NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Health and social care directorate

Quality standards and indicators

Briefing paper

Quality standard topic: Atrial fibrillation (AF)

Output: Prioritised quality improvement areas for development.

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Contents

1 Introduction

This briefing paper presents a structured overview of potential quality improvement areas for atrial fibrillation (AF). It provides the Committee with a basis for discussing and prioritising quality improvement areas for development into draft quality statements and measures for public consultation.

1.1 Structure

This briefing paper includes a brief description of the topic, a summary of each of the suggested quality improvement areas and supporting information.

If relevant, recommendations selected from the key development source below are included to help the Committee in considering potential statements and measures.

1.2 Development source

The key development source referenced in this briefing paper is:

- Atrial fibrillation. NICE clinical guideline 180 (2014).
- Atrial fibrillation and heart valve disease: self‑monitoring coagulation status using point-of-care coagulometers (the CoaguChek XS system and the INRatio2 PT/INR monitor). NICE diagnostics guidance 14 (2014)

2 Overview

2.1 Focus of quality standard

This quality standard will cover identification, treatment and management of AF (including paroxysmal, persistent and permanent AF and atrial flutter) in adults (18 years and older).

2.2 Definition

AF is a condition that affects the heart, causing it to beat irregularly and too fast. When this happens, blood does not flow properly through the heart and the rest of the body. This means that people with AF may be at increased risk of blood clots. Blood clots can block blood vessels and a stroke can occur if a blood vessel in the brain is blocked by a clot. As a result if left untreated atrial fibrillation is a significant risk factor for stoke and other morbidities.

2.3 Incidence and prevalence

AF is the most common sustained cardiac arrhythmia, and estimates suggest its prevalence is increasing.

In 2011/2012 the Quality and Outcomes Framework (QOF) estimated the prevalence of AF as 1.48%[1].

Data from QOF may underestimate true prevalence due to exclusion of some patients. An alternative recent estimate of prevalence was provided by the GRASP-AF (Guidance on Risk Assessment and Stroke Prevention for Atrial Fibrillation) risk assessment tool, which provided an estimate of prevalence of 1.76%[2]. This was based on 1857 general practices in England, representing 21% of the population, who voluntarily uploaded data on AF management between 2009 and 2012. The GRASP tool assessed patients with AF at any time in their history. When patients with an AF resolved code were excluded from consideration, prevalence was reduced to 1.65%. The NICE Commissioning Guide for anticoagulation therapy published in 2013, estimated the prevalence of AF as 1.6% of the whole population of England.

The prevalence of known AF may be an underestimate of the true prevalence. This was illustrated in the SAFE study[3] in which targeted opportunistic screening increased the prevalence of AF by 0.5%. It is possible, therefore, that the true prevalence of AF for the population of England is 2.0%.

2.4 Management

The aim of management of AF is to prevent complications, particularly stroke, and alleviate symptoms. Drug treatments include anticoagulants to reduce the risk of stroke and antiarrhythmics to restore or maintain the normal heart rhythm or to slow the heart rate in people who remain in atrial fibrillation. Non-pharmacological management includes electrical cardioversion, which may be used to 'shock' the heart back to its normal rhythm, and catheter or surgical ablation to create lesions to stop the abnormal electrical impulses that cause atrial fibrillation.

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[1] Health & Social Care Information Centre. Atrial fibrillation: Quality and Outcomes Framework (QOF) for April 2011-March 2012, England. 2012.

[2] Cowan C, Healicon R, Robson I, Long WR, Barrett J, Fay M et al. The use of anticoagulants in the management of atrial fibrillation among general practices in England. Heart (British Cardiac Society). 2013; 99(16):1166-1172

[3] Hobbs FD, Fitzmaurice DA, Mant J, Murray E, Jowett S, Bryan S et al. 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 (Winchester, England). 2005; 9(40):iii-x, 1

2.5 National Outcome Frameworks

Tables 1 and 2 show the outcomes, overarching indicators and improvement areas from the frameworks that the quality standard could contribute to achieving.

Table 1 NHS Outcomes Framework 2014–15

Domain	Overarching indicators and improvement areas
1 Preventing people from dying prematurely	***Overarching indicator*** 1a Potential Years of Life Lost (PYLL) from causes considered amenable to healthcare i Adults ***Improvement areas*** **Reducing premature mortality from the major causes of death** 1.1 Under 75 mortality rate from cardiovascular disease (PHOF 4.4*)
2 Enhancing quality of life for people with long-term conditions	***Overarching indicator*** 2 Health-related quality of life for people with long-term conditions (ASCOF 1A**) ***Improvement areas*** **Ensuring people feel supported to manage their condition** 2.1 Proportion of people feeling supported to manage their condition **Reducing time spent in hospital by people with long-term conditions** 2.3i Unplanned hospitalisation for chronic ambulatory care sensitive conditions (adults)
4 Ensuring that people have a positive experience of care	***Overarching indicator*** 4a Patient experience of primary care i GP services 4b Patient experience of hospital care ***Improvement areas*** **Improving people's experience of outpatient care** 4.1 Patient experience of outpatient services **Improving access to primary care services** 4.4 Access to i GP services
Alignment across the health and social care system * Indicator shared with Public Health Outcomes Framework (PHOF) ** Indicator complementary with Adult Social Care Outcomes Framework (ASCOF)	

Table 2 Public health outcomes framework for England, 2013–2016

Domain	Objectives and indicators
4 Healthcare public health and preventing premature mortality	***Objective*** Reduced numbers of people living with preventable ill health and people dying prematurely, while reducing the gap between communities ***Indicators*** 4.3 Mortality rate from causes considered preventable ** (NHSOF 1a) 4.4 Under 75 mortality rate from all cardiovascular disease (including heart disease and stroke)* (NHSOF 1.1)
Alignment across the health and social care system *Indicator shared with the NHS Outcomes Framework (NHSOF) **Complementary to indicators in the NHS Outcomes Framework (NHSOF)	

3 Summary of suggestions

3.1 Responses

In total 24 stakeholders responded to the 2-week engagement exercise 08/10/2014 – 22/10/2014.

Stakeholders were asked to suggest up to 5 areas for quality improvement. Specialist committee members were also invited to provide suggestions. The responses have been merged and summarised in table 3 for further consideration by the Committee.

NHS England's patient safety division submitted comments during stakeholder engagement, which are summarised in this paper and can be found in full in appendix 3.

Full details of all the suggestions provided are given in appendix 3 for information.

Table 3 Summary of suggested quality improvement areas

Suggested area for improvement	Stakeholders
Diagnosis and assessment	AA, AFA, APGAF, BMS/P, LSSCN, M, NAFCPF, SCM
Personalised package of care	AA, AFA, APGAF, B, BANCC, LSSCN, NAFCPF, SA, SCM, UCLP
Referral for specialised management	AA, AFA, APGAF, BANCC, M, SCM, UCLP
Assessment of stroke and bleeding risks	AA, AFA, APGAF , B, BMS/P, RCPE, SCM, UCLP
Interventions to prevent stroke • Anticoagulation • Antiplatelets • Left atrial appendage occlusion • Review of people with AF	AA, AFA, APGAF, B, BMS/P, LSSCN, M, NAFCPF, NHSEPSD, RD, RCPE, SA, SCM, UCLP
Rate and rhythm control • Cardioversion	LSSCN, RCA
Self-monitoring • Self-monitoring of coagulation status	AFA, RD, UCLP
Additional areas • Implementation of GRASP-AF tool • Opportunistic screening • Tests for Omega 3 Fatty Acids and Vitamin D • Waiting for treatment • Technologies • AF lead	AA, AFA, APGAF, BMS/P, HQT, L, M, RCPE, SCM, UCLP

AA, Arrhythmia Alliance
AFA, Atrial Fibrillation Association
APPGAF, All-Party Parliamentary Group on Atrial Fibrillation
B, Bayer PLC
BANCC, British Association For Nursing in Cardiovascular Care
BMS/P, Bristol-Myers Squibb / Pfizer Alliance
HQT, HQT Diagnostics
L, Luncbeck
LSSCN, London Stroke Strategic Clinical Network
M, Medtronic Ltd
NAFCPF, National Atrial Fibrillation Clinical Policy Forum
NHSEPSD, NHS England Patient Safety Division
RCA, Royal College of Anaesthetists
RCPE, Royal College of Physicians of Edinburgh
RD, Roche Diagnostics
SA, Stroke Association
SCM, Specialist Committee Member(s)
UCLP, UCL Partners Academic Health Science Network

4 Suggested improvement areas

4.1 Diagnosis and assessment

4.1.1 Summary of suggestions

Diagnosis and assessment

Stakeholders highlighted that it is important that AF is identified at the earliest stage possible in order to prevent AF-related stroke and that many patients are only identified once an AF-related stroke has occurred. Stakeholders stated that manual pulse checks and performing electrocardiograms (ECG) will help to identify these people.

