Health Inequalities
National Support Team

Developing a Systematic Approach to the Identification and Management of Atrial Fibrillation

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Description	This guide was developed by the Health Inequalities National Support Teams (HINST) with 70 local authorities covering populations in England. Local areas could use this approach when analysing whether a population level improvements could be achieved from a set of best-practice and established interventions. This is offered as useful resource for commissioners: use is NOT mandatory. It is a guide to developing a systematic approach to the identifcation and management of atrial fibrillation in a local area.
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For Recipient's Use	

Contents

Introduction to Public Health National Support Teams

National Support Teams (NSTs) were established by the Department of Health from 2006 to support local areas – including local authorities (LAs), primary care trusts (PCTs) and their partners – to tackle complex public health issues more effectively, using the best available evidence. By undertaking intensive, 'diagnostic' visits to local areas, spending time with key leaders (commissioners and providers) including clinicians and frontline staff, the ten NSTs provided intelligence, support and challenge to local areas to assist in their achieving better public health outcomes. The programme finished in March 2011.

The ten subject specific teams (Sexual Health, Tobacco Control, Health Inequalities, Teenage Pregnancy, Childhood Obesity, Alcohol Harm Reduction, Infant Mortality, Response to Sexual Violence, Vaccination and Immunisation and Children and Young People's Emotional Wellbeing and Mental Health) were commissioned and established with a focus on improving health and reducing health inequalities.

The ten teams undertook more than 450 visits to local partnerships during the course of the programme and their findings and successes have been documented in Knowledge Management and Evaluation reports .Each team also produced reports setting out and consolidating the learning from their work, to be found on the HINST website at www.dh.gov.uk/HINST to enable local areas to continue using the expertise and lessons learnt from the NST model.

The NST process involved a desk review of key documentation and data-based intelligence, and interviews with key informants, often in combination with a series of workshops or focus groups. Collation and analysis of findings was immediate, and the findings, including strengths and recommendations, were fed back straight away and on site to the key local players and leadership. Recommendations were accompanied by offers of support, either at the time of reporting, or as part of follow-up activity.

The Department of Health is publishing a number of reports that distil the learning from the programme and exemplify the methodology employed.

Health Inequalities National Support Team (HINST)

The Health Inequalities National Support Team (HINST) has worked in the ways described above with the 70 local authorities covering populations in England with the highest levels of deprivation and poorest health. An area of focus was on how areas could reduce inequalities in life expectancy and all age all cause mortality (AAACM) within a short timescale (while also working on interventions which would have an impact within medium and longer timescales).

Through this work HINST was able to capitalise on its unique experience of having worked in some depth with all these areas, identifying common barriers to progress and gaps in capability and capacity, but also recognising a wide array of good practice. Using this good practice a series of interactive masterclasses were established, focussing on areas of work found difficult by many, but where particular programmes were achieving success. The masterclasses allowed detailed and informal dialogue with those who had been practically involved in successful delivery

Figure 1 – Commissioning for Best Population Level Outcomes
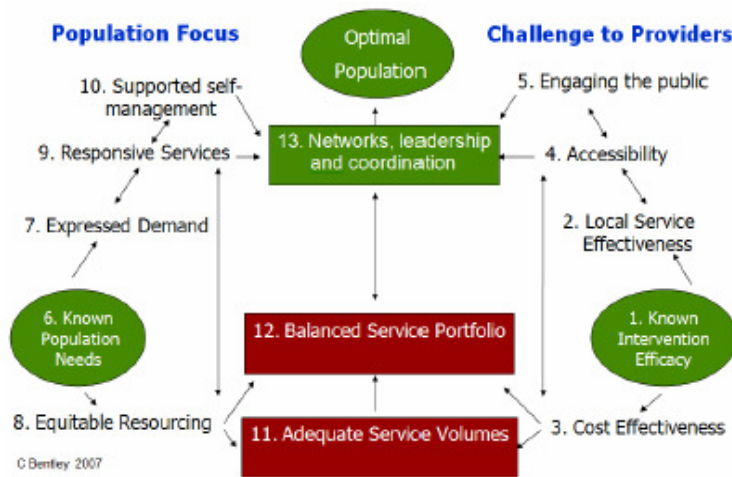
The Health Inequalities National Support Team (HINST)) chose to prioritise this topic as one of its Masterclasses for the following reasons:

- A significant proportion of the disadvantaged elements of populations, are failing to take advantage of the benefits that services can offer. The reasons for this are varied and complex, and strategies for addressing the problem need to be based on local intelligence and insight, and they also need to be systematic.
- Specifically, within the 'Christmas tree' diagnostic (Figure 1) it addresses the following components:
  – accessibility (4)
  – engaging the public (5)
  – known population needs (6)
  – expressed demand (7)
  – responsive services (9).
- Action in this area of work will contribute to the Quality and Productivity Challenge by engaging people at high risk of, or with, early established disease, to enable them to access effective preventive strategies. This can help prevent or at least defer major (costly) impacts, e.g. strokes

This publication is one of a series developed by the Health Inequalities National Support Team (HINST), in its work with the 70 local authorities covering populations in England with the highest levels disadvantage and poorest health. This document is a summary of local views on good practice. The suggested approaches are not mandatory, and reflect learnings from a snapshot in time. Where there is clear established evidence to support interventions, this has been signposted in the footnote. This is offered as useful resource for commissioners: use is NOT mandatory.

