



Managing Atrial Fibrillation in Primary Care

Key issues for primary care practitioners, managers and commissioners of services



Summary

Atrial fibrillation (AF) is the most common sustained adult cardiac arrhythmia. There are currently over 1 million^{1,2,3,4} people diagnosed with AF in the UK, with many more (25-30%) who are thought to have the condition without it being diagnosed yet.^{5,6} The prevalence of AF increases with age, and to more than 15% in those aged 75 years and over.⁶ AF increases risk of death, stroke, thromboembolic events, heart failure, vascular dementia, hospitalisations, reduced quality of life and diminished exercise capacity.⁵

AF is costly in terms of increased mortality, morbidity and reduced quality of life.⁷ Within the UK, it is a condition that is not always managed well, with patients reporting inadequate explanations of their condition and treatment options.⁷

Audits across the UK confirm that the use of anticoagulation to reduce the risk of AF related stroke is underutilised.⁷ AF related strokes are more debilitating, with those affected being less likely to get back to independent living and less likely to survive.^{8,9}

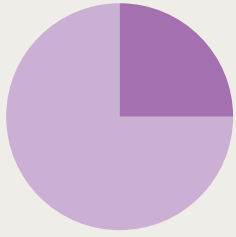
The most common presenting symptoms are palpitations, breathlessness, dizziness and syncope although as many as 25-30% do not have symptoms.^{10,5} Therefore, many fail to present for treatment, despite having a greatly elevated risk of stroke.

The management of AF in UK primary care presents a resource challenge that is set to rise as our population ages. The burden on resources comes mainly through referrals and hospital admissions.¹¹ There is an opportunity to identify potential efficiencies, if strategies to address these issues are incorporated into planning and policy development.^{11,12} The challenge to resources, through treatment of AF, is outweighed by the current challenge on resources that exists in managing preventable AF related strokes.

This document is primarily aimed to be used by primary care practitioners, managers and commissioners of services.



Why is it important?



1 in 4

life time risk of developing AF after the age of 40¹³

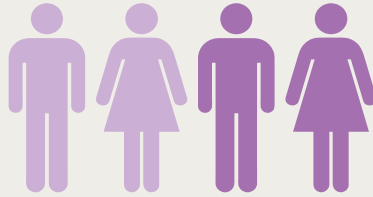
1/3 of people

do not recognise that they have developed AF²⁰; identifying the need to increase case finding

x5

5-fold increase

of AF-related stroke if left untreated⁸



Around 50% of people

with an AF-related stroke will not survive beyond 12 months and those that do will suffer increased disability compared to those who have non-AF related strokes^{8,9}



Billions of pounds

are spent each year from health and social care budgets as a result of AF and AF-related strokes^{15, 16, 17} plus additional millions in informal care costs and productivity losses (i.e. income lost) due to care, disability and death¹⁷

11,600

AF-related strokes could be averted each year if everyone with AF received appropriate treatment including anticoagulation¹⁴

The proposal

Develop and evidence the case to promote and enable optimal management of people living with AF, from early diagnosis through to living with this long-term condition.

The purpose of change

To improve the identification, diagnosis, risk stratification and optimal management of people with AF to reduce the risk of AF-related stroke events and known complications such as heart failure (HF), premature mortality, reduced quality of life and vascular dementia.

THE ATRIAL FIBRILLATION CHALLENGE

Challenge of the Increasing Prevalence of Atrial Fibrillation

- The prevalence of AF is expected to significantly increase from 1.6%¹⁸ (true UK prevalence is estimated to actually be 2.4%¹⁹) due to the growing population of elderly people and the increasing incidence and prevalence of those living longer with associated long term conditions.²⁰
- There are significant gaps in primary care with substantial numbers of cases being undiagnosed. Of those treated for AF, large proportions are under treated and therefore remain at increased risk.
- Optimal management of those with hypertension and HF will reduce the numbers of those developing permanent AF.⁵
- HF is both a consequence and a cause of AF; the prevalence of AF in those with HF in the Framingham Heart Study ranged between 5% (mild HF) and 50% (severe HF).²¹