4.1.2 Selected recommendations from development source

Table 4 below highlights recommendations that have been provisionally selected from the development source that may support potential statement development. These are presented in full after table 4 to help inform the Committee's discussion.

Table 4 Specific areas for quality improvement

Suggested quality improvement area	Suggested source guidance recommendations
Diagnosis and assessment	**Diagnosis and assessment** **Assessment** NICE CG180 Recommendations 1.1.1 to 1.1.3

Diagnosis and assessment

NICE CG180 – Recommendation 1.1.1

Perform manual pulse palpation to assess for the presence of an irregular pulse that may indicate underlying atrial fibrillation in people presenting with any of the following:

- breathlessness/dyspnoea
- palpitations
- syncope/dizziness
- chest discomfort
- stroke/transient ischaemic attack.

NICE CG180 – Recommendation 1.1.2

Perform an electrocardiogram (ECG) in all people, whether symptomatic or not, in whom atrial fibrillation is suspected because an irregular pulse has been detected.

NICE CG180 – Recommendation 1.1.3

In people with suspected paroxysmal atrial fibrillation[4] undetected by standard ECG recording:

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

4.1.3 Current UK practice

Diagnosis and assessment

Based on the quality outcomes frameworks 2011/12 disease register and the estimated prevalence of AF, the Department of Health has predicted that 18% of AF remains undiagnosed, sometimes remaining so until an acute or life threatening event occurs (such as AF related-stroke)[5].

[4] Paroxysmal atrial fibrillation is defined as spontaneously terminating within 7 days, usually within 48 hours.
[5] Department of Health (2013). Cardiovascular Disease Outcomes Strategy: Improving outcomes for people with or at risk of cardiovascular disease.

4.2 Personalised package of care

4.2.1 Summary of suggestions

Personalised package of care

Stakeholders stated that patients need a personalised package of care in order to understand all the treatment options available to them as well as information regarding life style and supportive programmes. A personalised package of care may also improve medication adherence in patients with AF.

4.2.2 Selected recommendations from development source

Table 5 below highlights recommendations that have been provisionally selected from the development source that may support potential statement development. These are presented in full after table 5 to help inform the Committee's discussion.

Table 5 Specific areas for quality improvement

Suggested quality improvement area	Selected source guidance recommendations
Personalised package of care	**Personalised package of care and information** NICE CG180 Recommendations 1.2.1(KPI) and 1.2.2

Personalised package of care

NICE CG180 Recommendation 1.2.1 (key priority for implementation)

Offer people with atrial fibrillation a personalised package of care. Ensure that the package of care is documented and delivered, and that it covers:

- stroke awareness and measures to prevent stroke
- rate control
- assessment of symptoms for rhythm control
- who to contact for advice if needed
- psychological support if needed
- up-to-date and comprehensive education and information on:
    - cause, effects and possible complications of atrial fibrillation
    - management of rate and rhythm control
    - anticoagulation
    - practical advice on anticoagulation in line with recommendation 1.3.1 in 'Venous thromboembolic diseases' (NICE clinical guideline 144)
    - support networks (for example, cardiovascular charities).

NICE CG180 Recommendation 1.2.2

NICE has produced guidance on the components of good patient experience in adult NHS services. Follow the recommendations in Patient experience in adult NHS services (NICE clinical guideline 138).

4.2.3 Current UK practice

No published studies on current practice were highlighted for this suggested area for quality improvement; this area is based on stakeholder's knowledge and experience.

4.3 Referral for specialised management

4.3.1 Summary of suggestions

Referral for specialised management

Stakeholders highlighted that prompt referral (within 4 weeks) of patients whose symptoms of AF are not controlled should be referred to specialist management in order to address symptoms of AF. Currently referral pathways can be complex and referral delays only add to prolong the pathway.

4.3.2 Selected recommendations from development source

Table 6 below highlights recommendations that have been provisionally selected from the development source that may support potential statement development. These are presented in full after table 6 to help inform the Committee's discussion.

Table 6 Specific areas for quality improvement

Suggested quality improvement area	Selected source guidance recommendations
Referral for specialised management	**Referral for specialised management** NICE CG180 Recommendation 1.3.1 (KPI)

Referral for specialised management

NICE CG180 Recommendation 1.3.1 (key priority for implementation)

Refer people promptly[6] at any stage if treatment fails to control the symptoms of atrial fibrillation and more specialised management is needed.

4.3.3 Current UK practice

No published studies on current practice were highlighted for this suggested area for quality improvement; this area is based on stakeholder's knowledge and experience with anecdotal evidence provided on the delays in the referral process.

[6] The Guideline Development Group defined 'promptly' as no longer than 4 weeks after the final failed treatment or no longer than 4 weeks after recurrence of atrial fibrillation following cardioversion when further specialised management is needed.

4.4 Assessment of stroke and bleeding risks

4.4.1 Summary of suggestions

Assessment of stroke and bleeding risk

Stakeholders stated that a stroke risk assessment should be performed using the CHA_2DS_2-VASc tool and a bleeding risk assessment should be performed using the HAS-BLED tool in order to establish risks in individual patients which can inform management decisions.

4.4.2 Selected recommendations from development source

Table 7 below highlights recommendations that have been provisionally selected from the development source that may support potential statement development. These are presented in full after table 7 to help inform the Committee's discussion.

Table 7 Specific areas for quality improvement

Suggested quality improvement area	Selected source guidance recommendations
Assessment of stroke and bleeding risks	**Assessment of stroke and bleeding risks** NICE CG180 Recommendation 1.4.1 and 1.4.2 (KPIs)

Assessment of stroke and bleeding risks

NICE CG180 Recommendation 1.4.1 (key priority for implementation)

Use the CHA_2DS_2-VASc stroke risk score to assess stroke risk in people with any of the following:

- symptomatic or asymptomatic paroxysmal, persistent or permanent atrial fibrillation
- atrial flutter
- a continuing risk of arrhythmia recurrence after cardioversion back to sinus rhythm.

NICE CG180 Recommendation 1.4.2 (key priority for implementation)

Use the HAS-BLED score to assess the risk of bleeding in people who are starting or have started anticoagulation. Offer modification and monitoring of the following risk factors:

- uncontrolled hypertension

- poor control of international normalised ratio (INR) ('labile INRs')
- concurrent medication, for example concomitant use of aspirin or a non-steroidal anti-inflammatory drug (NSAID)
- harmful alcohol consumption.

4.4.3 Current UK practice

No published UK studies on current practice were identified for this suggested area for quality improvement. The European Heart Rhythm Association survey (which included some UK centres) identified that 97.7% of centres used CHA_2DS_2-VASc tool[7]. However stakeholders felt that some centres were still using the less sensitive $CHADS_2$ tool.

[7] European Heart Rhythm Association (2014). Stroke and bleeding risk evaluation in atrial fibrillation: results of the European Heart Rhythm Association survey

4.5 Interventions to prevent stroke

4.5.1 Summary of suggestions

Anticoagulation

Stakeholders highlighted that uptake of anticoagulation is poor and that by not providing anticoagulation for those in whom it is indicated places patients at an increased risk of stroke. Stakeholders felt that choice of anticoagulation should be given and that anticoagulation control should take place in order ensure that correct anticoagulation is used and that alternatives may be offered if poor anticoagulation cannot be improved.

Antiplatelets

Stakeholders stated that antiplatelets (such as aspirin) should not be used exclusively for preventing stroke in people with atrial fibrillation. They stated that aspirin is not as effective at preventing stroke while still associated with the risks of bleeding present in anticoagulants such as Warfarin.

Left atrial appendage occlusion (LAAO)

Stakeholders felt that for patients who cannot take anticoagulant medication due to contraindication or intolerance LAAO should be offered. This would help some patients have access to stroke prevention who otherwise would have none.

Review of people with AF

Stakeholders suggested that as AF is a chronic disease it should be regularly reviewed. Given that a person's risk status can change over time, the type of anticoagulation may also change as well as whether it needs be commenced when previously it has not.

4.5.2 Selected recommendations from development source

Table 8 below highlights recommendations that have been provisionally selected from the development source that may support potential statement development. These are presented in full after table 8 to help inform the Committee's discussion.

Table 8 Specific areas for quality improvement

Suggested quality improvement area	Suggested source guidance recommendations
Anticoagulation	**Anticoagulation** NICE CG180 Recommendations 1.5.2, 1.5.3(KPI) and 1.5.4 **Assessing anticoagulation control with**

	vitamin K antagonists NICE CG180 Recommendations 1.5.11(KPI), 1.5.12, 1.5.13 1.5.14(KPI)
Antiplatelets	**Antiplatelets** NICE CG180 Recommendations 1.5.15(KPI)
Left atrial appendage occlusion (LAAO)	**Left atrial appendage occlusion** NICE CG180 Recommendations 1.5.19 and 1.5.20
Review of people with AF	**Review of people with atrial fibrillation** NICE CG180 Recommendations 1.5.16 to 1.5.18

Anticoagulation

NICE CG180 – Recommendation 1.5.2

Consider anticoagulation for men with a CHA_2DS_2-VASc score of 1. Take the bleeding risk into account.

