would benefit from review to assess the issue of anti-coagulation
- The tool does not assess contraindications to warfarin, the decision whether or not to start warfarin remains a clinical one

The tool forms what is commonly known as a **Library**. The download library's allow the tool to run on the appropriate system, below are the names of the downloads and their corresponding systems:

**Generic 5 Byte Systems EMIS 5 Byte Systems (excl. PCS**
EMIS PCS EMIS LV
Vision EMIS GV
iSoft Synergy
iSoft Premier
Microtest

**CTv3 Systems**
Systemone
Healthysoft
Seetec

It is extremely important that the correct download is chosen is relation to the system it is to run on. Appendix (8)

A note of caution is required, While the tool may be helpful in identifying patients for anticoagulation it is based on the previous CHADS2 scoring system and may therefore miss some suitable candidates

### 2.2.8 Risk of bleeding

An assessment of bleeding risk should be part of the patient assessment before starting anticoagulation. Despite anticoagulation of more elderly patients with AF, rates of

intracerebral haemorrhage are considerably lower than in the past, typically between 0.1 and 0.6% in contemporary reports. This may reflect lower anticoagulation intensity, more careful dose regulation, or better control of hypertension. Intracranial bleeding increases with INR values .3.5–4.0, and there is no increment in bleeding risk with INR values between 2.0 and 3.0 compared with lower INR levels.

Various bleeding risk scores have been validated for bleeding risk in anticoagulated patients, but all have different modalities in evaluating bleeding risks and categorization into low-, moderate-, and high-risk strata, usually for major bleeding risk. It is reasonable to assume that the major bleeding risk with aspirin is similar to that with Vitamin K Antagonist (VKA), especially in elderly individuals. The fear of falls may be overstated, as a patient may need to fall 300 times per year for the risk of intracranial haemorrhage to outweigh the benefit of OAC in stroke prevention. Using a 'real-world' cohort of 3978 European subjects with AF from the EuroHeart Survey, a new simple bleeding risk score, HAS-BLED (hypertension, abnormal renal/liver function, stroke, bleeding history or predisposition, labile INR, elderly (.65), drugs/alcohol concomitantly), has been derived (Table 10).

**Table 10 Clinical characteristics comprising the HAS-BLED bleeding risk score**

| Letter | Clinical characteristic[a] | Points awarded |
|---|---|---|
| H | Hypertension | 1 |
| A | Abnormal renal and liver function (1 point each) | 1 or 2 |
| S | Stroke | 1 |
| B | Bleeding | 1 |
| L | Labile INRs | 1 |
| E | Elderly (e.g. age >65 years) | 1 |
| D | Drugs or alcohol (1 point each) | 1 or 2 |
| | | Maximum 9 points |

[a]Hypertension' is defined as systolic blood pressure >160 mmHg. 'Abnormal kidney function' is defined as the presence of chronic dialysis or renal transplantation or serum creatinine ≥200 μmol/L. 'Abnormal liver function' is defined as chronic hepatic disease (e.g. cirrhosis) or biochemical evidence of significant hepatic derangement (e.g. bilirubin >2 x upper limit of normal, in association with aspartate aminotransferase/alanine aminotransferase/alkaline phosphatase >3 x upper limit normal, etc.). 'Bleeding' refers to previous bleeding history and/or predisposition to bleeding, e.g. bleeding diathesis, anaemia, etc. 'Labile INRs' refers to unstable/high INRs or poor time in therapeutic range (e.g. <60%). Drugs/alcohol use refers to concomitant use of drugs, such as antiplatelet agents, non-steroidal anti-inflammatory drugs, or alcohol abuse, etc.
INR = international normalized ratio. Adapted from Pisters *et al.*[60]

It would seem reasonable to use the HAS-BLED score to assess bleeding risk in AF patients, whereby a score of ≥3 indicates 'high risk', and some caution and regular review of the patient is needed following the initiation of antithrombotic therapy, ESC Guidance (2010)

## *2.3 Treatment of Atrial Fibrillation*

There are 2 distinct treatment strategies which can be considered:

1. Rate control. Where the patient remains in atrial fibrillation and the therapeutic effort is directed towards controlling the ventricular response
2. Rhythm control. Where treatment is directed towards restoring and maintaining sinus rhythm

### 2.3.1 Rate control

- This is usually achieved with drugs such as digoxin, beta blockers and calcium antagonists (diltiazem and verapamil)
- The drug choice is dependant on coexisting conditions e.g., heart failure for which digoxin and beta blockers would be preferable, or asthma, for which digoxin and calcium antagonists may be preferred
- Adequacy of rate control can be assessed clinically according to symptoms, but ambulatory monitoring may be useful where there is doubt
- A pacemaker may occasionally be required for bradycardia support to facilitate drug therapy in some cases
- AV node ablation and pacemaker implantation can be employed if drugs fail or are not tolerated
- If simple drug therapy is not adequate or tolerated, patients should be referred to a cardiologist for further assessment and management

### 2.3.2 Rhythm control

- Restoration of sinus rhythm can be achieved by intravenous antiarrhythmic drug therapy (usually with flecainide) if there is no significant underlying ischaemic heart disease and left ventricular function is normal
- DC cardioversion is very effective at restoring sinus rhythm in most cases
- A rhythm control strategy should be considered for those with paroxysmal atrial fibrillation or atrial fibrillation of recent onset, It should also be considered for symptomatic patients and younger patients for whom permanent atrial fibrillation would carry significant additional risk e.g. over their lifetime (e.g. of developing cardiomyopathy, and changing risk of thrombo-embolism)
- Maintenance of sinus rhythm may be difficult, especially if there is significant atrial remodelling or if the atrial fibrillation has persisted for more than 6 months
- Maintenance of sinus rhythm may require the use of anti-arrhythmic drugs, such as flecainide, propafenone, sotalol or dronedarone, with attendant risk of pro-arrhythmic side effects.
- Amiodarone, although effective, should rarely be used, except in the short term because of its serious side effect profile
- For symptomatic patients in whom anti-arrhythmic drug therapy has failed there is the option of ablation therapies to maintain sinus rhythm. These are based on pulmonary vein isolation, with additional procedures as necessary
- **All patients for whom a rhythm-control strategy is considered should be referred to a cardiologist for further assessment and treatment**

### 2.3.3 Underlying & concomitant disease

- Patients with atrial fibrillation precipitated by thyro-toxicosis should be considered for rhythm control strategy when they are euthyroid
- Valvular and ischaemic heart diseases need appropriate treatment, as does heart failure