Atrial fibrillation
Cardiac arrhythmia affects more than 600,000 people in England and is consistently in the top ten reasons for hospital admission, using up significant A&E time and bed

days. AF is the most common sustained cardiac rhythm disorder, affecting around 1.2% of the population (rising to 4% in the over 65s) and absorbs almost 1% of the entire NHS budget. Experience from the HINST visits to Spearhead areas indicated that AF services were poor in many areas with little strategic development and a lack of knowledge of relevant national guidance.

The attached report – *Developing a Systematic Approach to the Identification and Management of Atrial Fibrillation* – provides findings from the HINST masterclass that looked at systematic approaches to the identification and management of atrial fibrillation.

Background

Epidemiological studies consistently point to AF being the cause of between 15% and 20% of all thrombo-embolic strokes. AF is associated with some of the worst strokes in terms of subsequent morbidity and mortality. The overall incidence of stroke is about 5% per year in people with AF so it is a significant cause of mortality in England.

AF is a predisposing factor to stroke and with the increasingly elderly population in the developed world, as well as improvements in the management of myocardial infarction and heart failure, the prevalence of AF is increasing and becoming a major public health issue.[1]

This masterclass, developed in partnership with the National Heart and Stroke Improvement Programmes, looked at systematic approaches to the identification and management of AF. Experience from the HINST visits to Spearhead areas indicated that stroke prevention services were poor in many of the areas with little strategic development and a lack of knowledge of relevant national guidance[2]

HINST does not profess any particular expertise in how to manage AF services, but it does have experience of the actions needed to achieve a significant improvement in morbidity and mortality rates at population level. The key to this is not only to provide good services, but to ensure that changes and improvements are applied systematically and appropriate linkages made between personal and community health. The challenge is how to bring all areas up to the standard of the best.

The 'Masters' who participated in the masterclass identified the key elements to

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[1] Lip. Prof Gregory YH (MD), Tse. Prof Hung-Fat (MD) 'Management of atrial fibrillation'. *The Lancet.* 370:9587. pp604-618. 18 August 2007
[2].NHS Improvement embarked on a National programme of work around stroke prevention in AF in 2007. These national priority projects were established in response to the National Framework for Coronary Heart Disease published in March 2007 The early learning from the 18 individual projects was first published in May 2008 as the document 'Atrial Fibrillation in Primary Care: National Priority Project'. Action was sought from key stakeholders to bring together a consensus approach across England to address the key factors in influencing, educating and encouraging change in the identification and management of patients with AF. This culminated in the publication in June 2009 of the document 'Commissioning for Stroke Prevention in Primary Care-the role of Atrial Fibrillation'. Final outcomes, learning and resources from the projects 'Atrial Fibrillation:making an impact on stroke prevention' were published in September 2009

developing a systematic approach to the identification and management of AF, the challenges and barriers encountered and the levers that can be used to overcome these. The key points from their presentations are outlined below. For fuller details, please see the Masters' presentations at www.dh.gov.uk/hinst.

The challenge for atrial fibrillation in primary care and stroke prevention

AF is very common. In fact, between 1-1.3 % of the UK population are known to have AF, which equates to approximately 600,000 patients in England. AF can be an unpleasant condition, associated with a range of serious illnesses, including an increased risk of stroke. It is under-detected and under-treated.

Stroke figures from the Department of Health in 2007[3] showed that:

- In England annually,110,000 strokes occur in people with AF
- Of these approx 12,500 are attributable to AF, with
  - 4,300 deaths in hospital
  - 3,200 discharges to residential care
  - 8,500 deaths within the first year

The Department of Health's estimate[2] of the cost of strokes attributable to AF are:

- Total cost - £148 million in first year after the stroke has occurred
- Hospital stay cost - £103 million
- Post-discharge care - £45 million
- Saka et al[3] estimate the total of direct care costs of stroke management in UK as £4.4 billion per year. National Audit Office report 2010[*] estimates direct care costs of all strokes as at least £3billion with a wider economic cost of about £8bn
- If 12,500 strokes are attributable to AF, this equates to a cost of approx £550 million per annum for the total annual cost of strokes resulting from AF