NICE CG180 – Recommendation 1.5.3 (key priority for implementation)

Offer anticoagulation to people with a CHA_2DS_2-VASc score of 2 or above, taking bleeding risk into account.

NICE CG180 – Recommendation 1.5.3

Discuss the options for anticoagulation with the person and base the choice on their clinical features and preferences.

Assessing anticoagulation control with vitamin K antagonists

NICE CG180 – Recommendation 1.5.11 (key priority for implementation)

Calculate the person's time in therapeutic range (TTR) at each visit. When calculating TTR:

- use a validated method of measurement such as the Rosendaal method for computer-assisted dosing or proportion of tests in range for manual dosing
- exclude measurements taken during the first 6 weeks of treatment
- calculate TTR over a maintenance period of at least 6 months.

NICE CG180 – Recommendation 1.5.12

Reassess anticoagulation for a person with poor anticoagulation control shown by any of the following:

- 2 INR values higher than 5 or 1 INR value higher than 8 within the past 6 months
- 2 INR values less than 1.5 within the past 6 months
- TTR less than 65%.

NICE CG180 – Recommendation 1.5.13

When reassessing anticoagulation, take into account and if possible address the following factors that may contribute to poor anticoagulation control:

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

NICE CG180 – Recommendation 1.5.14 (key priority for implementation)

If poor anticoagulation control cannot be improved, evaluate the risks and benefits of alternative stroke prevention strategies and discuss these with the person.

Antiplatelets

NICE CG180 – Recommendation 1.5.15 (key priority for implementation)

Do not offer aspirin monotherapy solely for stroke prevention to people with atrial fibrillation.

Left atrial appendage occlusion

NICE CG180 – Recommendation 1.5.19

Consider left atrial appendage occlusion (LAAO) if anticoagulation is contraindicated or not tolerated and discuss the benefits and risks of LAAO with the person. For more information see Percutaneous occlusion of the left atrial appendage in non-valvular atrial fibrillation for the prevention of thromboembolism (NICE interventional procedure guidance 349).

NICE CG180 – Recommendation 1.5.20

Do not offer LAAO as an alternative to anticoagulation unless anticoagulation is contraindicated or not tolerated.

Review of people with atrial fibrillation

NICE CG180 – Recommendation 1.5.16

For people who are not taking an anticoagulant, review stroke risk when they reach age 65 or if they develop any of the following at any age:

- diabetes
- heart failure
- peripheral arterial disease
- coronary heart disease
- stroke, transient ischaemic attack or systemic thromboembolism.

NICE CG180 – Recommendation 1.5.17

For people who are not taking an anticoagulant because of bleeding risk or other factors, review stroke and bleeding risks annually, and ensure that all reviews and decisions are documented.

NICE CG180 – Recommendation 1.5.18

For people who are taking an anticoagulant, review the need for anticoagulation and the quality of anticoagulation at least annually, or more frequently if clinically relevant events occur affecting anticoagulation or bleeding risk.

4.5.3 Current UK practice

Anticoagulation

The Sentinel Stroke National Audit Programme (SSNAP) in its latest clinical audit public report between April and June 2014, found that while one fifth of patients within their audit had atrial fibrillation on admission only 39.7% of these patients had been taking anticoagulants, despite over a quarter of these patients having had a prior stroke of TIA. These figures were also similar for the previous 3 reports published as shown in figure 1[8].

If patient is in Atrial Fibrillation, was the patient on anticoagulant medication prior to admission? (Q2.1.7)	Jul-Sep 2013 N=3461	Oct-Dec 2013 N=3916	Jan-Mar 2014 N=4215	Apr-Jun 2014 N=3727	*Ref*
Yes	38.4%	38.5%	38.9%	39.7%	*F6.13*
No	49.8%	49%	47.8%	46.3%	*F6.15*
No but	11.8%	12.6%	13.3%	14.0%	*F6.17*

Figure 1

[8] Royal College of Physicians (2014). National Sentinel Stroke National Audit Programme

Similarly data from the GRASP-AF toolkit found that 42.68% of people with a $CHADS_2$ score greater than 1 are not prescribed anticoagulation[9].

A paper by Phyu et al which considered a retrospective audit into appropriate use of anticoagulation found that 64.7% of patients on anticoagulants (exclusively warfarin in this case) had a therapeutic range below 60% indicating poor anticoagulation control[10].

Antiplatelets

The SSNAP clinical audit public report also found that 41.5% of patients admitted in AF were taking antiplatelet medication prior to admission as presented in figure 2[11].

If patient is in Atrial Fibrillation, was the patient on antiplatelet medication prior to admission? (Q2.1.6)	Jul-Sep 2013 N=3461	Oct-Dec 2013 N=3916	Jan-Mar 2014 N=4215	Apr-Jun 2014 N=3727	*Ref*
Yes	43%	40.9%	39%	41.5%	*F6.6*
No	46.9%	49.8%	50.1%	47.0%	*F6.8*
No but	10.1%	9.3%	10.9%	11.6%	*F6.10*

Figure 2

Similarly data from the GRASP-AF toolkit found that 33.98% of AF patients with a $CHADS_2$ score greater than one are prescribed antiplatelets to help reduce their risk of stroke[12].

Left atrial appendage occlusion

No published UK studies on current practice were identified for this suggested area for quality improvement; however stakeholders felt that there is currently limited access to this intervention in England.

Review of people with atrial fibrillation

No published UK studies on current practice were identified for this suggested area for quality improvement; however stakeholders highlighted that while people with AF may have annual reviews for co-morbidities they do not currently have them for AF and specifically stroke prevention.

[9] Atrial Fibrillation Association (2014). Grasp the initiative: action plan
[10] Phyu CT, Taylor C, Khan Z et al. (2014) Are patients with stroke and atrial fibrillation receiving appropriate anticoagulation? *Heart* 100.
[11] Royal College of Physicians (2014). National Sentinel Stroke National Audit Programme
[12] Atrial Fibrillation Association (2014). Grasp the initiative: action plan

4.6 Rate and rhythm control

4.6.1 Summary of suggestions

Cardioversion

Stakeholders highlighted that people with AF should be offered cardioversion in order bring their heart back to a normal rhythm. This would reduce risk of stroke and return it to that of the general population.

4.6.2 Selected recommendations from development source

Table 9 below highlights recommendations that have been provisionally selected from the development source that may support potential statement development. These are presented in full after table 9 to help inform the Committee's discussion.

Table 9 Specific areas for quality improvement

Suggested quality improvement area	Suggested source guidance recommendations
Cardioversion	**Rhythm control** NICE CG180 Recommendation 1.6.6 **Cardioversion** NICE CG180 Recommendations 1.6.7 to 1.6.9

Rhythm control

NICE CG180 – Recommendation 1.6.6

Consider pharmacological and/or electrical rhythm control for people with atrial fibrillation whose symptoms continue after heart rate has been controlled or for whom a rate‑control strategy has not been successful.

Cardioversion

NICE CG180 – Recommendation 1.6.7

For people having cardioversion for atrial fibrillation that has persisted for longer than 48 hours, offer electrical (rather than pharmacological) cardioversion.

NICE CG180 – Recommendation 1.6.8

Consider amiodarone therapy starting 4 weeks before and continuing for up to 12 months after electrical cardioversion to maintain sinus rhythm, and discuss the benefits and risks of amiodarone with the person.

NICE CG180 – Recommendation 1.6.9

For people with atrial fibrillation of greater than 48 hours' duration, in whom elective cardioversion is indicated:

- both transoesophageal echocardiography (TOE)‑ guided cardioversion and conventional cardioversion should be considered equally effective
- a TOE-guided cardioversion strategy should be considered:
    - where experienced staff and appropriate facilities are available and
    - where a minimal period of precardioversion anticoagulation is indicated due to the person's choice or bleeding risks.

4.6.3 Current UK practice

Cardioversion

No published UK studies on current practice were identified for this suggested area for quality improvement; however stakeholders highlighted that there is significant variation in practice throughout England.

4.7 Self-monitoring

4.7.1 Summary of suggestions

Self-monitoring of coagulation status

Stakeholders highlighted that people with AF should be offered the option of monitoring their own coagulation status, in particular using the CoagChek XS system and the INRatio2 PT/INR monitor. This can help patients control their AF and potentially reduce the need for anticoagulation.

4.7.2 Selected recommendations from development source

Table 10 below highlights recommendations that have been provisionally selected from the development source that may support potential statement development. These are presented in full after table 10 to help inform the Committee's discussion.