**Table 4** Management tool sourced from the European Society Cardiology Guidance 2010

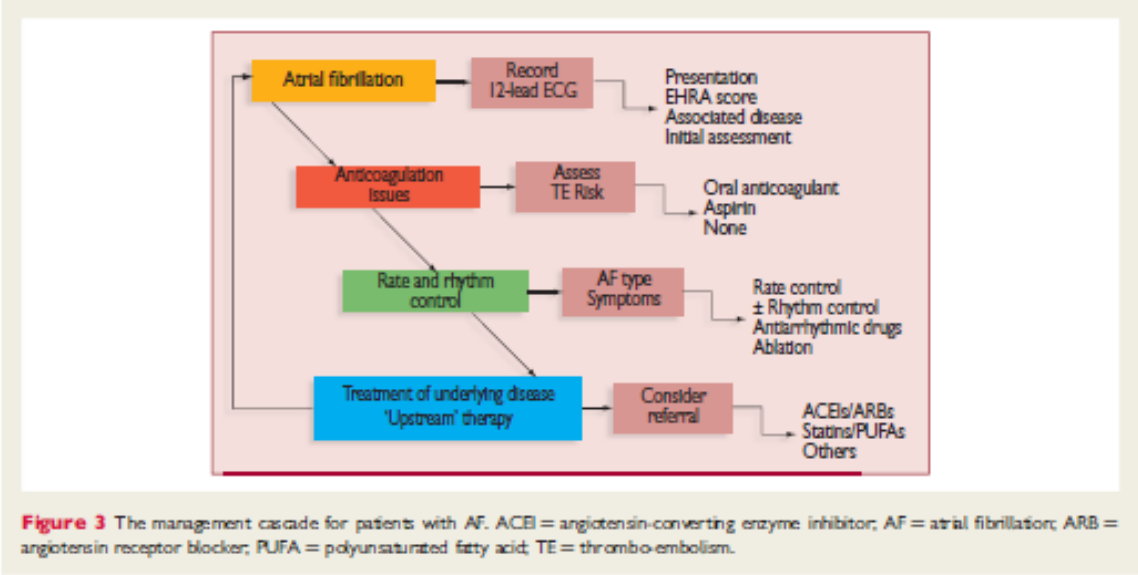



**Figure 3** The management cascade for patients with AF. ACEI = angiotensin-converting enzyme inhibitor; AF = atrial fibrillation; ARB = angiotensin receptor blocker; PUFA = polyunsaturated fatty acid; TE = thrombo-embolism.

The treatment of a patient with atrial fibrillation starts with consideration of anticoagulation, then treatment of the arrhythmia and consideration of underlying conditions and co-morbidities

### 2.3.4 Anticoagulation

At present this is with vitamin K antagonist therapy (usually Warfarin) which needs to be given in the context of a system of monitoring by INR (International normalised ratio) blood testing. Patients achieving a CHA2DS2-VASc score of 2 or more should be started on anticoagulant therapy (with more intensive monitoring if the HAS-BLED score is 3 or more).

Newer anticoagulant agents will soon be available for use such as the direct thrombin inhibitors Dabigatran and Factor Xa inhibitors Rivaroxaban and Apixaban. They do not require blood monitoring and are therefore, are easier to administer but their precise place in the treatment of AF is yet to be determined. The network medicine management group have developed an algorithm for oral anticoagulants for patients with atrial fibrillation (see appendix 6)

- A cost-effectiveness analysis of the sequential regimen outlined above, comparing dabigatran etexilate with warfarin using relative risks from the whole RE-LY trial population rather than from the post hoc subgroup analysis. The

analysis should include sensitivity analyses using a range of assumptions of international normalised ratio (INR) monitoring costs such as those used by the Evidence Review Group (ERG) (£279.36, £241.54 and £115.14) in addition to the cost stated in the manufacturer's submission (£414.90) (NICE Consultation document 2011)

- A cost-effectiveness analysis of the sequential regimen outlined above, comparing dabigatran etexilate with warfarin and including sensitivity analyses using a range of assumptions of INR monitoring costs and the assumptions suggested by the ERG:

  - a patient cohort representing people with atrial fibrillation in the UK, using the data reported by Gallagher et al. (2008)

  - a variable (per patient) cost of £115.14 for anticoagulant monitoring

The cost per stroke due to AF is estimated to be £11,900 in the first year after stroke

In the near future there will also be the possibility of percutaneous device occlusion of the left atrial appendage to prevent thrombo-embolism in patients unable to take anticoagulant therapy or in whom anti-coagulation is contra-indicated. Clinical trials are currently underway to assess the efficacy & safety of this therapy

The Network Medicines Management group developed an anticoagulation guidance for GP's which can be found in Appendix 8, this guidance also sets out education for patients and the GRASP toolkit.

Consideration should be given to evidence available which demonstrates that.
*The Department of Health* 'self management and self monitoring of anticoagulants by patients can improve compliance *Supporting people with long term conditions' (DH 2006) advocates*

'Make sure that self care support options also include access to self-monitoring devices and assistive technologies"

### 2.3.5 Projected Cardiac Activity for AF Ablation

Although there is sound epidemiological data on the population prevalence and incidence of Atrial Fibrillation, it is more difficult to find robust data on the proportion of such patients suitable for/or requiring AF ablation.
QOF data for 2009/10 has been extrapolated and potential numbers of AF patients for Ablation therapy equates to 247 (see appendix 5)

# Chapter 3 Current Position in Shropshire and Staffordshire

## *3.1 Detection*

**NHS Stoke on Trent**
Targeted pulse checks- through disease programme screening care e.g. NHS Health Checks, flu vaccines and annual reviews for long term conditions
Opportunistic pulse checks

**NHS North Staffordshire**
Health Checks- Pulse check included
Opportunistic pulse checks

**Shropshire**
LES in Telford and Wrekin
Health Checks
Shropshire current patient pathway for AF Draft (see appendix 1)

**South Staffordshire**
Health Checks pulse included

## *3.2 Assessment*

**NHS Stoke on Trent**
GRASP Tool- Plans to run tool in all practices

**NHS North Staffordshire**
GRASP Tool -Already run in some practices – Plans to run tool in all practices
ECG's in General Practice commissioned from Broomwell Health being trialled to detect AF

**Shropshire**
GRASP tool shared with GPs to be trialled
ECG monitors which detect AF being trialled

**South Staffordshire**
GRASP tool shared with GPs
ECG monitors which detect AF to be trialed

### *3.3 Anticoagulation*

| Anticoagulation Service provided | UHNST | Stafford | SATH | Burton | Comments |
|---|---|---|---|---|---|
| Out reach clinics | YES x2 | None | No | Runs a dosage service | |
| Warfarin initiation | Nurse specialist will take new referrals from GP and also visit ward | Patient discharged Appointment sent within 7 days to attend INR clinic | Patient referred to Path lab which runs anti coagulation clinic | The patient would have a form given with their INR on discharge and dosage. GP's refer into service | New service at UHNS due to commence 14 Feb |

**Current anticoagulation services across Shropshire and Staffordshire (Feb 2011)**

| | | | | | |
|---|---|---|---|---|---|
| Warfarin initiation | Nurse specialist will take new referrals from GP and also visit ward | Patient discharged Appointment sent within 7 days to attend INR clinic | Patient referred to Path lab which runs anti coagulation clinic | The patient would have a form given with their INR on discharge and dosage. GP's refer into service | New service at UHNS due to commence 14 Feb |
| Warfarin education | Nurse specialist Path lab | Path lab and give booklet | Path lab nurse | As inpatient Ward nurse or Warfarin nurse GP referral? | Queens Hospital send booklet out to patient in post |
| INR blood test | Path lab | Phlebotomy at GP practice or INR Clinic | Hospital only | GP or Hospital | North Staffs Practices own monitoring service is provided when patient INR stable |
| Specialist nurses | 4 specialist nurses | Nurse specialist and Coagulation nurse = 1WTE | 3 part time nurses interface between GP and trust | Warfarin nurse works with haematologist | New Warfarin initiation service at North Staffs |
| Warfarin prescribed | Nurse specialist would ring GP to inform INR and dosage | GP phoned in the afternoon with INR result and dosage of Warfarin to be prescribed, informs the patient | GP phoned in the afternoon with INR result and dosage of Warfarin to be prescribed who informs the patient | The patient telephones the dosage service and a dosage depending on their INR result would be given Booklet sent out | Stafford-Warfarin prescriptions are provided by the GP i.e. a supply of relevant tablets to the patient's dose. |