The number of people with AF is expected to increase in the next generation mainly due to an ageing population. Anecdotal evidence suggests a growing number of cases among younger people and prevalence is also higher amongst black and ethnic minority communities

Food for thought[4]

- 150,000 strokes per year in the UK, which is:
  - 410 per day
  - 17 per hour
- Within the next four hours, 10 patients with AF will suffer a stroke, which will include:
  - 8 who would have been known to be high risk of stroke

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[2].AF Cost benefit Analysis, Marion kerr, 2008, Department of Health, available on the Stroke Improvement Website
3 Cost of stroke in the United Kingdom, Ömer Saka, Alistair McGuire and Charles Wolfe; Age Ageing (2009) 38 (1): 27-32
* Progress in Improving Stroke Care, National Audit Office, HC 291 2009 - 2010
4 A population based cohort study; Scottish Stroke Care Audit 2005/2006

- 6 who should have been on warfarin
- 3 who will go home
- 5 who will end up in residential care
- 2 who will die

Identification of AF through screening

AF is often asymptomatic and is frequently unrecognised and untreated. The SAFE study from the University of Birmingham, looking at the most cost effective method to identify AF in a community population aged 65 years and over, demonstrated that population screening provided no additional benefit and opportunistic screening provided a more cost-effective approach. The 'extra work' to screen opportunistically is generally considered minimal. However, the SAFE study does not answer the question as to whether a national AF screening programme should be recommended. The current UK National Screening Committee (UK NSC) position is that screening should not be offered. The policy is currently being reviewed as part of the UK NSC's regular review cycle of all policies and is estimated to be completed by March 2012.

While taking a pulse is not one of the routine checks in the NHS Health Check Programme the addition of pulse checks is suggested as an option which individual areas might wish to endorse locally, particularly for those aged 65 and over . Flu clinics also offer a good opportunity for opportunistic screening. . Additional training requirements are minimal but it is important to ensure that pulses are taken for long enough to obtain a true reading (at least 20 seconds). Local campaigns along the lines of "Know your pulse[5]" can help to raise awareness and can normalise pulse taking for patients.

Lack of in-house ECG facilities can be a barrier to screening for AF. The need for onward referral of people newly diagnosed with AF depends solely on the available expertise within primary care. Only a small group of people with AF require an echocardiogram[6] to assess their need for anticoagulation.

Case Studies
- **Colchester**: Colchester PBC Group used attendance for 'flu vaccination as a means of detecting AF. Prevalence of AF in this geographical area was already above the national average, due in part to the age demographics. Over 6 weeks 34,000 patients were screened with 3,154 (9.2%) found to have an irregular pulse and 189 (0.55%) with AF. About half of these were assessed as being at high risk of stroke and 77 were subsequently treated with warfarin. Cost benefit analysis suggests that the investment in this treatment was at least cost neutral and more likely to show cost savings.

- **Bedfordshire and Hertfordshire**: Bedfordshire and Hertfordshire Heart and Stroke Network used opportunistic pulse screening at flu clinics. In 2007 one practice was targeted for pulse screening patients during flu clinics. Because of

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5: http://pulse.knowyourpulse.org/
6 Guidance as to who needs an echocardiogram is available from the NICE AF guidelines: http://guidance.nice.org.uk/CG36

the success of this approach, in 2008 a local enhanced service (LES) was developed to encourage wider uptake. One PCT implemented this during the flu season of 2008. Twenty-three practices signed up to the LES and during October, 6,000 patients were screened and 122 new patients were added to the AF register. The network is now working with the three other PCTs in the network through local implementation groups and practice based commissioning groups

- **North East Essex:** During the autumn of 2008 GP practices in North East Essex developed a scheme to screen all over-65s for AF when they attended for flu vaccination. This scheme was highly successful, screening more than 30,000 patients in six weeks. Roughly 361 patients were newly diagnosed with AF and were offered advice and treatment to reduce the risk of stroke. It is estimated that this scheme will save 18 people from strokes in the next two years alone.

- **North Somerset:** Opportunistic screening was undertaken in nine practices in North Somerset PCT, during chronic disease clinics, on GP visits or practice nurse visits. A code was entered on to the computer system to capture this activity. Any suspected AF cases went on to have an ECG performed. For all confirmed cases, a proforma was completed outlining their risk score, management and any other relevant details. All new cases were validated by the lead clinician to ensure that they were truly opportunistic. An incentive payment was made for each new diagnosis. Over a year period 7,089 pulses were taken representing 45% of the over-65 population in the nine participating practices. Sixty-six new diagnoses were made, which equates to one new diagnosis for every 107 pulses taken.

Further case studies and access to resources and other materials can be accessed on the NHS Improvement website at www.improvement.nhs.uk/afprojectsummaries.