Table 10 Specific areas for quality improvement

Suggested quality improvement area	Suggested source guidance recommendations
Self-monitoring of coagulation status	**Atrial fibrillation and heart valve disease: self‑monitoring coagulation status using point‑of‑care coagulometers (the CoaguChek XS system and the INRatio2 PT/INR monitor)** NICE DG14 Recommendations 1.1 to 1.5

Atrial fibrillation and heart valve disease: self‑monitoring coagulation status using point‑of‑care coagulometers (the CoaguChek XS system and the INRatio2 PT/INR monitor)

NICE DG14 – Recommendation 1.1

The CoaguChek XS system is recommended for self‑monitoring coagulation status in adults and children on long‑term vitamin K antagonist therapy who have atrial fibrillation or heart valve disease if:

- the person prefers this form of testing **and**
- the person or their carer is both physically and cognitively able to self‑ monitor effectively.

NICE DG14 – Recommendation 1.2

The InRatio2 PT/INR monitor is recommended for self‑monitoring coagulation status in adults and children on long‑term vitamin K antagonist therapy who have atrial fibrillation or heart valve disease if:

- the person prefers this form of testing **and**
- the person or their carer is both physically and cognitively able to self‑monitor effectively.

  Although there is greater uncertainty of clinical benefit for the InRatio2 PT/INR monitor than for the CoaguChek XS system, the evidence indicates that the precision and accuracy of both monitors are comparable to laboratory‑ based INR testing.

NICE DG14 – Recommendation 1.3

Patients and carers should be trained in the effective use of the CoaguChek XS system or the INRatio2 PT/INR monitor and clinicians involved in their care should regularly review their ability to self‑monitor.

NICE DG14 – Recommendation 1.4

Equipment for self‑monitoring should be regularly checked using reliable quality control procedures, and by testing patients' equipment against a healthcare professional's coagulometer which is checked in line with an external quality assurance scheme. Ensure accurate patient records are kept and shared appropriately.

NICE DG14 – Recommendation 1.5

For people who may have difficulty with or who are unable to self‑monitor, such as children or people with disabilities, their carers should be considered to help with self ‑monitoring.

4.7.3 Current UK practice

Self-monitoring of coagulation status

Given the nature of the recent emergence of this area no published studies on current practice were highlighted for this suggested area for quality improvement; this area is based on stakeholder’s knowledge and experience.

4.8 Additional areas

4.8.1 Summary of suggestions

The improvement areas below were suggested as part of the stakeholder engagement exercise. However they were felt to be either outside the remit of the quality standard referral and the development source (NICE guidance) or require further discussion by the Committee to establish potential for statement development.

There will be an opportunity for the QSAC to discuss these areas at the end of the session on 02 December 2014.

Implementation of GRASP-AF (Guidance on Risk Assessment and Stroke Prevention for Atrial Fibrillation) tool

A stakeholder highlighted that the implementation of the GRASP-AF tool in primary care can help GPs to identify AF patients at risk of strokes, and the treatment that they are currently receiving. This tool is currently used in around a third of GP practices[13]. This tool is not currently accredited or endorsed by NICE, and is not contained within the development source (NICE CG180).

Opportunistic screening

Stakeholders suggested that opportunistic screening of people age 65 and over via pulse measurement is an emergent area of practice. This would identify people with atrial fibrillation and enable management of AF. A stakeholder also highlighted screening for alcohol misuse. Screening is not usually addressed with NICE quality standards, and while diagnosis and assessment is covered within the development source (NICE CG180) it does not specify those over 65 years of age. Harmful alcohol use would be captured within the HASBLED score.

Tests for Omega 3 Fatty Acids and Vitamin D

A stakeholder felt that an increase in Omega 3 Fatty Acids and Vitamin D can improve overall heart health and reduce mortality from cardiovascular disease. Testing for these levels may help to identify those people with AF whose levels are low. This area is not contained within the development source (NICE CG180).

Waiting for treatment

A stakeholder felt that adults with AF who require anticoagulants should be seen at an anticoagulant clinic within 2 weeks, as during the time between identification and anticoagulation the person remains at risk of stroke. This area is not contained within the development source (NICE CG180).

[13] Atrial Fibrillation Association (2014). Grasp the initiative: action plan

Technologies

Stakeholders highlighted that technology can aid in the detection of AF which current prevalence is most likely below true prevalence. In particular access to hand held devices (such as WatchBP Home A) or smart phone devices. While this is not explicitly covered by the development source (NICE CG180), WatchBP Home A is covered by NICE medical technologies guidance 13.

AF lead

Stakeholders felt that due to AFs chronic nature tailored care is required to manage an individual's symptoms. Link with a supportive AF 'lead' or local service would ensure optimum management of all AF patients. This area is not contained within the development source (NICE CG180).

Appendix 1: Additional information

Assessment of stroke and bleeding risk (CHA_2DS_2-VASc score and HASBLED score tools)

CHA_2DS_2-VASc score		
Risk factor	***Score***	**Present?**
Congestive heart failure or left ventricular dysfunction	1	
Hypertension	1	
Age 75 years or greater	2	
Age 65–74 years	1	
Diabetes mellitus	1	
Stroke, transient ischaemic attack or thromboembolism	2	
Vascular disease[f]	1	
Sex category female	1	
Total		

HAS-BLED score		
Risk factor	***Score***	**Present?**
Hypertension (uncontrolled)[a]	1	
Abnormal liver function[b]	1	
Abnormal renal function[c]	1	
Stroke	1	
Bleeding[d]	1	
Labile INR[e]	1	
Elderly[g]	1	
Drugs[h]	1	
Alcohol[i]	1	
Total		

a. Uncontrolled blood pressure, for example systolic blood pressure more than 160 mmHg.

b. Chronic hepatic disease (for example, cirrhosis) or biochemical evidence of significant hepatic derangement (for example, bilirubin more than 2 times upper limit of normal, in association with aspartate/alanine aminotransferase or alkaline phosphatase more than 3 times upper limit of normal, etc.).

c. The presence of chronic dialysis or renal transplantation or serum creatinine 200 micromol/L or more.

d. Previous bleeding history and/or predisposition to bleeding, for example bleeding diathesis, anaemia, etc.

e. Unstable/high international normalised ratios (INRs) or poor time in therapeutic range (for example, less than 60%).

f. Prior myocardial infarction, peripheral artery disease, aortic plaque.

g. For example, age over 65 years, frail condition.

h. Concomitant use of drugs such as antiplatelet agents, non-steroidal anti-inflammatory drugs, etc.

i. Alcohol abuse.

Appendix 2: Key priorities for implementation (CG180)

Recommendations that are key priorities for implementation in the source guideline and that have been referred to in the main body of this report are highlighted in grey.

Personalised package of care and information

Offer people with atrial fibrillation a personalised package of care. Ensure that the package of care is documented and delivered, and that it covers:

- stroke awareness and measures to prevent stroke
- rate control
- assessment of symptoms for rhythm control
- who to contact for advice if needed
- psychological support if needed
- up-to-date and comprehensive education and information on:
    - cause, effects and possible complications of atrial fibrillation
    - management of rate and rhythm control
    - anticoagulation
    - practical advice on anticoagulation in line with recommendation 1.3.1 in 'Venous thromboembolic diseases' (NICE clinical guideline 144)
    - support networks (for example, cardiovascular charities).

Referral for specialised management

Refer people promptly at any stage if treatment fails to control the symptoms of atrial fibrillation and more specialised management is needed.

Assessment of stroke and bleeding risks

Stroke risk

Use the CHA_2DS_2-VASc stroke risk score to assess stroke risk in people with any of the following:

- symptomatic or asymptomatic paroxysmal, persistent or permanent atrial fibrillation
- atrial flutter
- a continuing risk of arrhythmia recurrence after cardioversion back to sinus rhythm.

Bleeding risk

Use the HAS-BLED score to assess the risk of bleeding in people who are starting or have started anticoagulation. Offer modification and monitoring of the following risk factors:

- uncontrolled hypertension
- poor control of international normalised ratio (INR) ('labile INRs')
- concurrent medication, for example concomitant use of aspirin or a non-steroidal anti-inflammatory drug (NSAID)
- harmful alcohol consumption.

Interventions to prevent stroke

Anticoagulation

Anticoagulation may be with apixaban, dabigatran etexilate, rivaroxaban or a vitamin K antagonist.

Offer anticoagulation to people with a CHA2DS2-VASc score of 2 or above, taking bleeding risk into account

Assessing anticoagulation control with vitamin K antagonists

Calculate the person's time in therapeutic range (TTR) at each visit. When calculating TTR:

- use a validated method of measurement such as the Rosendaal method for computer‑assisted dosing or proportion of tests in range for manual dosing
- exclude measurements taken during the first 6 weeks of treatment
- calculate TTR over a maintenance period of at least 6 months.

If poor anticoagulation control cannot be improved, evaluate the risks and benefits of alternative stroke prevention strategies and discuss these with the person.

Antiplatelets

Do not offer aspirin monotherapy solely for stroke prevention to people with atrial fibrillation.