AF Detection and Stroke Prevention

- Those living with AF have a fivefold increase in their stroke risk, depending upon the presence of various stroke risk factors.¹⁵ To reduce the likelihood of AF leading to stroke (with the resultant impact and devastation being suffered by individuals/family), we need to ensure that individuals receive appropriate treatment.
- It is estimated that the incidence of stroke is two to seven times higher in those with non-valvular AF compared to those without AF.²²
- The stroke risk associated with AF does not correlate to the existence or severity of symptoms.
- Having AF increases the individual's risk of stroke, developing HF,²¹ reduced quality of life and increased risk of death.⁷

We need to:

- ✓ Increase the frequency of pulse checks; opportunistic case finding for AF (pulse checks) in those aged 65 years and older is cost effective in comparison to relying on patients to present with symptoms.²³
- ✓ Target the use of aspirin; aspirin for stroke prophylaxis in AF is now not recommended as it does not provide effective stroke risk reduction but increases the risk of major bleeding (including intracranial bleeds).⁶
- ✓ Adopt an evidence based approach to stroke prevention in AF. Addressing fears, held by clinicians and patients alike, regarding bleeding with anticoagulation is of vital importance. Using the evidence based CHA₂DS₂-VASc Score (<http://www.acc.org/tools-and-practice-support/clinical-toolkits/atrial-fibrillation-afb>) is recommended for stroke risk assessment for those with non valvular AF (i.e. AF not secondary to significant valve disease, such as mitral stenosis/ regurgitation and aortic stenosis).
- ✓ Ensure that anticoagulation is discussed and offered to individuals with a score of ≥2, and considered for all those with a score of 1, except if they are aged <65 years and the point is due to female gender alone.⁷
- ✓ Endorse stroke risk prophylaxis regardless of whether the rhythm is AF or atrial flutter and whether it is paroxysmal, persistent or permanent.
- ✓ Promote discussion between prescribers and individuals with AF about the choice of anticoagulant.
- ✓ Ensure that those on non-vitamin K antagonists, such as Warfarin, have a satisfactory time in treatment range (65% minimum). There is good evidence to show that a patient self-monitoring can be more effective in preventing strokes than the healthcare professional in a clinic. Self-monitoring of oral anticoagulation: a systematic review and meta-analysis of individual patient data ([http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(11\)61294-4/abstract](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(11)61294-4/abstract))
- ✓ Make sure that those with poor time in treatment range are reviewed; NICE guidance highlights that individuals who have a poor time in treatment range with vitamin K antagonists do less well, having more bleeds and strokes due to INR levels being too high (risk of bleeding) or too low (risk of stroke). If their time in treatment range cannot be improved they should be considered for alternative stroke prevention measures.⁶
- ✓ Encourage a systematic/audit approach to identify those who remain on anti-platelet therapy, in addition to anticoagulation; in stable vascular disease it has been shown that using anti-platelet therapy in addition to anti-coagulation increases the risk of major bleeding without reducing mortality or myocardial infarction.^{16,24} Some patients may need a short period of time on dual or even triple therapy, (e.g. post coronary stent) their individual risk versus benefit needs to be carefully considered and discussed with them by a specialist.²⁴
- ✓ Promote the use of HAS-BLED Score⁷ (<http://www.acc.org/tools-and-practice-support/clinical-toolkits/atrial-fibrillation-afb>) to assess bleeding risk in patients starting anticoagulation in order to demonstrate how bleeding risk can be reduced by risk factor modification and monitoring.