Management of atrial fibrillation

While anti-platelet therapy (i.e. aspirin), is still widely regarded as the treatment of choice in preventing strokes in patients with AF, only the 'Stroke Prevention in Atrial Fibrillation Trial (SPAF 1)' study[7], undertaken in 1991, supported a beneficial effect of aspirin, but this outcome had not been repeated by subsequent studies. The more recent ACTIVE A[8] and ACTIVE W[9] studies looked at single and combination therapies and the risk of stroke in relation to time in therapeutic range. The outcome from this research was that aspirin had little role to play in preventing strokes.

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[7] Stroke Prevention in Atrial Fibrillation Study. Lancet. 1991 Aug;84(2):527-39.

[8] ACTIVE A: Clopidogrel, aspirin prevented stroke in high-risk patients with AF. ACTIVE Writing Group of the ACTIVE Investigators, The New England Journal of Medicine 2009;360:2066-78

[9] ACTIVE W: Clopidogrel plus aspirin versus oral anticoagulation for atrial fibrillation in the Atrial fibrillation. ACTIVE Writing Group of the ACTIVE Investigators.Lancet 2006;367:1903-12.

Treatment with warfarin is clinically and cost effective. Warfarin :

- reduces the relative risk of a stroke by approx 70 %. No other cardiovascular treatment gives a similar level of risk reduction.
- provides absolute risk reduction:
  - primary stroke   2.7 %
  - secondary stroke   8.4 %

The number needed to treat for 1 year to prevent 1 stroke are:
  - primary stroke   37
  - secondary stroke   12
  - overall   25 (approx)
  -

Cost analysis had shown that, even using conservative estimates, warfarin is likely to pay for itself in the first year of prescribing compared with the cost to the NHS of caring for a person who has had a stroke. More work is required to refine these figures but longer-term savings are thought to be substantial.

There is reluctance to use anti-coagulants. However, the Birmingham AF Treatment of the Aged study[10] (mean age 81.5 years) found that warfarin could be given safely to all people with AF. It did not increase haemorrhages in comparison with aspirin and indeed there is some evidence to suggests it causes fewer bleeds.

The stroke risk and choice of anti-thrombotic intervention of AF patients are calculated using the CHADS2 score (see Appendix 1). Benefits of warfarin outweigh the risk when the CHADS2 score is equal to or greater than 2. Therefore, moderate and high risk patients should be anti-coagulated unless contraindicated. This approach is supported by a range of recent guidance, including the NICE clinical guideline on atrial fibrillation.

Compliance with anti-coagulation can be an issue for older people, particularly those living alone or with minimal support or in the early stages of dementia. (AF is an independent risk factor for dementia). Older people are more likely to accept advice from their GP than from other staff. GPs therefore have a role in supporting practice nurses and others who are working with people with AF.. There can be issues for older people who are prescribed warfarin in making frequent trips to the practice for tests to ensure that their dosage is appropriate.

A new range of anticoagulants, e.g. Dabigatran, is being developed that does not require such regular monitoring. NICE is expected to consider them in due course. Although likely to be at least as clinically effective as warfarin, the new drugs are expected to be more costly. In people with good warfarin control, convenience would be the main advantage offered by these drugs . However, a benefit of the need for regular blood tests for patients taking warfarin allows checks to be made on compliance as well as clinical effectiveness.

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[10] Mant J, Hobbs FDR, Fletcher K, et al on behalf of the BAFTA investigators, the Midland Research Practices Network (MidReC). Warfarin versus aspirin for stroke prevention in an elderly community population with atrial fibrillation (the Birmingham Atrial Fibrillation Treatment of Aged Study, BAFTA): a randomised controlled trial. Lancet 2007; 370: 493-503.

The QOF includes an indicator measuring the percentage of patients with atrial fibrillation treated with anti-coagulant drug therapy or an anti-platelet therapy. The guidance makes it clear that stroke risk can be substantially reduced by warfarin and less so by aspirin and that warfarin treatment is not as unsafe as previously thought. However the indicator itself cannot distinguish between levels of warfarin and aspirin use. Discussions in the masterclass highlighted variation in the rates paid to GPs who were willing to prescribe warfarin. This was probably due to local agreements, but might warrant further investigation to ensure that levels of payment do not act against optimal treatment. (The AF indicator in the QOF has been recommended for replacement: please see the following from the NICE menu of indicators[11]:
The percentage of patients with Atrial Fibrillation in whom stroke risk has been assessed using the CHADS2 risk stratification scoring system in the preceding 15 months NICE menu In those patients with Atrial Fibrillation in whom there is a record of a CHADS2 score of >1, the percentage of patients who are receiving anticoagulants).