Rate and rhythm control

When to offer rate or rhythm control

Offer rate control as the first-line strategy to people with atrial fibrillation, except in people:

- whose atrial fibrillation has a reversible cause
- who have heart failure thought to be primarily caused by atrial fibrillation
- with new-onset atrial fibrillation
- with atrial flutter whose condition is considered suitable for an ablation strategy to restore sinus rhythm

- for whom a rhythm control strategy would be more suitable based on clinical judgement.

Left atrial ablation and a pace and ablate strategy

Left atrial ablation

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

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

Appendix 3: Suggestions from stakeholder engagement exercise

ID	Stakeholder	Suggested key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
4.1 Diagnosis and assessment					
001	All-Party Parliamentary Group on Atrial Fibrillation	Patient and GP Education on the importance of early diagnosis and appropriate treatment of AF	It is anticipated that AF will cost the NHS 1% of its annual budget and it is important that patients with AF identified at the earliest possible stage, preventing the risk of AF-related stroke. Early detection, diagnosis and appropriate medical management leads to fewer appointments and admissions, saving the NHS money, and individuals ill-health, in the long term.	Similarly, service providers need to ensure continued medical professional education about the diagnosis, treatment, communication and aftercare of patients with AF, as part of medical professionals' CPD. This is of particular importance, as an APGAF survey of over 650 patients found that 52 per cent did not believe that they received any information about the range of treatments and therapy options available to them. Opportunistic screening programmes (such as conducting pulse checks in flu clinics) have been shown to deliver immediate cost savings by preventing stroke. Service providers should deliver a public information campaign to raise the general public's awareness of AF and the importance of knowing your pulse. Similarly, pulse checks are quick, simple and extremely low-cost. The importance of pulse checks should be widely publicised and undertaken both inside and outside of medical practices. For instance, existing Health Promotion campaigns in schools and community groups must educate people how to measure their	

ID	Stakeholder	Suggested key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
				pulse.	
002	Arrhythmia Alliance	A pulse check should be given to all patients presenting with or episodes of palpitations, light headedness / dizziness / fatigue / breathlessness / and other symptoms that are associated with AF	While AF prevalence increases in the 65 years+ AF can occur at any age. Often, diagnosis of AF is delayed in people under the age of 60 years simply because a pulse check and ECG are not considered. Too often this leads to poor emotional, mental and physical health as the individual and their families struggle with an undiagnosed condition	Delayed diagnosis impacts on healthcare costs through multiple medical appointments and increased risk of depression and anxiety. These are avoidable costs and preventable conditions if AF was to be detected and diagnosed earlier. Patients experiencing long delays (as much as ten years) face issues managing employment, financial stability, family-care alongside anxiety, fear and depression. For some patients, there will also be increased risk of Heart Failure and stroke	AF Case stories: http://www.atrialfibrillation.org.uk/stories/paroxysmal_af.html http://www.atrialfibrillation.org.uk/stories/stories.html
003	Atrial Fibrillation Association	Additional developmental areas and emerging practice: A pulse check should be given to all patients presenting with or episodes of palpitations, light headedness / dizziness / fatigue / breathlessness / and other symptoms that are associated with AF	While AF prevalence increases in the 65 years+ . AF can occur at any age. Often, diagnosis of AF is delayed in people under the age of 60 years simply because a pulse check and ECG are not considered. Too often this leads to poor emotional, mental and physical health as the individual and their families struggle with an undiagnosed condition	Delayed diagnosis impacts on healthcare costs through multiple medical appointments and increased risk of depression and anxiety. These are avoidable costs and preventable conditions if AF was to be detected and diagnosed earlier. Patients experiencing long delays (as much as ten years) face issues managing employment, financial stability, family-care alongside anxiety, fear and depression. For some patients, there will also be increased risk of Heart Failure and stroke	AF Case stories: http://www.atrialfibrillation.org.uk/stories/paroxysmal_af.html http://www.atrialfibrillation.org.uk/stories/stories.html
004	Atrial Fibrillation Association	Additional developmental areas and emerging practice: Patients found to have an irregular pulse should be given an ECG within 48 hours	AF can often be paroxysmal and therefore challenging to diagnosis using a 12 Lead ECG alone. Once an irregular pulse has been detected, prompt access to an ECG to capture the heart rhythm for interrogation is essential in relieving worry, confirming diagnosis and	Across the country, access to ECG is variable. From community based devices to secondary care. It is essential that ECGs are accessible and supported by well trained and experienced healthcare practitioners who can accurately and reliably interpret an ECG reading. Quality and equity in access and interpretation is	BCJ Article: Changes in referral patterns to cardiac out-patient clinics with ambulatory ECG monitoring in general practice www.heartofaf.org: JC(2001)-C.Net2000%20study.pdf

ID	Stakeholder	Suggested key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
			subsequently appropriately managing the diagnosed condition to significantly reduce risks related to stroke, Heart Failure and anxiety/depression	an essential part of AF management	http://www.aa-international.org/files/file/Australia/Lowres%20screening%20systematic%20review%20T%20&%20H%202013.pdf
005	Atrial Fibrillation Association	Additional developmental areas and emerging practice: All stroke victims who have not been diagnosed with AF but present with ischaemic stroke or TIA for no diagnosed reason, should have their pulse checked and be monitored for AF	There is evidence to show that between 20%-30% of all strokes are attributable to AF. Patients presenting with a TIA or ischaemic stroke and undiagnosed cause, are often later found to have AF. 50% of all patients who suffer an AF-related stroke, will die within the first year. To protect it is vital that the cause is detected, and if AF is diagnosed, they are assessed and appropriately treated to reduce their risk of further AF-related strokes.	If an AF patient suffers a TIA or stroke, they are at increased risk of suffering further strokes. AF-related strokes are the most debilitating, disabling and fatal than any other stroke. Prompt detection can ensure appropriate management to reduce current and on-going risk.	There is locally collected evidence from stroke wards in the South and South East of England, that 1 in 4 of all stroke patients present in AF. Screening using a 72 hour monitor increased the detection rate for AF in ischaemic strike patients previously not diagnosed with AF by 30%. However we have not been able to source the presentation which shared this – I will submit when sourced
006	Bristol-Myers Squibb / Pfizer	Key area for quality improvement 2 Screening for Atrial Fibrillation (AF) prior to complications	10-40% of all AF patients have asymptomatic or 'silent' AF and are at significantly increased risk of stroke. Commonly, these patients' intial presentation is with the complication of an ischaemic stroke, following which AF is detected as the cause. It is important to detect AF prior to the first complication, e.g., stroke. In asymptomatic patients 65 years or older with or without risk factors for	Current NICE guidelines (CG180) recommend that manual pulse palpation to assess for an irregular pulse indicating underlying AF should be performed in patients who present with symptoms. However, this guideline does not cover detection of AF in those with asymptomatic, 'silent' AF. 10-40% of all AF patients have asymptomatic or 'silent' AF and are at significantly increased risk of stroke. The 2012 focussed update of the ESC guidelines recommend that, in patients aged 65 years or over, opportunistic screening for AF by	Camm AJ, Lip GYH, De Caterina R, et al. 2012 focused update of the ESC Guidelines for the management of atrial fibrillation. Eur Heart J. 2012;33:2719–2747. Dobreanu D et al. Europace 2013; 15; 1223-1225. NICE Clinical Guideline CG180.

ID	Stakeholder	Suggested key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
			AF, opportunistic screening by pulse palpation, followed by an ECG (+/- Holter monitoring, where appropriate) where an irregular pulse is detected to diagnose AF.	pulse palpation, followed by recording of an ECG to verify diagnosis, should be considered for the early detection of AF.	
007	London Stroke Strategic Clinical Network	1. Better identification of AF in the population through opportunistic case finding (e.g. pharmacies, general practice, dentists, NHS Health Check)	AF is often asymptomatic, but even where it is asymptomatic there is still a high risk of systemic embolism when not treated appropriately.	Data from the AF Association summarises the evidence to suggest 25-30% of patients with AF are undiagnosed.1 Identifying and treating such patients will reduce the risk of stroke by about 66%.2 GRASP-AF and QOF3 data show massive variations between general practices in terms of the incidence of recorded AF. This suggests that the effectiveness of identification varies significantly around the country.	1. The Atrial Fibrillation Association. A Guide to AF Within the Cardiovascular Disease Outcomes Strategy. Available at: http://www.heartrhythmcharity.org.uk/www/media/files/For_Patients/130905-A_Guide_to_AF_within_the_Cardiovascular_Disease_Outcomes_Strategy.pdf 2. Hart, R., Pearce, L., Aguilar, M. Meta analysis: antithrombotic therapy to prevent strokes in patients who have non-valvular atrial fibrillation. Ann Intern Med, 2007; 146, 857-867. 3. Quality and Outcomes Framework 2012-2013: England Level. Available at: http://www.hscic.gov.uk/catalogue/PUB12262
008	Medtronic Limited	Key area for quality improvement 1 Access for patients for Diagnosis and assessment of AF	Early detection and correct diagnosis of AF is fundamental to improving patient outcomes. We draw attention to the “use of event recorder ECG in those with symptomatic episodes more than 24 hours apart” from CG	This key area for quality improvement is aligned with: Domain 1. Preventing people from dying prematurely Domain 2. Enhancing Quality of life for people with long-term conditions Domain 4	NICE CG 180 1.1 Diagnosis and assessment 1.1.2 Perform an electrocardiogram (ECG) in