**Additional information for Stafford**

1. In Stafford's district-wide anticoagulation system (the majority of patients within the catchment) the phlebotomy is done locally, i.e. at the GPs surgery (or at Cannock Hospital or Stafford Hospital if more convenient). The samples and the books come to the laboratory where a venous INR is done. Dosing is done by the laboratory staff with computer assistance. Any queries or out of range patients are referred to the nurses or doctors (as appropriate) in haematology. The book is returned by post (and the patient is phoned if it is more urgent).
2. Warfarin initiation generally occurs via 3 routes. A) If a GP or hospital doctor wishes a patient to start Warfarin then they come to the Haematology Clinic before starting. A doctor will have reviewed the notes for any relevant factors. The nurse counsels the patient according to a systematised method and slow induction is begun. B) A ward patient starts Warfarin in hospital according to the fast induction algorithm. A haematology nurse counsels the patient (or brings the patient back rapidly after discharge) as does a pharmacist. C) A patient (generally DVT) is seen in A&E and sent home to be given Heparin injections by the Community Team (eg. Intermediate Care). The Community Nurses dose rapid induction using the hospital protocol and communicate directly with us if there is a problem. After A, B or C the patient joins our steady state system as above.

3. Education is as above. In-house and NPSA leaflets are used. Stafford's systematised method has been subjected to an RCT.

4. Stafford has a Clinical Nurse Specialist and a Coagulation Nurse (1 WTE between them). A business case exists for a further improvement and some admin help.

5. There are occasional patients being dealt with by other means, e.g. the GP is dosing them or the patient owns an INR machine and does their own etc. Stafford does not support or otherwise interfere with these patients and their Warfarin.

### *3.4 Current position in Shropshire and Staffordshire - patients perspective*

Care Plans can be designed, developed and delivered, but if these are purely focused on what might be achieved in terms of outcomes and targets there is a danger that the patient will struggle alone along the patient pathway.

The current "buzz word" in the NHS is 'humanise' - probably more important than at first realised. Financial cutbacks mean that patients need to be treated more quickly which can mean that the patient feels overwhelmed and swamped by a care package in hospital that is focused on technological advances, with the hand to hold and someone to listen to their concerns missing. In the same way whilst many healthcare

professionals see the whole telehealth, telemedicine and teletalk agenda in the community as a panacea, some patients feel unsupported because again the human contact is missing.

Whilst it is recognised that patients with Atrial Fibrillation will largely fall under the Unscheduled Care agenda, it is still important to have caring support as soon as practicable after diagnosis. For it is widely acknowledged that a patient who has an understanding of their condition, and an understanding of their medication at discharge will make far less demands on the NHS, either through bed-blocking and visits to their GP. This process will help the patient on the road to regaining a quality of life that is self caring with confidence.

This Atrial Fibrillation Strategy document has gone to considerable lengths to make sure that all the necessary elements for patient care are included. The following draws together all those elements in the form of a typical support package for the patient. However, its form should also be part of the training programme for staff that care for those patients.

The Self Care Plan

- At the earliest reasonable time the patient should receive an explanation of their particular arrhythmia.

- If medication is prescribed the patient should receive an explanation of what the medication is for and how and when to take it. If the patient takes other medication for another condition this is perhaps best done by a Pharmacist.

- The patient should be given a leaflet written in patient friendly language “to take home” to read at leisure and share with their family or carer. It should never be a substitute for a one to one discussion.

- Sometimes a patient and their carer might like to talk to another patient with the same condition. This must always be optional.

- The patient and their carer should be encouraged to attend a generic Self Care Course which would complement the Clinical support already received by the patient.

- Patients who live in *Shropshire* who feel the need for a continuing but less formal form of support should be signposted to the appropriate Self Help Group (on line directory Self Help Shropshire) These are peer led groups where the exchange of experience patient to patient plays an important part in recovery.

# Chapter 4 Education and training

A questionnaire has been developed which has being distributed to all GP practices (appendix 6) across Shropshire and Staffordshire to enable a baseline of current knowledge and understanding of Atrial Fibrillation.

Findings conclude that there is a requirement to continue medical professional education about the diagnosis, communication and aftercare of patients with AF.

Workshops arranged

- Workshops have taken place within North Staffs November 2009
- Atrial Fibrillation training days for the Healthcare Professionals have taken place with Staffordshire University
- AF education is being supported in primary care across the network
- AF training is taking place within GP protected learning time events

# Chapter 5 Implementation

Early detection, diagnosis and appropriate medical management do lead to fewer appointment and admissions, saving the NHS money and individuals long term ill-health problems.

## *5.1 Detection*

- Each locality should ensure there is a public information campaign to raise the general public's awareness of AF and pulse checks through the ACT initiative:
  **Ask** could AF affect you?
  **Check** your pulse.
  **Talk** to a medical professional.
  ACT Campaign starts 28 October 2011
- West Midlands Ask First Campaign taking place 15 September 2011 for 3 weeks, all regional networks involved in raising the awareness of AF, educate both professionals ands patients on pulse palpation, and risk stratification for stroke.
- Opportunistic pulse checks by paramedics, GP's and other professionals
  Opportunistic screening undertaken either in chronic disease clinics, on GP visits or practice nurse visits.
- NHS Health Checks endorsed by the Department of Health
- Detection of AF though opportunistic screening at flu clinics
- Local enhanced service (LES) schemes for detection, screening and review of AF
- New models for anticoagulation services in primary and community settings
- Development of tools to support the review of patients with AF, risk stratify for stroke and consider optimal therapy:
- The Guidance on Risk Assessment for Stroke Prevention in AF (GRASP-AF) tool now available for use across all GP clinical systems https://www.primis.nottingham.ac.uk/AF_CHADS/NHS_Improvement_files/PRIMIS_GRASPAF_Register.htm
- Decision support tool 'the Auricle' www.theauricle.co.uk
- Guidelines for primary to secondary care referral.
- Commissioners and providers use ASSET to establish baseline and to ensure that there are systems in place locally for the following key prevention measures: warfarin for individuals with atrial fibrillation

## *5.2 Diagnosis*

- Each GP practice will have the ability or access to services to interpret 12 lead ECG
- Greater proportion of individuals who have a history of stroke or cardiovascular disease or who are at a high risk who have had advice and/or are receiving treatment'.
- Review of known AF patients to ensure optimum treatment is being prescribed

i) Access pathway required for echocardiography, blood analysis and 12 lead and ambulatory ECG recording.