Under-use of anticoagulation in AF

Approximately over 40% of people who could benefit from warfarin are not receiving it, amounting to over 166,000 people nationally. Diagnosing and treating them appropriately would prevent over 6000 strokes each year and save over 4000 - 4500 lives. This under-use of warfarin is a combination of under recognition and diagnosis of AF and reluctance to prescribe warfarin when the diagnosis of AF has been confirmed. If the use of warfarin was extended to all patients who could benefit it is estimated that over 7,100 strokes annually could be prevented. These calculations do, however, make multiple assumptions, not least that there may be valid contraindications to warfarin in a percentage of patients. Nevertheless, it is clear that extending the use of anticoagulants could confer substantial gains in stroke prevention.

A study[12] undertaken at St Mary's Hospital, Imperial College NHS Trust, London has shown that anti-coagulation was underused and sub-optimal in high risk patients with AF who presented with a stroke. A retrospective analysis was undertaken of five year stroke data from St Mary's Hospital Stroke Register (2003-2008). It found that in that period there had been 1297 ischaemic strokes, of which 15% (187/1297) were known to have AF or paroxysmal atrial fibrillation (PAF). Of those, 156 were high risk in line with NICE guidelines and 131 had no documented contraindication to warfarin. Warfarin treated patients (n=35/131), sub-therapeutic INR (<2.0): 69% (n=24/35). Overall only 8% (11/131) of eligible patients had therapeutic INR at time of stroke

An audit[13] undertaken in Leeds used READ coding queries to apply a CHADS2 score to AF patients in participating practices and to identify what thromboprophylaxis was used. In a combined practice population of 151,000, it was found that out of 2,119 patients reviewed with AF, 50% were at high risk of stroke and 46% of them were not
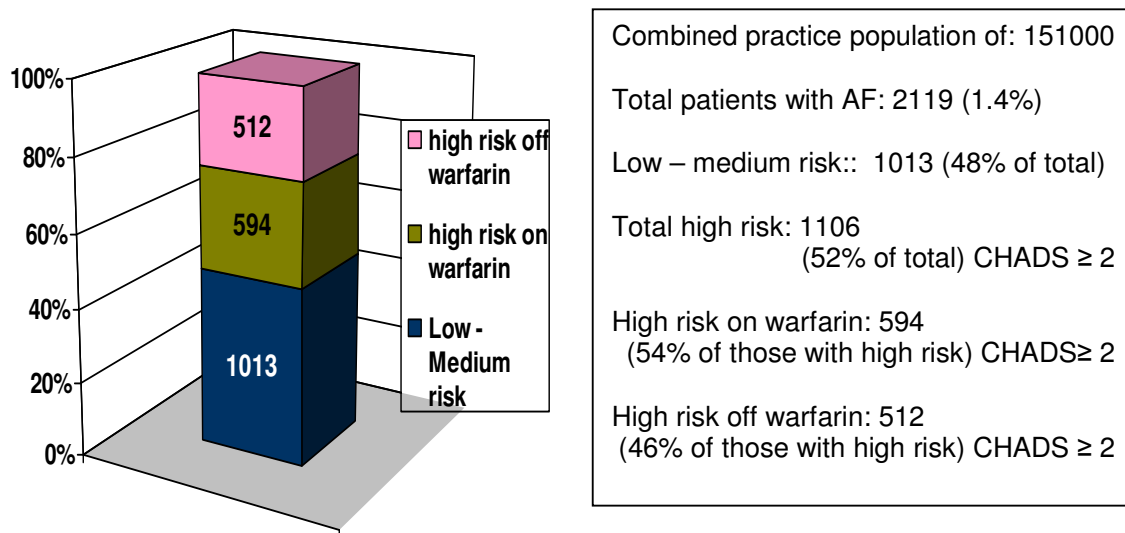
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[11] http://www.nice.org.uk/aboutnice/qof/indicators_detail.jsp?summary=13519

[12] Anticoagulation is underused and suboptimal in high risk patients with atrial fibrillation who present with a stroke   5 year data, Dr Maneesh Bhargava Dr Arindam Kar Dr Richard Perry Dr Diane Ames St Mary's Hospital Imperial College NHS Trust

[13] Leeds Stroke prevention in AF Audit: NHS Improvement 2009 – Commissioning for Stroke Prevention in Primary Care – The role of Atrial Fibrillation

on warfarin. (Most of these patients were on aspirin). A switch to warfarin therapy for these patients, where possible, would prevent many strokes each year. This is illustrated in Fig 1 over the page

Figure 1 Results of Audit in Leeds

Combined practice population of: 151000

Total patients with AF: 2119 (1.4%)

Low – medium risk:: 1013 (48% of total)

Total high risk: 1106
                    (52% of total) CHADS ≥ 2

High risk on warfarin: 594
  (54% of those with high risk) CHADS≥ 2

High risk off warfarin: 512
 (46% of those with high risk) CHADS ≥ 2

Education of clinicians on the appropriate use of anti-coagulants is a key issue and this applies to both primary and secondary care. The main barriers to anti-coagulation had been thought to lie in primary care, but there is growing evidence that secondary care practitioners (such as elderly care physicians) are also reluctant to prescribe warfarin[14].