ID	Stakeholder	Suggested key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
			180, in particular the use of Implantable Loop Recorders with specific AF detection algorithms combined with Home Monitoring for Remote Management which monitor patients 24 hours 7 days a week for up to 3 years. Implantable Loop Recorders with specific AF detection algorithms (Medtronic Reveal XT and Medtronic Reveal Linq) provide a higher diagnostic yield for the detection of AF than Holter monitors.	Ensuring people have a positive experience of care	all people, whether symptomatic or not, in whom atrial fibrillation is suspected because an irregular pulse has been detected. [2006] 1.1.3 In people with suspected paroxysmal atrial fibrillation[3] undetected by standard ECG recording: use a 24-hour ambulatory ECG monitor in those with suspected asymptomatic episodes or symptomatic episodes less than 24 hours apart use an event recorder ECG in those with symptomatic episodes more than 24 hours apart. [2006] Camm et al "Usefulness of continuous electrocardiographic monitoring for atrial fibrillation", American Journal of Cardiology 2012 110; 270-276 "Many trials have confirmed that most paroxysmal AF (PAF) episodes are asymptomatic, many patients are completely asymptomatic and electrocardiographic (ECG) monitoring with Holter devices has limited

ID	Stakeholder	Suggested key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
					sensitivity. “Continuous monitoring of AF is a powerful tool to detect silent paroxysmal AF in patients without previously documented arrhythmic episodes such as those with cryptogenic stroke or other episodes” Hindricks et al “Performance of a New Leadless Implantable Cardiac Monitor in Detecting and Quantifying Atrial Fibrillation Results of the XPECT Trial” published in Circulation. Methods: 247 patients were implanted with an ICM and compared with core lab classification of the surface ecg. Results: The XPECT study has shown that Reveal® XT has an atrial fibrillation detection performance with 96.1% sensitivity and 97.4% negative predictive value compared with simultaneous Holter monitoring Ritter et al “Occult Atrial Fibrillation in Cryptogenic Stroke, detection by 7 day ECG v Implantable Cardiac Monitors (ICM), published in Stroke AHA Journals 2013.

ID	Stakeholder	Suggested key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
					Methods: 60 patients were included. ICM implanted 13 days after the qualifying event and 7 day Holter monitoring was applied after the implant of the ICM. Results: Intermittent AF (iAF) was detected in 17% of patients by the ICM. Only 1 patient (1.7%) had iAF detected by the Holter monitor as well. Conclusions: ICM offer a greater diagnostic yield than 7-day Holter monitoring
009	National Atrial Fibrillation Clinical Policy Forum	Key area for quality improvement 1 Detecting and diagnosing AF	There are currently insufficient levels of detection and diagnosis of AF. Without improvements taking place in this area, the AF Association and Anticoagulation Europe have warned that between a third and a half of patients affected by AF will only be diagnosed following an AF-related stroke. If preventative measures are not taken, patients with AF remain at risk of stroke at any time. It is worth noting that evidence suggests AF-related strokes are often more severe, leading to increased risk of long term disability and death. Appropriate diagnosis of AF and	Detection and diagnosis rates of AF need to be urgently reviewed, as the incidence of AF-related strokes could be reduced and outcomes for patients improved if these two areas were given greater prioritisation. As such it is important that the relevant recommendations outlined in the updated NICE Clinical Guideline on AF are emphasised by any future Quality Standard. The Department of Health's Cardiovascular Disease Outcomes Strategy: Improving outcomes for people with or at risk of cardiovascular disease states that 7,100 AF-related strokes could be prevented every year if everyone with AF was appropriately managed. Furthermore, the same report found that a total of 2,100 deaths per year could also be prevented. Improving detection and diagnosis	For data regarding poor detection and diagnosis rates, please see The AF Report, Atrial Fibrillation: Preventing a Stroke Crisis: http://www.preventaf-strokecrisis.org/files/files/The%20AF%20Report%2014%20April%202012.pdf Please see the Department of Health's Cardiovascular Disease Outcomes Strategy: Improving outcomes for people with or at risk of cardiovascular disease for data on how outcomes for patients with AF could be

ID	Stakeholder	Suggested key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
			subsequent initiation onto anticoagulation, where appropriate, will reduce the risk of an individual suffering a life changing AF-related stroke.	rates could contribute towards achieving these improved outcomes.	improved: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/214895/9387-2900853-CVD-Outcomes_web1.pdf
010	SCM 3	Key area for quality improvement 2: Record of pulse rhythm check for patients with documented chronic disease.	There is a significant proportion (estimated at approximately 30%) of patients with atrial fibrillation who are asymptomatic and therefore unaware of their risk of e.g. stroke due to undetected disease.	Most chronic diseases are acknowledged to be a contributing risk factor for the development of AF. Targeted screening of vulnerable patients at risk of AF has been shown to offer cost effective approach	The following areas for quality improvements are in line with recommendations from NICE guideline CG180 Management of Atrial Fibrillation
011	SCM 4	Key area for quality improvement 3 Optimising management of comorbidities, eg. hypertension control, heart failure, etc	AF commonly coexists with comorbidities such as hypertension and heart failure	Treating AF needs to be in a holistic manner, to include attention to comorbidities.	
4.2 Personalised package of care and information					
012	All-Party Parliamentary Group on Atrial Fibrillation	Provision of personalised package of care for people with AF	Patients with AF should be offered a personalised package of care and information. The delivery of the personalised package of care should be documented and should covers the areas as outlined in NICE Clinical Guideline 180	It is important that this recommendation, new to NICE clinical guideline 180 is recognised and implemented. Providing this will assist patients in better managing their condition.	Please see the updated NICE Clinical Guideline 180. https://www.nice.org.uk/guidance/cg180/resources/guidance-atrial-fibrillation-the-management-of-atrial-fibrillation-pdf
013	Arrhythmia Alliance	All diagnosed AF patients and cares should be offered and sign posted to reliable and patient-friendly information that is shared with the diagnosed patient	Although there are relatively effective therapies available to reduce risk and many of the physical symptoms associated with AF, quality of management is often inadequate or inappropriate, and patient adherence	As a result of low awareness monitoring one's pulse is rarely routine and diagnosis of a 'heart condition' can cause anxiety and fear 'am I going to die'. Therapy options and their roles are frequently mis-understood.	NICE CG 180 NICE PDA AF and Anticoagulation Therapeutic Patient Education:, WHO 1998 http://www.euro.who.int/__dat

ID	Stakeholder	Suggested key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
		and their carer. This should include information on the condition, treatment options, life style benefits, supportive links and patient decision making tools designed to support patient - clinician discussion	to therapy, especially anticoagulation, is a considerable concern to HCP providers. There is evidence that even in chronic conditions, patient education can improve discussion, decision-making, adherence and general health improvement.	With increased understanding, fear reduces, mis-understanding is corrected and an individual's self-management that can support early detection, adherence and liaison with a clinician when there is unexpected change or deterioration in health, benefit. NICE and the UK government have placed patient decision making at the heart of healthcare. Reliable, trusted and accessible information for all patients is essential to support improved physical and mental health outcomes in AF.	a/assets/pdf_file/0007/145294/E63674.pdf The benefits of Patient Education, Abbott SA, AF Association survey on received comments and case story findings Anecdotal AF Association gathered Patient Case Accounts AF Charter 2011: http://www.atrialfibrillation.org.uk/files/file/Events/AF%20Patient%20Charter.pdf
014	Atrial Fibrillation Association	5 All diagnosed AF patients and cares should be offered and sign posted to reliable and patient-friendly information that is shared with the diagnosed patient and their carer. This should include information on the condition, treatment options, life style benefits, supportive links and patient decision making tools designed to support patient - clinician discussion	AF is a chronic disease, and while there are relatively effective therapies available to reduce risk and many of the physical symptoms associated with AF, quality of management is often inadequate or inappropriate, and patient adherence to therapy, especially anticoagulation, is a considerable concern to HCP providers. There is evidence that even in chronic conditions, patient education can improve discussion, decision-making, adherence and general health improvement.	AF / atrial fibrillation is still a little known condition amongst the general public. As a result, monitoring one's pulse is rarely routine and diagnosis of a 'heart condition' can cause anxiety and fear 'am I going to die'. Therapy options and their roles are frequently mis-understood -"my AF is being treated with warfarin", is a common response to staff on the AFA HelpLine when discussing therapies. With increased understanding; fear reduces, mis-understanding is corrected and an individual's self-management that can support early detection, adherence and liaison with a clinician when there is unexpected change or deterioration in health, benefit. NICE and the UK government have placed patient decision making at the heart of healthcare. Reliable, trusted and accessible information for all patients is essential to support improved physical and mental health outcomes	NICE CG 180 NICE PDA AF and Anticoagulation Therapeutic Patient Education:, WHO 1998 http://www.euro.who.int/__data/assets/pdf_file/0007/145294/E63674.pdf The benefits of Patient Education, Abbott SA, AF Association survey on received comments and case story findings Anecdotal AF Association gathered Patient Case Accounts AF Charter 2011: http://www.atrialfibrillation.org.uk/files/file/Events/AF%20Patient%20Charter.pdf