### *5.3 Management*

Work with Practice Nurses in their chronic disease management clinics, and participate in joint clinics for AF for the purpose of:

- Medication review
- Monitoring of blood results,
- Effectiveness of rate control and control of symptoms

# Chapter 6 Recommendations

**Summary of recommendations**

1. Support public information campaigns to raise awareness to prevent avoidable mortality and morbidity from strokes occurring as a result of , such as 'Ask First Campaign' September 15, 2011 for three weeks and ACT Campaign 28 October 2011. Further campaigns are scheduled for 2012
2. Distribution of information leaflets for AF patients within primary and secondary care
3. Locally agreed guidelines/pathways produced for the detection, treatment and management of AF including those patients for whom secondary care referral should be considered.
4. Network guidelines for the management of patients with cardiac arrhythmias from primary to secondary care have been produced. We aim to evaluate the impact of their introduction and distribution.
5. All practices should run the GRASP-AF tool, and upload the data to CHART online. GP's should use GRASP to identify high risk patients for review, and CHART online should be used by GP's and commissioners to benchmark and audit the quality of local service delivery. All practices should access the GRASP – AF toolkit using $CHA^2DS^2VASc$ score to detect patients and guide treatment.
6. AF workshops and educational programmes have been developed in association with Staffordshire University. Evaluation of these highlights the need for further educational sessions
7. Recognition of the fact that warfarin is much more effective than aspirin in preventing strokes associated with AF, commissioners should encourage the use of warfarin in AF patients at high risk of stroke.
8. Anti-coagulant clinics adhere to existing NPSA guidelines on audit and clinical
9. governance, with particular emphasis on time in therapeutic range and that the audit data so generated is actively reviewed by commissioners.
10. Individual patients on anti-coagulant therapy undergo an annual review which includes consideration of the continuing indication for anti-coagulation; the patient's bleeding risk and the patient's percentage of time in therapeutic range
11. Self-monitoring and self-management of oral anticoagulants should be considered to improve compliance
12. New anti-coagulant agents are becoming available which will offer advantages to patients of greater convenience and may in some groups offer superior efficacy or safety, however, the use of these new agents requires careful economic and clinical appraisal prior to their widespread use. Development of an anticoagulation algorithm for AF management being undertaken by Medicines Management Leads within network and will require continual reappraisal.

13. Easier access to services such as Transthoracic echocardiography should be encouraged
14. Paramedic's performing ECG's on all fall patients will identify those with AF
15. Commissioners should encourage practices to undertake targeted, opportunistic case finding (by pulse taking) as the best approach to detecting patients with asymptomatic AF. Appropriate groups for targeting include patients over 65 and patients with known heart disease, peripheral vascular disease, hypertension, diabetes or previous stroke.
16. Telehealth trialled within GP practices for ECG interpretation, report to inform practices
17. The baseline medical assessment of stroke patients should include documentation of the cardiac rhythm and a standard 12 lead ECG. This should be the subject of regular audit. Measures should be undertaken to ensure the ECG recording and the detection of AF are an integral part on on-going, inpatient stroke care.
18. Pilot project in Shropshire nursing homes to identify people in AF 'Can you feel it?' should be replicated across the network

In order to ensure that we build for the future for the management of this group of people we will:

a) Continue to support education and training of the workforce
b) Continue to support awareness raising, Local and National Campaigns
c) Participate in the development of a National Quality Standard for Atrial Fibrillation
d) Publish annual reports on progress and outcomes from the key objectives

# Reference List

Commissioning for Stroke Prevention in Primary Care The Role of Atrial Fibrillation. NHS Improvement (2009)

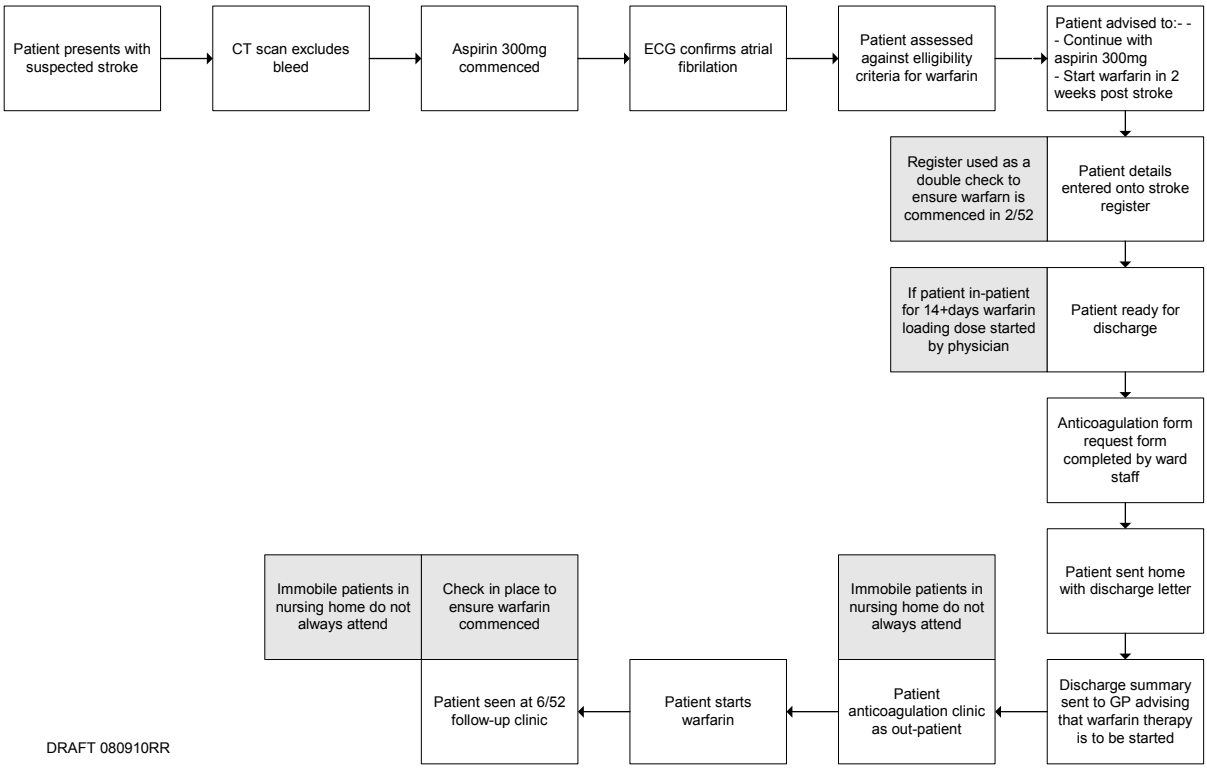
NICE Guidance for Atrial Fibrillation (2006)

NICE Atrial fibrillation - dabigatran etexilate Appraisal Consultation Document (2011)

European Society of Cardiology Guidelines for the management of Atrial Fibrillation (2010) European Heart Journal doi:10.1093/eurheartj/ehq278

## *Appendix 1 SaTH Patient Pathway for stroke with Atrial Fibrillation*

SaTH Patient pathway for stroke with atrial fibrilation




At PRH people start on Warfarin 14 days after their stroke. If they are an inpatient it is done in hospital. If they are discharged they fill in an anti-coagulation request with the date the Warfarin is to start and hand delivers it to the anti-coagulation secretary. They do not use heparin. They see all stroke patients that are able to get to the clinic at six weeks and check that they are successfully warfarinised; loading doses for warfarin at Princess Royal Hospital and Royal Shrewsbury Hospital are mostly 666