To achieve real and sustained change, GPs will need to be convinced of the effectiveness of warfarin and that it is safe and should be used. Many would have been taught the opposite and overcoming this perception requires clear evidence, local champions and a constant programme of education.

GRASP-AF

Guidance on Risk Assessment and Stroke Prevention for Atrial Fibrillation (GRASP-AF) is a query and risk stratification tool available for use with all GP clinical systems

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[14] J Thrombolysis. 2006 Jun;21(3):257-65. What are the barriers to warfarin use in atrial fibrillation?: Ingelgård A, Hollowell J, Reddy P, Gold K, Tran K, Fitzmaurice D.

in England. It has been developed collaboratively and piloted by the West Yorkshire Cardiovascular Network, the Leeds Arrhythmia team and PRIMIS+[15] as part of the 'AF in primary care national priority projects' and is made available nationally through NHS Improvement[16].

At the touch of a button the GRASP-AF tool will apply a stroke risk stratification score (CHADS2 score)[15a] to AF patients in any practice. It will identify those patients with AF at a high risk of stroke and not on warfarin who would benefit from review to assess anticoagulation. The tool does not assess contraindications to warfarin.

The decision whether to prescribe warfarin remains a clinical one. The tool takes just a few minutes to run and can be used on any GP IT system. It can also help to clean up AF registers.

A suite of tools (CHART[17] and CHART Online) have been developed to support data collection and analysis for GRASP-AF. These enable the identification of patients with AF, calculation of their risk score, and shows whether they are being anti-coagulated. CHART Online allows (anonymised) comparative data to be viewed across practices in a particular area. This comparative view gives a powerful message to practices and offers PCTs an opening to discuss optimal management of AF patients with clinicians. The dashboard for CHART GRASP-AF (see Appendix 2) also predicts the number of strokes within these patients if no action is taken.

Key factors to be remembered when using GRASP-AF include the need for clinical champions, education for both clinicians and patients, and dedicated project support particularly in relation to liaison with practices. It is also important locally to determine who should have access to what level of information. It is essential that GPs themselves have sight of the analysis for their practice . Work is ongoing to expand the analysis to predict the impact of treating all appropriate AF patients optimally with warfarin as against their current treatment regime.

GRASP-AF – The York experience
Experience in York has supported the "invest to save" approach as the way forward.

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[15] PRIMIS+ is a free service to primary care organisations to help them improve patient care through the effective use of their clinical computer systems. Website: www.primis.nhs.uk

[16] NHS Improvement works closely with the Department of Health, with all work aligned to national priorities and supporting delivery of key national strategies including the Cancer Reform Strategy; National Service Framework for Coronary Heart Disease and National Stroke Strategy.

15aA study was recently undertaken to evaluate the individual risk factors composing the CHADS2 score and the CHA2DS2-VASc (CHA2DS2-Vascular disease, Age 65-74 years, Sex category) score and to calculate the capability of the schemes to predict thromboembolism.
(Ref : Validation of risk stratification schemes for predicting stroke and thromboembolism in patients with atrial fibrillation: nationwide cohort study; Jonas Bjerring Olesen, Gregory Y H Lip, Morten Lock Hansen, Peter Riis Hansen, Janne Schurmann Tolstrup, Jesper Lindhardsen, Christian Selmer, Ole Ahlehoff, Anne-Marie Schjerning Olsen, Gunnar Hilmar Gislason, Christian Torp-Pedersen, BMJ 2011; 342:d124) The study concluded that CHA2DS2-VASc performed better than CHADS2 in predicting patients at high risk, and those categorised as low risk by CHA2DS2-VASc were truly at low risk for thromboembolism.

[17] CHART (Care and Health Analysis in Real Time) works in conjunction with CHART Online. CHART is a software tool from PRIMIS+ that helps GPs improve patient care by analysing the data held on their clinical computer systems. The software is available free to NHS users in England and can be accessed through registering on the PRIMIS+ Profile Centre.

GRASP-AF was possibly the only tool that could demonstrate savings within a single financial year. GPs in York had been paid to develop the tool and savings made through its use could be used to incentivise GPs to take part.

The York Health Group PBC cluster used GRASP-AF across their 24 practices with a total population of 228,651 patients of which 3,613 patients with AF were identified.