ID	Stakeholder	Suggested key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
				in AF.	
015	Bayer PLC	Key area for quality improvement 5 Offering people with atrial fibrillation a personalised package of care and information recommended in clinical guideline 180. Atrial fibrillation: the management of atrial fibrillation1 Proposed quality statement People with atrial fibrillation are offered a personalised package of care and information.	o Management of atrial fibrillation may involve taking multiple medications over long periods of time, and since it has been suggested that between a half and third of all medicines prescribed for long term conditions are not taken as recommended,2,3 delivery of a personalised package of care and information may be instrumental in aiding adherence to treatment. As a key priority for implementation, NICE clinical guideline 1801 recommends offering people with atrial fibrillation a personalised package of care. Ensure that the package of care is documented and delivered, and that it covers: stroke awareness and measures to prevent stroke rate control assessment of symptoms for rhythm control who to contact for advice if needed psychological support if needed up-to-date and comprehensive education and information on: cause, effects and possible complications of atrial fibrillation management of rate and rhythm control anticoagulation practical advice on anticoagulation in	It has been reported that AF patients often exhibit little knowledge of their condition and limited understanding of the risks and benefits of their anticoagulant therapy.4 One study reported that only 49% of patients could name their condition, and only half perceived AF as a serious condition, or were aware that AF predisposes to thromboembolism. Whilst just over half (57%)of the patients were aware that the reason they were taking an anticoagulant was to prevent 'blood clots', only about 1 in 5 (19%) were aware that taking anticoagulants could prevent them from having a stroke.4	(1) National Institute for Health and Care Excellence. CG180 Atrial fibrillation: the management of atrial fibrillation. June 2014. Available from: http://www.nice.org.uk/guidance/CG180. (Last accessed: 09/10/2014). (2) Haynes RB, McDonald H, Garg AX, Montague P. Interventions for helping patients to follow prescriptions for medications. Cochrane Database Syst Rev 2002;(2):CD000011. (3) Nunes V, Neilson J. Clinical Guidelines and Evidence Review for Medicines Adherence: involving patients in decisions about prescribed medicines and supporting adherence. London: National Collaborating Centre for Primary Care and Royal College of General Practitioners. 2009. (4) Lane DA, Ponsford J, Shelley A, Sirpal A, Lip GY. Patient knowledge and perceptions of atrial fibrillation and anticoagulant

ID	Stakeholder	Suggested key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
			line with recommendation 1.3.1 in 'Venous thromboembolic diseases' (NICE clinical guideline 144) support networks (for example, cardiovascular charities).		therapy: effects of an educational intervention programme. The West Birmingham Atrial Fibrillation Project. Int J Cardiol 2006 Jun 28;110(3):354-8.
016	British Association For Nursing in Cardiovascular Care	Key area for quality improvement 2. All AF patients should be screened for anxiety and depression	There is currently some understanding of the psychological impact of AF on patients but the identification is not consistent.	Identification of anxiety and depression will indicate need for treatment. This may highlight the need for improvement in treatment pathways and need for increased psychological support which is lacking for this patient group.	Depression, Anxiety, And Quality Of Life In Patients With Atrial Fibrillation* Thrall G, Lip GH, Carroll D, Lane D. Chest. 2007;132(4):1259-1264.
017	London Stroke Strategic Clinical Network	6. Raise public awareness of atrial fibrillation	Informed patients make better decisions that suit their specific needs, resulting in both improved clinical outcomes and improved quality of life. There is evidence to suggest that adopting responsibility for a level of self-care leads to better health outcomes compared with those patients who take a passive role. Better awareness of the causes of atrial fibrillation and other cardiovascular diseases will allow willing individuals to take preventative measures against AF.	Improved patient understanding of AF can result in better access to anticoagulation therapy. A study in Nova Scotia showed that when given the same information, patients at high risk of AF placed more value on the avoidance of stroke and less value on the avoidance of bleeding than physicians who treated AF patients.1 Informed patients typically: are more involved and better follow advice are less anxious and have better wellbeing start treatment earlier are more satisfied and litigate less have lower healthcare costs due to more self-management and a better use of resources.2 Two AF risk factors are preventable: diabetes and hypertension. The prevalence of these factors is not small; national QOF data from 2012-2013 shows that 13.7% of England has hypertension and 6.0% has diabetes mellitus.3	1. PJ Devereaux et al. Differences between perspectives of physicians and patients on anticoagulation in patients with atrial fibrillation: observational study. British Medical Journal. Nov 24, 2001; 323(7323): 1218. 2. D.E. Detmer, P.D. Singleton, A. MacLeod, S. Wait, M. Taylor, and J. Ridgwell. The Informed Patient: Study Report. Cambridge University Health. March 2003. Available at: http://www.zorg20.nl/docs/Detmer_INFORMED_PATIENT_STUDY.pdf 3. Quality and Outcomes Framework 2012-2013:

ID	Stakeholder	Suggested key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
				Prevalence of both is anticipated to increase.	England Level. Available at: http://www.hscic.gov.uk/catalogue/PUB12262
018	National Atrial Fibrillation Clinical Policy Forum	Key area for quality improvement 3 Patient empowerment and understanding of all first line treatment options	There is good evidence to suggest that those patients who feel properly supported to manage their condition have better long term outcomes. In addition, ensuring people feel supported to manage their condition is explicitly mentioned in the NHS Outcomes Framework and the CCG Outcomes Indicator Set, as key a priority for the NHS. The current anticoagulation therapy options, which have been reviewed and recommended by NICE, have different characteristics, which result in differing impact on patients' lives and different treatment pathways. Healthcare professionals should therefore engage AF patients in informed discussions about all the appropriate treatment options available for stroke prevention before initiating anticoagulation. Clearly explaining all treatment options and discussing them with the patient will also reinforce the importance of anticoagulation itself and might therefore discourage them from choosing not to be initiated onto anticoagulation (as a result of not fully understanding their stroke risk or	The recently published Medicines Optimisation Dashboard (NHS England) included an uptake metric for the Non-vitamin K Oral Anticoagulants. This demonstrated significant regional variation in the uptake of these newer treatments. Anecdotal evidence suggests that many NHS organisations' prescribing protocols make it mandatory for prescribers to initiate all patients with AF at risk of stroke onto warfarin for a specified period of time, where anticoagulation for the prevention of AF-related stroke is appropriate. In these areas, patients do not have access to the full range of treatments which have been reviewed and recommended by NICE at the time of initiation, placing local organisations in breach of the NHS Constitution. In addition, warfarin may not be as suitable for certain groups of patients as other treatments and, as such, asking these patients to undergo "warfarin stress testing" might place them at risk. This was acknowledged in NICE TA 249, which stated '…[it is]…not reasonable to expect all patients to try warfarin first, with the associated risks, for the purpose of selecting out a subgroup for whom dabigatran was less cost effective.' As a result, there is a need to drive quality improvement in the area of patient education to ensure that patients with AF are fully empowered	For evidence of regional variation in access to medicines, please NHS England Medicines Optimisation Dashboard: http://www.england.nhs.uk/ourwork/pe/mo-dash/ For evidence on the value of shared decision making, please see the Health Foundation, Helping people share decision making. A review of evidence considering whether shared decision making is worthwhile: http://www.health.org.uk/public/cms/75/76/313/3448/HelpingPeopleShareDecisionMaking.pdf?realName=rFVU5h.pdf Please see NICE Clinical Guideline 180 for recommendations regarding appropriate treatment for stroke prevention in AF: https://www.nice.org.uk/guida