## *Appendix 2 Network Guidelines for management of patients with Cardiac Arrhythmias*

**SHROPSHIRE AND STAFFORDSHIRE NETWORK GUIDELINES FOR THE MANAGEMENT OF PATIENTS WITH CARDIAC ARRHYTHMIAS**

### 1. Patients presenting to primary care

History suggestive of arrhythmia, palpitation, tachycardia (some transient episodes of chest pain, sweating or shortness of breath).
Dizzy spells
Transient loss of consciousness (LOC)
Irregular pulse **(feel the pulse of all patients)**

Arrhythmia may or may not be present at time of consultation

**In all cases obtain baseline 12 lead ECG**

- If ECG shows arrhythmia – treat and/or refer as appropriate according to specific arrhythmia (see section 4 below). Give copy of ECG to patient
- If ECG normal & symptoms transient/intermittent – consider ECG arrhythmia monitoring: ambulatory ECG, event recorders, Implantable loop recorder (depending on frequency and severity of episodes) refer as necessary
- If unable to interpret ECG seek specialist help for ECG interpretation (consider need for specific training of individual professionals)

NB. **All cases of transient LOC should be referred for specialist assessment**

### 2. Patients presenting to emergency services

**Arrhythmia usually present – Obtain 12 Lead ECG**

- tachycardia / bradycardia – if clinically stable transfer to hospital for investigation & treatment
- cardiac arrest – resuscitate & transfer to hospital for investigation & treatment

### 3. Screening

- Incidental ECG findings
  - Wolff Parkinson White syndrome, Long QT, Brugada, Left Ventricular Hypertrophy, etc – refer for specialist assessment
  - Atrial fibrillation – if asymptomatic consider formal anticoagulation & echocardiogram.

- ECG screening – planned screening to detect atrial fibrillation (if irregular pulse detected).
- Family screening following sudden death – need specialist input, cardiologist, pathologist, genetics service

## 4. Treatment of Specific Arrhythmias (after ECG diagnosis)

**Atrial Fibrillation**

The 2 main forms of treatment are rate control and rhythm control:

Rate control preferred as initial treatment for patients who have been in atrial fibrillation for a prolonged or indeterminate period. Use digoxin, beta blockers, verapamil or diltiazem, alone or in combination. Monitoring by clinical assessment or with ambulatory ECG as necessary.

Attempts to restore sinus rhythm should be considered in patients with recent onset of atrial fibrillation with no obvious irreversible underlying cause. Refer to cardiologist for cardioversion and / or anti-arrhythmic drug therapy

Patients who remain symptomatic despite appropriate drug treatment, should be considered for ablation therapy –

- Pulmonary vein isolation ± atrial ablation for paroxysmal AF
- AV node ablation and pacemaker implantation for chronic AF with inadequate rate control

**All patients with atrial fibrillation should be considered for formal anticoagulation** (as indicated in NICE AF guidelines)

**Atrial flutter, Atrial Tachycardias & Junctional Tachycardias (SVTs)**

All patients should be referred to a cardiac rhythm specialist and be offered the option of potentially curative ablation therapy.

**(NB. Patients with atrial flutter should be considered for anti-coagulation as for patients with atrial fibrillation)**

**Ventricular Tachycardias**

All patients presenting with ventricular tachycardia should be referred to a cardiologist for full assessment of underlying structural heart disease and for consideration of ICD or ablation therapy

**Ventricular Fibrillation**

After successful resuscitation, which is more likely given the advances in efficiency and treatments given by the ambulance services, all patients should be referred to a cardiologist for full assessment of underlying structural heart disease and for consideration of ICD therapy.

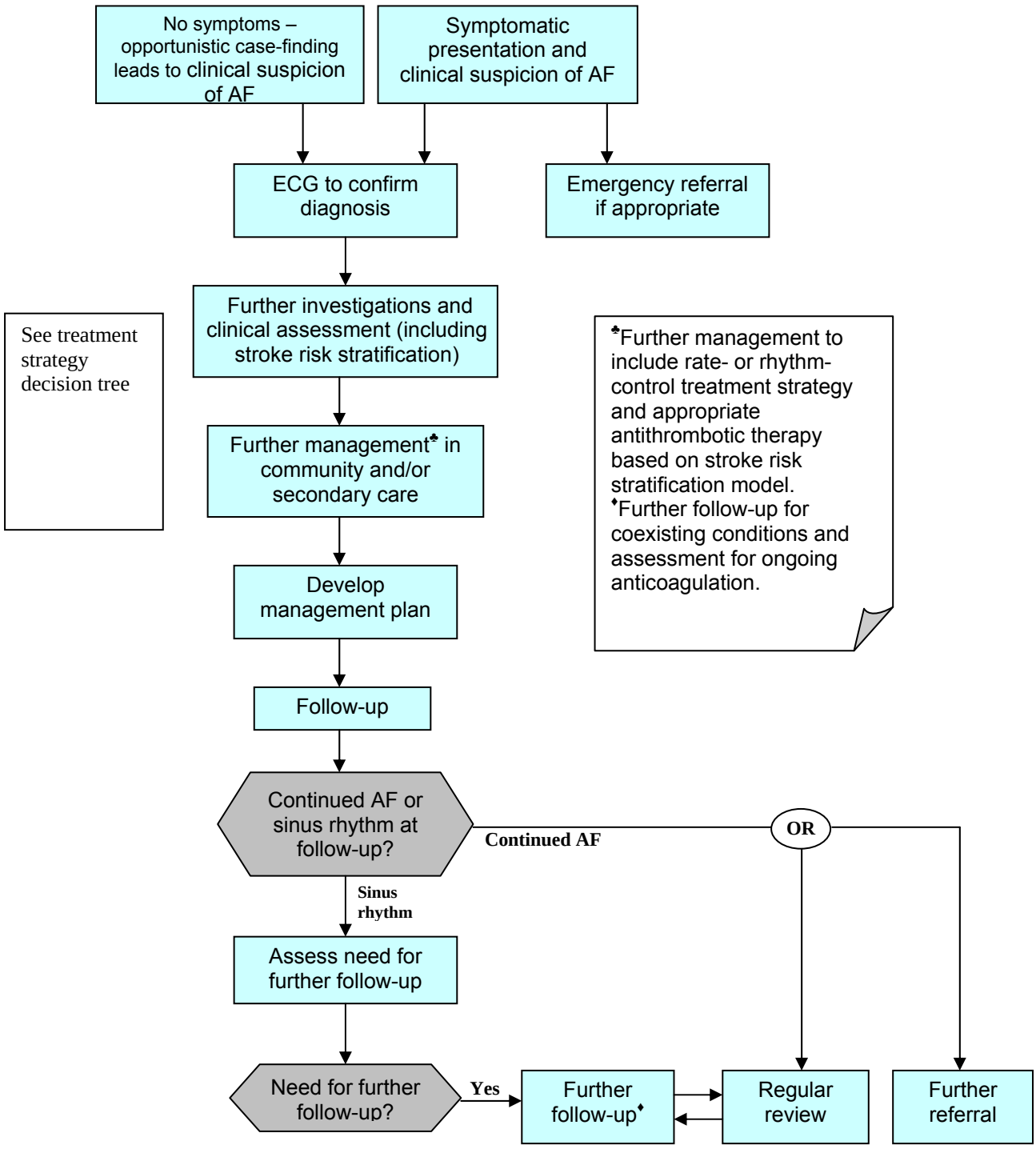
**Sinus node disease (sick sinus syndrome) & AV Block**

All patients should be referred to a cardiologist for consideration of permanent pacemaker implantation.