By June 2009:
- The total number of reviews undertaken 716, of which
  - 110 were face-to-face reviews
  - there were 41 (6%) new warfarin prescriptions
  - 37 cases awaiting further review including consultant referral

It was recognised that implementation could be problematic in terms of time and effort and the conversion rate was often disappointing. Continuous education was seen as crucial as well as PCTs/networks planning well ahead to ensure everything was in place in advance to support practices

There were concerns about the way in which contraindications for warfarin were applied. Experience in some areas suggested many issues were logistical rather than clinical (e.g. patients being unable to attend for regular monitoring). Absolute contraindications were likely to apply in about 10% of cases only.

Patient choice was an issue in many decisions not to use warfarin, but more work was needed to establish how that choice was made.

Use of GRASP-AF in York had shown that the use of warfarin in the highest risk AF patients was disappointingly low. However, the study had raised awareness. Financial modelling is already taking place around running a larger trial.

The GRASP-AF tool and other information is available at:
- http://www.improvement.nhs.uk/stroke/
- http://www.improvement.nhs.uk/heart/

Key Leaning Points from Discussion Groups

Mapping
- need to have more data and prevalence information to support
  - primary and secondary care links and expectations
  - individual practice performance
  - a better understanding of current treatment– warfarin/aspirin/neither

Pathways
- need to refine pathways

Location of services
- need to support anticoagulation clinics
- consider where services be based (e.g. anticoagulation etc) – primary or secondary care

Champions
- need to identify clinical champions – ownership and credibility

Screening
- pilot the screening before 'industrialisation' (i.e. scaling up of the initiative)
- pulse taking could be built into diabetic clinics; link with diabetes and COPD
- work with PBC (clusters) (checking pulses)
- start recording CHAD2 scores in letters to GPs
- implement GRASP-AF – explore use/pilot one practice
- ensure pulse check included in health checks

Education
- disseminate outcomes from this masterclass more widely
- run education sessions for colleagues
- GP education – use protected learning time
- '20 seconds to save a life' – the minimum length of time for an effective pulse reading
- education – review of local guidelines
- involve stroke patients – patient voice
- raise awareness in communities

Time in therapeutic range
- Time in therapeutic range – include in contract "monitor time in therapeutic range" performance with KPI measures

Finance
- perform local cost effectiveness – 'money talks'!

Barriers
- lack of capacity in relation to ECGs in primary care
- financial situation
- low uptake by clinical staff
- constant NHS/PCT reorganisation
- changing medical mindset on warfarin – both primary and secondary care
- poor infrastructure to treat and manage warfarin

Support needed
- network support/coordination
- shared learning between networks
- GPs need support: which area is a priority? where does AF sit?
- social marketing for patients – 'plain English'
- information packs for discharged patients
- information on relative vs absolute contraindications
- patient empowerment
- pharmacy support/buy-in
- wakefield work on hypertension

Appendix 1: CHADS$_2$ Score

CHADS$_2$ Score for Atrial Fibrillation Stroke Risk

The CHADS$_2$ score is the best validated clinical prediction rule for determining the risk of stroke and who should be anticoagulated. It assigns points (0-6) depending on the presence or absence of co-morbidities. To compensate for the increased risk of stroke, anticoagulation may be necessary. However, with warfarin, if a patient has a yearly risk of stroke that is less than 2%, then the risks associated with taking warfarin outweigh the risk of getting a stroke from atrial fibrillation.

CHADS$_2$ score[18]

C	CHF Hx	+1
H	HTN Hx	+1
A	Age 75 or >75 yrs old	+1
D	Diabetes Mellitus Hx	+1
S$_2$	Stroke previously or TIA Hx	+2

CHADS$_2$ scores, stroke risk, and risk levels

CHADS$_2$ score	Stroke risk per 100 pt-yr	CHADS$_2$ risk level	Warfarin recommended
0	1.9	Low	No
1	2.8	Low	No
2	4.0	Moderate	Yes
3	5.9	Moderate	Yes
4	8.5	High	Yes
5	12.5	High	Yes
6	18.2	High	Yes

CHA2DS2-VASc

The CHA2DS2-VASc score is a refinement of CHADS$_2$ score and extends the latter by including additional common stroke risk factors.

The maximum CHADS$_2$ score is 6, whilst the maximum CHA2DS2-VASc score is 9.