Patient Care

- ✓ **Improved public/patient understanding – personalised package of care including:**
 - stroke awareness and measures to prevent stroke
 - who to contact for advice as indicated
 - psychological support
 - up-to date comprehensive education and support
 - Adults with AF on long-term vitamin K antagonist therapy are achieving satisfactory time in treatment range (>65%) and supported to self-manage with a coagulometer.
- ✓ **Prompt referral for those with symptomatic AF**
Individuals whose symptoms of AF fail to respond to treatment need to be referred for specialist management within four weeks.⁶
- ✓ **Recognising AF as a long-term condition**
The benefits and risks of treatment and progression of AF need regular review and discussion with individuals. These discussions will encompass issues such as anticoagulation, symptoms and onward monitoring.

Information

Further investment in information technology to support service delivery may be required in some areas to improve patient safety and quality of care. Whittington Health in North Central London has evolved a shared care and patient centric approach for AF and anticoagulation. The web software combines patient management tools, accredited learning and clinical governance software designed to be interoperable with a wide range of hospital and GP systems and tools (<http://www.healthcarepublichealth.net/resources/HCPH%20September%202014.pdf>). The clinical governance, data analytics and clinical outcome measures are supported by the software which is interoperable with a wide range of hospital and GP systems and tools (<http://heliconhealth.co.uk/why-heliconheart/features/>)

Quality Improvement

Taking a systematic approach to case finding and reviewing those known to have AF is an essential component of improving the quality care. Audit tools such as GRASP AF (<http://www.nottingham.ac.uk/primis/tools-audits/list-of-audit-tools/grasp-suite/grasp-af/grasp-af.aspx>) help to support improvement in the management of those with existing AF. The GRASP AF tool was developed in 2000 and it is available to all CCGs in England, at no cost. This audit tool supports General Practice in case finding and can also highlight individuals at risk of stroke and not currently anti coagulated. It is not free in Scotland, Northern Ireland or Wales. However, Wales has a similar audit tool called Audit AF.

Staff – Professional Development and Support

There remains a gap in UK primary care between best practice and actual practice in terms of diagnosis and prescribing decisions such as under prescribing of beta-blockers, rate limiting calcium antagonists and thromboprophylaxis.^{11,12} Conversely, there remains an undesirable high prevalence of prescribing digoxin as monotherapy.¹¹ Education for healthcare professionals will need to include case finding, anticoagulation evidence and options, time in treatment range, utilising patient decisions aids and promoting self-monitoring by individuals with AF.

Leadership – Local Champions

There needs to be local champions at all levels (primary care practitioners, managers and commissioners) who will lead effective change in the arena of AF and stroke prevention. Further improvement may come through exploring alternative models such as pharmacist support for adherence and Warfarin control.

INTEGRATED CARE

AF is a long term condition requiring integrated care across primary, secondary, tertiary and social care to ensure that patient pathways are seamless, safe and person centred. The BHF has recently funded and externally evaluated nine Integrated Care Projects, including two projects which incorporated the management of AF. Both projects were funded for 2 years for two 0.5wte specialist nurses.

NHS Tayside Project – There were three strands around arrhythmia care; one included establishing rapid access AF clinics across the Health Board. This project has now successfully been implemented, operating at full capacity and now sustained by the NHS Health Board.

NHS Lanarkshire Project – The project involved audit and education for primary care clinicians as well as education for secondary care specialist nurses. After one year, it showed an increase in the prescribing of anticoagulants and an expected reduction of 70 AF related strokes, which is a reduction of 14% from baseline.

The full external evaluation can now be read at: http://europe.icf.com/BHF/IC_Evaluation_Final%20Report.pdf

EDUCATION AND UPSKILLING

Key aspects of successful AF management programmes are the specialist skills and knowledge of healthcare professionals implementing them.

It is essential that healthcare professionals are adequately trained and have appropriate skills and knowledge with regular updates. Since the development of specialist nurse-led AF services in the UK, a range of service models have been adopted, with nurses' levels of autonomy and clinical expertise varying greatly.