Patients requiring permanent pacemakers/ ICDs should be paced using modes providing optimum rhythm correction (regardless of age)

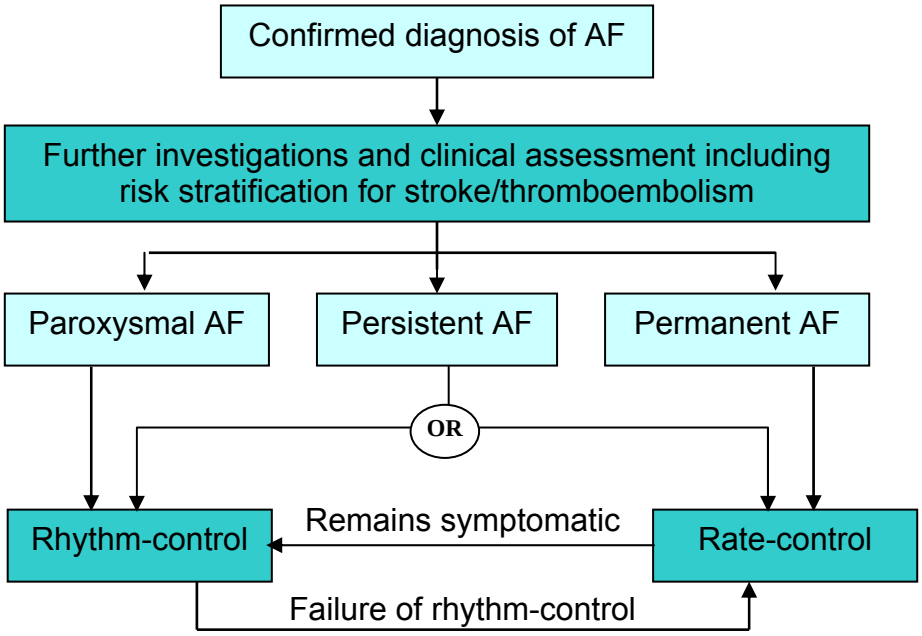
Patients with concomitant LV impairment should be assessed for CRT (see Heart Failure Guidelines)

## *Appendix 3 The algorithms - AF care pathway*




NICE Guidance (2006)

***Appendix 4 Treatment strategy decision tree***



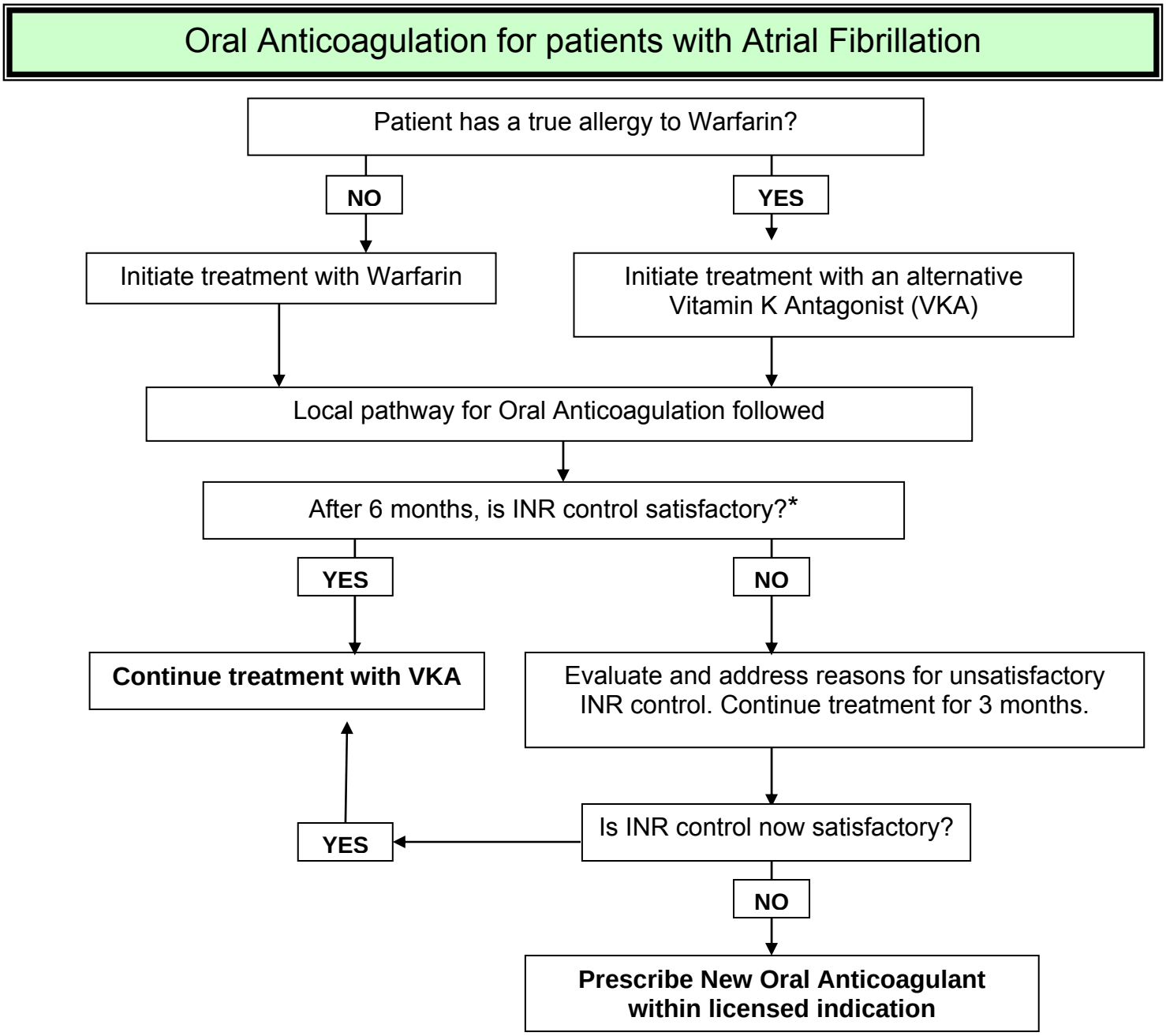
***Appendix 5 Potential Numbers of AF Patients for Ablation Therapy*** (assuming 1% of total AF patients) 2009/10 QOF data

| PCT | Pop (k) | Total AF patients | 10% | 1% |
|---|---|---|---|---|
| **South Staffordshire** | **599** | **9424** | **942** | **94** |
| North Staffordshire | 210 | 3731 | 373 | 37 |
| Stoke-on-Trent | 246 | 3952 | 395 | 40 |
| **North Staffordshire** | **456** | **7683** | **768** | **77** |
| Shropshire County | 289 | 5465 | 546 | 55 |
| Telford & Wrekin | 162 | 2162 | 216 | 22 |
| **Shropshire** | **451** | **7627** | **752** | **75** |
| Total Shropshire & Staffordshire | 1506 | 24734 | 2473 | 247 |