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[18] http://www.mdcalc.com/chads2; http://www.ccjm.org/PDFFILES/Fitzgeraldsuppl4_05.pdf;

	Condition	Points
C	Congestive heart failure (or Left ventricular systolic dysfunction)	1
H	Hypertension: blood pressure consistently above 140/90 mmHg (or treated hypertension on medication)	1
A$_2$	Age ≥75 years	2
D	Diabetes Mellitus	1
S$_2$	Prior Stroke or TIA or thromboembolism	2
V	Vascular disease (eg. peripheral artery disease, myocardial infarction, aortic plaque)	1
A	Age 65-74 years	1
Sc	Sex category (i.e. female gender)	1

Anticoagulation

Score	Risk	Anticoagulation Therapy	Considerations
0	Low	No antithrombotic therapy (or Aspirin)	No antithrombotic therapy (or Aspirin 75-325mg daily)
1	Moderate	Oral anticoagulant (or Aspirin)	Oral anticoagulant, either new oral anticoagulant drug eg dabigatran or well controlled warfarin at INR 2.0-3.0 (or Aspirin 75-325mg daily, depending on factors such as patient preference)
2 or greater	High	Oral anticoagulant	Oral anticoagulant, using either a new oral anticoagulant drug (eg rivaroxaban or dabigatran) or well controlled warfarin at INR 2.0-3.0

Oral anticoagulation is recommended or preferred for patients with one or more stroke risk factors (ie. a CHA2DS2-VASc score of 1 and above).

Appendix 2: GRASP-AF
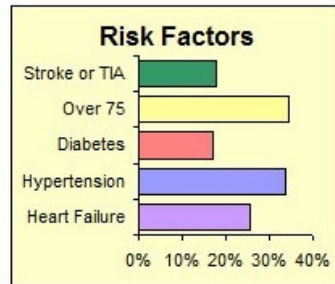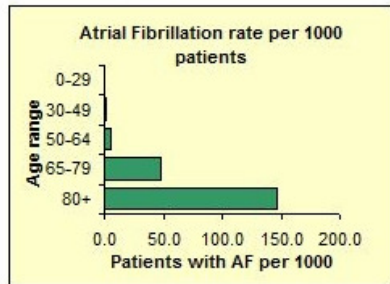

Practice Name   Any Practice

Date of Audit   7th July 2008

Total Practice Population   9824

No. with Atrial Fibrillation   130   0.32%
No. over 65 with AF   0.85%

Risk Profile for Thrombo-embolism

Warfarin use in High Risk Patients

Risk of Stroke v CHADS2 Score (95% CI)

Breakdown of Warfarin and Antiplatelets use by CHADS score
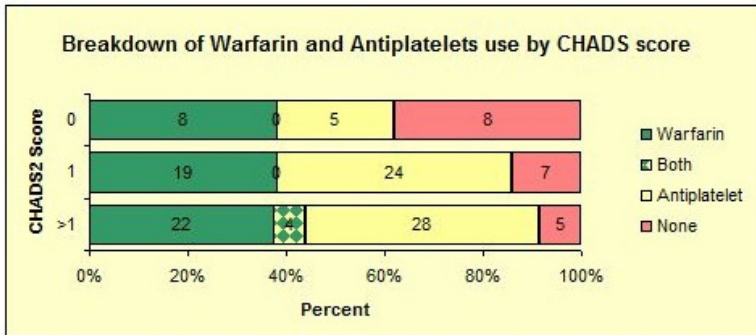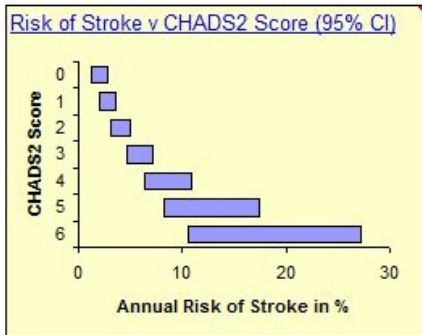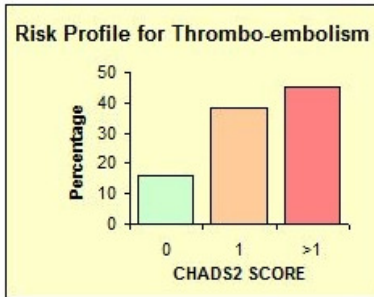
Strokes Expected Annually in untreated group of 33

2.0

(95% CI 1.4 to 2.6)

Atrial Fibrillation rate per 1000 patients

Risk Factors

ADVICE

REFERENCES

PODCAST

Appendix 3: Acronyms and abbreviations

A&E	Accident and emergency
AF	Atrial fibrillation
CHADS$_2$	C - congestive heart failure H – hypertension A – age D – diabetes mellitus S$_2$ - Prior stroke or TIA
CHART / CHART online	Care and Health Analysis in Real Time
CHF	
COPD	Chronic obstructive pulmonary disease
ECG	Electrocardiogram
GRASP-AF	Guidance on Risk Assessment and Stroke Prevention for Atrial Fibrillation
HTN Hx	Hypertension history
INR	International Normalised Ratio
KPI	Key performance indicators
LA	Local authority
LES	Local enhanced service
PAF	Paroxysmal atrial fibrillation
PBC	Practice based commissioning
PCT	Primary care trust
QOF	Quality and Outcomes Framework
SPAF 1	Stroke Prevention in Atrial Fibrillation Trial
TIA Hx	Transient ischemic attack history[