AF Education for healthcare professionals is available. Examples of these include:

- Arrhythmia Management Module - Teesside University
http://www.tees.ac.uk/parttime_courses/Health_Social_Care/University_Certificate_in_Postgraduate_Professional_Development_Arrhythmia_Management.cfm
- Education for Health
<https://www.educationforhealth.org/resources/atrial-fibrillation-3-management/>
- Up-skilling programme in Newham
<http://www.rcgp.org.uk/professional-development/rcgp-educational-accreditation-for-education-providers.aspx>
- Atrial Fibrillation and Stroke Prevention - Birmingham University
<http://www.birmingham.ac.uk/postgraduate/courses/taught/med/pg-modules/atrial-fibrillation-management.aspx>
- The Heart Education Awareness Resource and Training through E-learning (HEARTE) project
<http://heartelearning.org/>
- AF education, tools and resources for doctors (developed by the stroke association and hosted by doctors.net.uk)
<https://www.doctors.net.uk/>
- BMJ Workbooks - AF
<http://www.rcgp.org.uk/professional-development/rcgp-educational-accreditation-for-education-providers.aspx>
- Accredited learning for healthcare practitioners - AF and Stroke
<http://heliconhealth.co.uk/heliconheart/cpd/>

Patient Education

It is essential that healthcare professionals offer individuals with AF support and education, appropriate to their needs in order to promote their ability to make informed decisions and manage their condition. The NICE (CG 180)⁷ recommend that individuals with AF are supported to understand cause, effects and possible complications of AF. Improved understanding of these issues is pivotal in motivating individuals to engage with evidenced based treatment, particularly for those who are asymptomatic with AF (one third or 25-30%).¹⁰

Patient education resources are available. Examples of these include:

British Heart Foundation
<https://www.bhf.org.uk/>

Care AF
<http://www.careaf.org/>

AF Association
<http://www.atrialfibrillation.org.uk/>

Stroke Association
<https://www.stroke.org.uk/atrial-fibrillation-af>

NICE - Patient decision aid about anticoagulation risks v benefits

<http://www.nice.org.uk/guidance/cg180/resources/cg180-atrial-fibrillation-update-patient-decision-aid>

EHRA Non Vitamin K Monitoring Card
http://www.escardio.org/static_file/Escardio/Subspecialty/EHRA/publications/English-EHRA-NOAC-card-A5.pdf

World of Anti-coagulation
<http://worldofanticoagulation.org/atrial-fibrillation>

Anticoagulation management and stroke prevention: a patient's guide
<http://heliconhealth.co.uk/heliconheart/cpd/>

Supporting Healthcare professional to provide patient education

As above plus:

AF Association
<http://www.atrialfibrillation.org.uk/>

Heart of AF
<http://www.heartofaf.org/>

NICE - Patient decision aid about anticoagulation risks v benefits
<http://www.nice.org.uk/guidance/cg180/resources/cg180-atrial-fibrillation-update-patient-decision-aid>

European Society of Cardiology - Non Vitamin K Oral Anticoagulant resources
<http://www.escardio.org/Guidelines-&Education/Clinical-Practice-Guidelines/Atrial-Fibrillation-Management-of-2010-and-Focused-Update-2012>

Common Questions and Answers on the Practical Use of Oral Anticoagulants in AF
<http://www.swmit.nhs.uk/pdf+/FAQ/swmitrdcOACcomparisonMar15-Version%201.2.pdf>

The All-Party Parliamentary Group on Atrial Fibrillation
<http://www.atrialfibrillation.org.uk/parliamentary-focus/westminster.html>

Case study

Cardiovascular Disease Clinical Development Coordinator role

In 2012 the BHF introduced and developed the Practice Development Coordinator (PDC) role, now called the Cardiovascular Disease Clinical Development Coordinator. The role, delivered by specialist CVD nurses, provides education and professional development support to HCPs working in the community to enable the best quality care and services for people at risk of or with a diagnosis of CVD. It also addresses health inequalities by targeting effort in those areas where CVD is most prevalent, and where gaps in care and management exist. Education on atrial fibrillation management is a common request from Practice nurses and GPs.