Updated Feb 11

NB. See network Arrhythmia Strategy for explanation

***Appendix 6 Oral Anticoagulation for patients with Atrial Fibrillation***




***Satisfactory INR control:**

- Percentage time INR in range > 50 / 60 / 70% (TBC – locally)
- Not more than 3 episodes of INR > 5 in the last three months
- Not more than 2 episodes of INR > 10 in the last three months
- No episode of significant bleeding on VKA in the last 12 months
- No episodes of life threatening or intracranial bleeding while on VKA

*Appendix 7 Pre-Project Clinical Questionnaire*

# Pre-Project Clinical Questionnaire

| **Practice Name & Address:** |
|---|
| |

**Where options are stated please tick the appropriate response.**

1. I am a

   **Doctor** ☐ **Nurse** ☐ **Practice Manager** ☐

2. I am confident in the diagnosis of AF

   **Very** ☐ **Moderately** ☐ **Not really** ☐ **Not at all** ☐

3. I am confident in the management of people with AF

   **Very** ☐ **Moderately** ☐ **Not really** ☐ **Not at all** ☐

4. I refer the majority of patients newly diagnosed with AF to a consultant specialist

   **Yes** ☐ **No** ☐ **N/A** ☐

5. I would refer a patient of 80 with AF and no other problems to a:

   **Cardiologist** ☐ **Care of the Elderly** ☐ **Not refer** ☐
   **N/A** ☐

6. The most important issue with AF patients is to arrange cardioversion

   **Yes** ☐ **No** ☐ **Don't Know** ☐

7. The most important issue with AF patients is to arrange anticoagulation

   **Yes** ☐ **No** ☐ **Don't Know** ☐

8. I always use a recognised scoring system to assess stroke risk in AF patients

   **Yes** ☐ **No** ☐ **Don't Know** ☐

9. I am confident in discussing the risks and benefits of anticoagulation with my patients

**Very** ☐ **Moderately** ☐ **Not really** ☐ **Not at all** ☐

10. The recommended INR range for patients with AF is: - -

_____

**Don't know** ☐

11. We refer our patient to the local clinic for anticoagulation

**Yes** ☐ **No** ☐ **Don't Know** ☐

12. We arrange anticoagulation in house including testing and dosing for the majority of our AF patients

**Yes** ☐ **No** ☐ **Don't Know** ☐

13. Does your practice have an ECG machine?

**Yes** ☐ **No** ☐

14. Are you confident in the interpretation of an ECG?

**Very** ☐ **Moderately** ☐ **Not really** ☐ **Not at all** ☐

15. If so are you a: -

**Doctor** ☐ **Practice Nurse** ☐ **Other** ☐

16. Please use the space provided below to answer what you are particularly hoping to gain from this project

***The responses given to this questionnaire are not for public viewing, nor are they to scrutinise general practice they are purely to gain an understanding of AF diagnosis and management in primary care and will assist in planning future work by the Shropshire and Staffordshire heart and Stroke Network in aid of spreading the work undertaking this project. A similar questionnaire will follow the end of the project covering both clinical and structure/process of the project.***

**Thank you very much**

**Associate Clinical Lead Julie Oxtoby and Project Lead Eunice Foster**

*Appendix 8 GRASF-AF Audit Tool*

NHS Improvement

# GRASP-AF audit tool

PRIMIS+

NHS Improvement GRASP-AF tool

In order to use this tool you will need to register with PRIMIS+ for GRASP-AF and then download the GRASP-AF library. Please follow these instructions carefully. Note that all the links in this page will open in a new browser window.

**Registering with PRIMIS+ for GRASP-AF**

This is a three step process, all of which **must** be completed in the correct order before you can download the library. If you are already registered with the PRIMIS+ Profile Centre, you will still need to complete Step 3.

1. **Register with the PRIMIS+ Profile Centre**

   Please follow this link to register.

2. **Validate your details (upgrade to Level 2)**

   This procedure is different depending on whether you are practice based or not:

   Practice based staff

   To validate your details please logon to the PRIMIS+ Profile Centre and go to the "Manage your details" section. Then select the option "Upgrade to Level 2 to use CHART Online". As part of the process, you will be asked for your practice's immForm (HPA) password, so please make sure you have it ready. Detailed instructions on how to upgrade to Level 2 can be found here.

Non practice based staff

Please email Richard Healicon at NHS Improvement with your request. Please supply your name, position, employing authority (eg network, PCT, academic department etc), email address, telephone number and a brief summary of your role within the project. When you receive an email confirming acceptance of your request you can go on to Step 3.

3. **Sign the GRASP-AF Data Collection Agreement (DCA)**

   The GRASP-AF DCA can be found here. Please read carefully and follow the instructions to confirm that you accept the agreement.

### Obtaining the GRASP-AF library

Once you have completed the above three steps successfully, you can now download the GRASP-AF library. To install and run this library you will need to have PRIMIS+ CHART (an Excel program from PRIMIS+) installed on your computer. Please click here for detailed instructions on how to download and install PRIMIS+ CHART and the GRASP-AF library. If you have not used PRIMIS+ CHART before, it is highly recommended that you read these instructions first.

The PRIMIS+ CHART program and the GRASP-AF library can be found here. It is recommended that you always obtain the library from this link as it is amended regularly, for example when new Read code updates are released.

### Uploading your data to CHART Online

Uploading to CHART Online will enable you to compare your results anonymously with other practices. Once you have viewed the data in CHART it is a simple process to upload it to CHART Online. Full instructions on how to do this can be found here. Please note that only aggregate data (i.e. *not* patient level data) is uploaded to CHART Online.

We would encourage you to save your initial baseline set of data and than you can upload further sets of data to CHART Online when you are ready. This will enable you to compare your latest results with your original baseline and monitor the impact of review of your AF patients for optimal treatment and reduction in risk of stroke.

The GRASP-AF tool can be run annually or quarterly to support review of $CHADS_2$ risk of stroke for patients with AF.

Thank you for your participation. If you need any further assistance please contact support@improvement.nhs.uk.

## *Appendix 9 Anticoagulation for Atrial Fibrillation Guideline*

**Shropshire and Staffordshire Heart and Stroke Network** NHS

### GRASP-AF Query and risk stratification tool is FREE and available for use with all GP clinical systems in England

GRASP-AF provides a set of MIQUEST queries to identify, for your practice, patients with a diagnosis of AF who are not on warfarin.

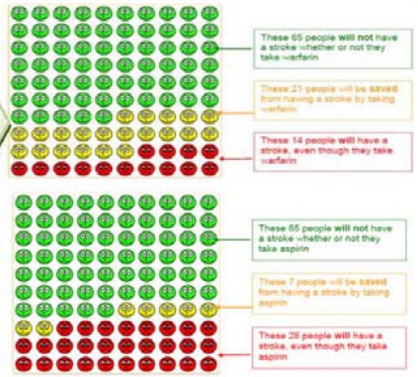
It calculates their risk of stroke using the validated CHADS2 scoring system and highlights patients with a CHADS2 score of 2 or more who are not on warfarin and would benefit from a review to assess the issue of anticoagulation.