An external evaluation of the role undertaken in 2014 to assess the performance and impact of the PDC programme of work demonstrated a number of high value impacts.²⁵

Top 5 facts

How and why we could do better

1. Case identification of AF by pulse checks in those aged 65 years and older is effective; it is a great way of identifying AF before it presents in the form of morbidity or mortality.
2. The majority of individuals with AF benefit from anticoagulation. The benefit/risk of treatment should be calculated, using the CHA₂DS₂-VASc and HAS-BLED tools and be discussed with those being considered for treatment.
3. Evidence is clear that aspirin is never adequate stroke prevention therapy, by itself, for those with AF and at significant risk of stroke.
4. People with AF should have optimal heart rate control and be symptom free. Those who remain symptomatic despite optimal heart rate control should be referred for specialist management.
5. People with AF should receive information on their condition, be actively involved in all decisions around their care and be supported to self-manage their long term condition.

FIT WITH NHS
POLICY AND
CONTEXT

England

Targeting AF and managing the stroke risk with anti-coagulation is considered one of the top five most important interventions to reduce life expectancy inequalities across England.²⁶

- Five Year Forward View
<http://www.england.nhs.uk/wp-content/uploads/2014/10/5yfv-web.pdf>
- Improving Cardiovascular Disease Outcomes Strategy
<https://www.gov.uk/government/publications/improving-cardiovascular-disease-outcomes-strategy>

Scotland

- Heart Disease Improvement Plan
<http://www.gov.scot/Resource/0045/00458289.pdf>

Wales

- Together for Health - a heart disease delivery plan
<http://gov.wales/docs/dhss/publications/130503hearten.pdf>

Northern Ireland

- Putting a health inequalities focus on the Northern Ireland cardiovascular disease framework
<http://www.publichealth.hscni.net/sites/default/files/Technical%20report%20final.pdf>
- Transforming your care 2011
<http://www.dhsspsni.gov.uk/transforming-your-care-review-of-hsc-ni-final-report.pdf>
- NI Stroke Strategy
<http://www.dhsspsni.gov.uk/recommendations-stroke-services-in-ni.pdf>
- CVD Service Framework (Standard 14)
<http://www.dhsspsni.gov.uk/cvsf - full document - april 2014 - march 2017.pdf>

RELATED
GUIDANCE
AND
STANDARDS

- National Clinical Guideline Centre. Atrial Fibrillation: the management of atrial fibrillation. Clinical guideline. Methods, evidence and recommendations. June 2014. Commissioned by the National Institute for Health and Care Excellence (full version)
- NICE quality standard [QS93] Published date: July 2015 - <https://www.nice.org.uk/guidance/qs93>
- SIGN. 129. Prevention of stroke in patients with atrial fibrillation. 2014
- SIGN Guideline 94. 2007. Arrhythmias in coronary artery disease (currently under review)
- Cardiovascular Outcomes Strategy 2013 (England) NHS England Outcomes Framework Domains 2,3,4 and 5 2013/14
- NHS Quality Premium for Clinical Commissioning Groups in England 2014/15
- Department of Health: End of Life Care Strategy 2010
- Quality, Improvement, Productivity and Prevention (QIPP) 2013
- Together for Health – A Heart Disease Delivery Plan, Wales, 2011-2016
- Prudent Healthcare Plan, Wales 2015
- Heart Disease Improvement Plan 2014, Scotland
- Service Framework for Cardiovascular Health and Wellbeing, 2014-2017, Northern Ireland

PUBLICATIONS
/ABSTRACTS

- ✓ AF Association/All-party parliamentary group on atrial fibrillation. Healthcare Pioneers. Showcasing best practice in AF. <http://www.atrialfibrillation.org.uk/files/file/Healthcare%20Pioneers%20-%20Showcasing%20Best%20Practice%20in%20AF.pdf>
- ✓ Elliott. K (2014) The nurse's role in the management and treatment of atrial fibrillation" British Journal of Cardiac Nursing December 2014 Vol 9 No 12
- ✓ Holding S (2011) Taking an effective clinical history in a patient presenting with new-onset atrial fibrillation. British Journal of Cardiac Nursing 6(9): 426–32
- ✓ Quality and Productivity NHS (2009) Atrial fibrillation – detection and optimal therapy in primary care. Provided by: NHS Stroke Improvement Programme. 27 Nov 2009. This document can be found online at: <http://www.nice.org.uk/savingsandproductivityandlocalpracticeresource?ci=http%3A%2F%2Farms.evidence.nhs.uk%2Fresources%2FQIPP%2F29433%3Fniceorg%3Dtrue>

TOOLS TO
SUPPORT
IMPLEMENT-
ATION

The BHF Best Practice Toolkit includes, www.bhf.org.uk/businesscasetoolkit includes a business toolkit, protocols, reports, evaluations and evidence based service case studies to support the setting up of new AF services in a local context.

The BHF supports HCPs with funding and resources for CVD specific training and development through the BHF Alliance membership programme <https://www.bhf.org.uk/alliance/>

The AF Commissioning Toolkit

Provide commissioners with the tools required in order to provide an effective service for people with Atrial Fibrillation (AF). An effective service is defined as a service that improves quality outcomes for patients with AF and reduces health and social care costs by reducing patients' risk of stroke through service improvements. This will improve detection, diagnosis and optimal therapy and management. The resource can be found here:

<http://www.gmlscscn.nhs.uk/index.php/networks/cardiovascular/stroke/af-commissioning-toolkit>