**To find out more about this new tool and to sign up to run the search simply go to www.improvement.nhs.uk/graspaf**

Patient Decision Aids (PDA) can be extremely useful when talking to patients about risks versus benefits of different treatments and medications.

This NPCi PDA poses the question **"Atrial Fibrillation – is warfarin or aspirin better?"**

Download it from:
http://www.npci.org.uk/therapeutics/cardio/atrial/resources/pda_af.pdf




### Contraindications to Warfarin[4]

- Pregnancy
- Hypersensitivity to warfarin
- Within 2 days of surgery
- Bacterial endocarditis
- Severe renal or hepatic disease
- Peptic Ulcer
- Severe hypertension

### Possible Side Effects[4]

- Bleeding/bruising
- Hypersensitivity
- Rash
- Alopecia
- Diarrhoea
- Purple toes


**References**

1. National Prescribing Centre. MeReC Bulletin Volume 12 No 5. http://www.medman.nhs.uk/ebt/merec/cardio/atrial/resources/merec_bulletin_vol12_no5.pdf
2. NHS Improvement. Commissioning for Stroke Prevention in Primary Care – the role of atrial fibrillation 06/09
3. Mant et al The Lancet Vol. 370 11th August 2007
4. BNF 57. March 2009. Pharmaceutical Press
5. SIGN Guideline No. 36 http://www.sign.ac.uk/guidelines/fulltext/36/index.html March 1999.

**Useful reading**

Primary Care Anticoagulation Monitoring Guidelines for patients taking warfarin- Surrey PCT March 2008


Review Date: November 2011 Adapted from Surrey Heart and Stroke Network guidelines

### Important information for patients

**Informing patients with AF about the benefits and risks of taking warfarin will be helped with the right resources.**

INR = International Normalised Ratio. It is a method of expressing how long it takes blood to clot.

- Warfarin should be taken at roughly the same time each day (preferably 6pm).
- Do not confuse the dose in mg with the number of tablets that you take.
- It is important to tell the dentist that you are taking warfarin.
- Before buying any medicines including alternative remedies tell the pharmacist that you are taking warfarin.
- Do not take aspirin unless advised to by your GP.
- Any major changes in your diet may affect how your body responds to your anticoagulant medication.
- Cranberry juice can affect your INR and should be avoided altogether.
- If your diet changes greatly over a seven-day period, you should have an INR test.
- It is dangerous to 'binge drink' whilst taking anticoagulants.

- **Do patients know why they are taking warfarin, their target INR and the importance of attending for INR tests?**
- **Do patients know what to do if they miss a dose?**

This information is taken from the Yellow Oral anticoagulant therapy booklet which should be given to a patient when they are started on warfarin http://www.npsa.nhs.uk/nrls/alerts-and-directives/alerts/anticoagulant

**Patient preference, compliance and facilities for INR monitoring should always be taken into account as well as stroke and bleeding risk[5].**

**The following organisations offer advice, support and information for patients with AF:**

- The Atrial Fibrillation Association (AFA) www.atrialfibrillation.org.uk
- The Stroke Association www.stroke.org.uk
- The Arrhythmia Alliance www.heartrhythm.org.uk

**Information for medical professionals:**

- The AFA have a Toolkit endorsed by the DH, PCCS and HRUK. Double-sided information sheets on all aspects of AF diagnosis and management written for medical professionals as well as patients can be downloaded from www.atrialfibrillation.org.uk Go to AFA Toolkit.

# WARFARIN: DISCUSSING WARFARIN THERAPY WITH YOUR PATIENT

## ANTICOAGULATION IS UNDERUSED IN THE TREATMENT OF ATRIAL FIBRILLATION

Starting warfarin can be a daunting prospect for many patients. Informing them about what to expect from therapy, the potential benefits and possible side effects can help them make that decision.

Warfarin is considered to be underused in AF, even though most systematic reviews have shown that it is better than aspirin at reducing the risk of stroke[1]

### AF as a Cause of Stroke

National Data

- 18% patients presenting with stroke are in AF at presentation[2]
- This equates to 16,000 strokes, of which **12,500 are thought to be directly attributable to AF**[2]
- AF is therefore directly responsible for 14% of all strokes[2]
- The annual risk of stroke is 5-6 times greater in AF patients than in people with normal heart rhythm[2]
- Warfarin is highly effective in preventing stroke in AF, reducing risk of stroke by 64% compared to placebo[3]
- Aspirin only reduces this risk by 22%[3]
- The 2006 NICE guidance on AF costing report concluded that **46% of patients who should have been receiving**

### The BAFTA Trial[3]

- RCT of warfarin (target INR 2.5) vs. aspirin (75mg) in atrial fibrillation
- 973 patients aged 75 years and over recruited from 234 practices (mean trial age = 82yrs)
- Stroke risk was halved in the warfarin group.
- There was no increased bleeding risk with warfarin in comparison with aspirin

20 strokes prevented per 1000 patients with AF treated per year with warfarin vs. aspirin
**NNT = 50 for 1 year**

Warfarin protects the over 75yrs against risk of stroke associated with AF, the group with the highest incidence of stroke.

**Risk of Major Haemorrhage with Age p.a.[3]**

| Age Range | Warfarin | Aspirin | Relative Risk |
|---|---|---|---|
| 75-79 | 1.1% | 0.8% | 1.44 |
| 80-84 | 2.3% | 2.4% | 0.96 |
| 85+ | 2.9% | 3.7% | 0.77 |

### Does my patient need warfarin?

**Assessing Stroke Risk in AF patients.**

**CHADS2** is an easy-to-use classification scheme that estimates the risk of stroke in people with AF.

Physicians and patients could use CHADS2 to make decisions about antithrombotic therapy based on patient-specific risk of stroke[2].

| CHADS2 item | Points |
|---|---|
| Congestive Heart Failure | 1 |
| Hypertension (systolic >160mmHG) | 1 |
| Age greater than 75yrs | 1 |
| Diabetes | 1 |
| Prior Stroke or TIA | 2 |

**Risk Calculation for CHADS2[2]**

| Total Score | Risk of Stroke | Antithrombotic Therapy Indicated |
|---|---|---|
| 0 | Low | Aspirin |
| 1 | Moderate | Warfarin or Aspirin |
| 2 or more | High | Warfarin |

## Glossary

| Abbreviation | Meaning |
|---|---|
| AF | Atrial Fibrillation |
| INR | International Normalised Ratio |
| ERG | Evidence Review Group |
| NNT | Number Needed to Treat |
| ECG | Electrocardiogram |
| ESC | European Society of Cardiology |
| TIA | Transient Ischaemic Attack |
| OAC | Oral Anti Coagulation |
| PRH | Princess Royal Hospital |
| ICD | Implantable Cardiac Devices |
| CRT | Capillary Refill Time |
| RCT | Randomised Controlled Trial |
| WTE | Whole Time Equivalent |
| DVT | Deep Vein Thrombosis |
| LOC | Loss of Consciousness |