CONTACTS

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References

1. Health and Social Care Information Centre. (2014). Quality and Outcomes Framework (QOF) - 2013-14. Available: <http://www.hscic.gov.uk/catalogue/PUB15751> Last accessed 09 January 2015
2. ISD Scotland. (2014). Quality and Outcomes Framework. Available: <http://www.isdscotland.org/Health-Topics/General-Practice/Quality-And-Outcomes-Framework/> Last accessed 09 January 2015
3. Department of Health, Social Services and Public Safety. (2014). QOF Achievement Data. Available: <http://www.dhsspsni.gov.uk/index/statistics/qof/qof-achievement.htm> Last accessed 09 January 2015
4. StatsWales. (2014). Quality and Outcomes Framework (QOF) by local health board and disease registers. Available: <https://statswales.wales.gov.uk/Catalogue/Health-and-Social-Care/NHS-Primary-and-Community-Activity/GMS-Contract/PatientsOnQualityAndOutcomesFramework-by-LocalHealthBoard-DiseaseRegister> Last accessed 09 January 2015
5. Camm AJ, Kirchhof P, Lip GY et al (2010) Guidelines for the management of atrial fibrillation. The Task Force for the Management of Atrial Fibrillation of the European Society of Cardiology. Eur Heart J 31(19): 2369–429.
6. NICE (2014) AF Guidelines. NICE guidelines [CG180] Published date: June 2014 (key recommendations)
7. National Clinical Guideline Centre. Atrial Fibrillation: the management of atrial fibrillation. Clinical guideline. Methods, evidence and recommendations. June 2014. Commissioned by the National Institute for Health and Care Excellence (full version)
8. Marini C, De Santis F, Sacco S et al. Contribution of atrial fibrillation to incidence and outcome of ischemic stroke: results from a population-based study. Stroke 2005;36:1115–19
9. Lamassa M, Di Carlo A, Pracucci G et al. Characteristics, outcome, and care of stroke associated with atrial fibrillation in Europe: data from a multicentre multinational hospital-based registry (The European Community Stroke Project). Stroke 2001;32:392–8
10. O'Riordan M (2014) No Benefit and More Bleeds with Antiplatelet for AF Patients with Stable CAD. www.medscape.com/viewarticle/820044 (accessed 19 November 2014)
11. Kassianos G, Arden C, Hogan S, et al. Current management of atrial fibrillation: an observational study in NHS primary care. BMJ Open 2013;3:e003004. doi:10.1136/bmjopen-2013-003004. Downloaded 4.6.2015
12. Atrial fibrillation – detection and optimal therapy in primary care. Provided by: NHS Stroke Improvement Programme. This document can be found online at: www.evidence.nhs.uk/qualityandproductivity Downloaded 4.6.2015
13. Lloyd-Jones DM, et al Lloyd-Jones DM1, Wang TJ, Leip EP, Larson MG, Levy D, Vasan RS, D'Agostino RB, Massaro JM, Beiser A, Wolf PA, Benjamin EJ. Lifetime risk for development of atrial fibrillation: the Framingham Heart Study. Circulation 2004;110:1042-6.
14. NHSIQ. Costs and Benefits of Antithrombotic Therapy in Atrial Fibrillation in England: An Economic Analysis based on GRASP-AF. http://www.nhsiq.nhs.uk/media/2566750/af_economic_analysis_final.pdf Last accessed 9.7.2015
15. The office of Health Economics. Estimating the direct costs of atrial fibrillation to the NHS in the constituent countries of the UK and at SHA level in England, 2008. London: The office of Health Economics; 2009.
16. AF Association and Anticoagulation Europe (2012) AF Report 2012. Copyright AFA and ACE 2011. <http://www.preventaf-strokecrisis.org/>
17. Saka. O., McGuire. A. and Wolfe. C. (2009) Cost of stroke in the United Kingdom. Age and Ageing 2009; 38: 27–32 C. 2009. Published by Oxford University Press on behalf of the British Geriatrics Society. doi: 10.1093/ageing/afn281
18. Quality & Outcomes Framework prevalence data 2013/14 – BHF analysis of HSCIC, ISD Scotland, StatsWales & NISRA data (2014).
19. Atrial fibrillation prevalence estimates in England: Application of recent population estimates of AF in Sweden. 2015. Public Health England.
20. Kannel WB, Wolf PA, Benjamin EJ et al. Prevalence, incidence, prognosis, and predisposing conditions for atrial fibrillation: population-based estimates. Am J Cardiol 1998; 82:2N–9N
21. Anter, E., Jessup. M. and Callans. D. (2009) Atrial Fibrillation and Heart Failure. Treatment considerations for a Dual Epidemic. Circulation. 209;119:2516-2525.
22. Arboix A, Alió J (2010) Cardioembolic stroke: clinical features, specific cardiac disorders and prognosis. Curr Cardiol Rev 6(3): 150–61. doi: 10.2174/157340310791658730
23. Hobbs, F.D.R., Fitzmaurice, D.A., Mant, J., Murray, E., Jowett, S., Bryan, S., Raftery, J., Davies, M. and Lip, G. (2005) A randomised controlled trial and cost-effectiveness study of systematic screening (targeted and total population screening) versus routine practice for the detection of atrial fibrillation in people aged 65 and over. The SAFE study. Health Technology Assessment, 9, (40), [93pp].
24. Camm AJ, Lip GY, De Caterina R et al (2012) 2012 focused update of the ESC Guidelines for the management of atrial fibrillation: an update of the 2010 ESC Guidelines for the management of atrial fibrillation. Developed with the special contribution of the European Heart Rhythm Association. Eur Heart J 33(21): 2719–47. doi: 10.1093/eurheartj/ehs253
25. Cloud Chamber. Evaluation of the Practice Development Coordinator Programme for the British Heart Foundation. Final Report. November 2014
26. Lines. C. Public Health England (2014) Atrial Fibrillation: Burden of disease and the impact of an effective prevention programme. Crown. Public Health England.

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