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			the impact on lifestyle etc). The updated NICE Clinical Guideline emphasises that clinicians should discuss all the options for anticoagulation with the person and base the choice on their clinical features and preferences. It also recommends that anticoagulation may be with apixaban, dabigatran etexilate, rivaroxaban or a vitamin K antagonist.	to discuss all their treatment options and to base their choice on clinical features and preferences. This would ensure that their choice is not restricted by local protocols that appear to go against NICE guidance.	nce/cg180/resources/guidance-atrial-fibrillation-the-management-of-atrial-fibrillation-pdf Please see NICE TA 249 Dabigatran etexilate for the prevention of stroke and systemic embolism in atrial fibrillation: http://www.nice.org.uk/guidance/ta249
019	SCM 4	Key area for quality improvement 5 Education and counselling, as part of a package of care for AF patients	Patients need to involved in management decisions given the long term nature of this condition.	Patients attitudes often ignored, for example, balancing stroke and bleeding risks for OAC decisions. See LaHaye et al Thromb Haemostat 2014	TREAT randomised trial – Clarkesmith et al PLoS One 2013 http://www.ncbi.nlm.nih.gov/pubmed/24040156
020	Stroke Association	Offer patients with atrial fibrillation a personalised package of care	As recommended within the NICE guidance, the preferences and circumstances of each individual patient should be considered as part of their package of care. This should extend to include other risk factors for stroke.	Patients should feel supported to manage their condition, having made an informed decision in collaboration with their health care professional.	CG180 Atrial fibrillation: the management of atrial fibrillation CG180 Atrial fibrillation (update): patient decision aid
021	UCLPartners Academic Health Science Network	Additional developmental areas of emergent practice Provision made to provide reliable and patient-friendly information that is shared with the diagnosed patient and their carer and this should include information	This is important to support the individual's personal understanding and subsequent management of AF, including therapy choice and adherence to therapy. There is anecdotal and documented evidence (through PROMS and PREMS) that supportive, information and shared	AF Association survey found that over 80% of all patient enquiries and shared case accounts, indicated the lack of shared information and sign posting to reliable sources. This caused distress, worry and mis-understanding over the condition, its risks and of therapies offered, as well as available. All members surveyed indicated that shared discussion and receiving informative and	NICE CG180, NICE PDA AF and Anticoagulation (2014), The benefits of Patient Education, Abbott SA, AF Association Patient Survey, AF Association gathered Patient Case Accounts http://www.atrialfibrillation.org

ID	Stakeholder	Suggested key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
		on the condition, treatment options, life style benefits, supportive links and a patient decision making tool as listed in NICE CG180 and exampled in NICE PDA AF and Anticoagulation (2014)	decision making tools reduce anxiety and subsequent depression and support better outcomes for the individual's emotional, mental and physical health and well-being.	helpful information, helped them to better understand and subsequently, better manage AF.	.uk/files/file/Events/AF%20Patient%20Charter.pdf
4.3 Referral for specialised management					
022	All-Party Parliamentary Group on Atrial Fibrillation	Referral of patients at any stage for specialist consideration within four weeks of presenting symptomatic AF	As acknowledged in NICE Clinical Guideline 180 under 'Referral for specialised management', patients should received a prompt referral to a specialist upon acute onset of conditions or when unresponsive to treatment. It is important that patients are giving timely access to specialist care in order to best manage their condition.	The recommendation to *'refer people promptly at any stage if treatment fails to control the symptoms of AF and more specialised management is needed'* was a new inclusion in the recently published NICE Clinical Guideline 180.	Please see the updated NICE Clinical Guideline 180. https://www.nice.org.uk/guidance/cg180/resources/guidance-atrial-fibrillation-the-management-of-atrial-fibrillation-pdf
023	Arrhythmia Alliance	All AF patients should be promptly referred to an appropriate AF specialists (as defined in NICE CG 180) at any stage if treatment fails to control the symptoms or risks associated with atrial fibrillation and thus specialised review and management is needed. (no longer than four week)		To ensure that patients who do not respond well to first line rate / rhythm management, which is also most likely to affect their daily health and well being, receive rapid referral to AF specialist practitioners (as described and listed in NICE CG180) in order to improve outcome and decrease impact on quality of life and well-being due to AF symptoms. That patients who are medically complex and challenging to manage – including those with complex anticoagulation considerations, receive prompt and appropriate management from specialist services / consultant.	NICE CG180
024	Atrial Fibrillation	Additional developmental	When therapy is ineffective,	To ensure that patients who do not respond well	NICE CG180

ID	Stakeholder	Suggested key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
	Association	areas and emerging practice: All AF patients should be promptly referred to an appropriate AF specialists (as defined in NICE CG 180) at any stage if treatment fails to control the symptoms or risks associated with atrial fibrillation and thus specialised review and management is needed. (no longer than four week)	symptoms persist and are debilitating or co-morbidities complex the management of a diagnosed AF patient. The patient needs to be referred to specialist services for rapid assessment and support to effectively manage the condition.	to first line rate / rhythm management, which is also most likely to affect their daily health and well being, receive rapid referral to AF specialist practitioners (as described and listed in NICE CG180) in order to improve outcome and decrease impact on quality of life and well-being due to AF symptoms. That patients who are medically complex and challenging to manage – including those with complex anticoagulation considerations, receive prompt and appropriate management from specialist services / consultant.	AFA AF Patient Charter 2011
025	British Association For Nursing in Cardiovascular Care	Key area for quality improvement 1. All Atrial Fibrillation patients are referred to an arrhythmia specialist nurse.	Personalised care plans are recommended within NICE guidance for management of acute, chronic and paroxysmal atrial fibrillation. Arrhythmia specialist nurses have to knowledge, skills and expertise to deliver personalised care.	The management of AF requires individualised care, tailoring rate or rhythm control and anticoagulation therapy. Patients require education and support to explore treatment options, nurses are an important element in providing that care. Arrhythmia specialist nurses help to improve the patient experience, adherence and implementation to treatment guidelines and reduce readmission rates.	M127S Evaluation of the British Heart Foundation Arrhythmia Care Co-ordinator Services: Executive Summary. http://dx.doi.org/10.1093/eurheartj/eht096
026	Medtronic Limited	Key area for quality improvement 2 Equitable Access for all patients to prompt referral for specialised management Medtronic suggests that a QOF indicator for primary care physicians will drive prompt referral as defined by the GDG (The Guideline	Clinical Guidance CG 180 recognises the importance of prompt referral “if treatment fails to control the symptoms of atrial fibrillation and more specialised management is needed”.	This key area for quality improvement is aligned with: Domain 1. Preventing people from dying prematurely Domain 2. Enhancing Quality of life for people with long-term conditions Domain 4 Ensuring people have a positive experience of care	NICE CG 180

ID	Stakeholder	Suggested key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
		Development Group defined 'promptly' as no longer than 4 weeks after the final failed treatment or no longer than 4 weeks after recurrence of atrial fibrillation following cardioversion when further specialised management is needed			
027	SCM 2	Key area for quality improvement 4 Access to PVI and ablation	Patients who are symptomatic of AF need to see a specialist in rhythm management however ablation procedures are very variable in the atlas of variation and this raises concern about parochial health politics around patient access to tertiary care services	We have specified in the CG180 that patients should expect a referral to a specialist within 4 weeks if rate control has not improved the symptoms of the AF and I feel we meant this to be an EP service but worry we have left this very ambiguous so will be ignored. There is a wider view here around workforce and appropriate specialist review	Recommendation of NICE CG180
028	SCM 1	Prompt referral Assessment of prompt referral (in accordance with recommendation 1.3.1) amongst patients in whom treatment has failed to control the symptoms of AF and more specialist management is needed.	The management pathway for the rate and rhythm management of AF is symptom led, with escalating management options of increasing complexity whose initiation is based on failure of simpler options. As a result the management pathway can be particularly long and complex. It is important that inappropriate referral delays do not further prolong the pathway.	The ultimate management for many patients with AF is left atrial ablation. Success of ablation procedures is lower in patients with persistent than with paroxysmal AF and also decreases with increasing duration of persistent AF. Added delays in the pathway may therefore adversely affect the eventual outcome of ablation treatments.	Anecdotal conversation with patients with AF often reveals their frustration at the length of time it has taken to progress through all the options on the rate and rhythm management pathway. This can be further prolonged by delays in the referral process. It is important to focus the attention of commissioners on this issue in order to minimise referral delays.
029	UCLPartners	Additional developmental	Addressing patient need and the	Ensuring that patients have access to optimal	NICE CG180

ID	Stakeholder	Suggested key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
	Academic Health Science Network	areas of emergent practice Prompt referral to specialists (as defined in NICE CG 180) at any stage if treatment fails to control the symptoms of atrial fibrillation and more specialised management is needed. (no longer than four weeks)	impact of symptoms on quality of life and well-being.	management to decrease impact on quality of life and well-being due to AF symptoms.	
4.4 Assessment of stroke and bleeding risks					
030	All-Party Parliamentary Group on Atrial Fibrillation	Use of CHA_2DS_2VASc risk scoring aid	The CHA2DS2-VASc scoring scheme has been shown to outperform the CHADS2 in identifying truly low-risk patients with AF, and is comparable at identifying high risk patients. NICE Clinical Guideline 180 moved from CHADS2 to CHA2DS2-VASc, a decision welcomed by APGAF.	There is often regional variation in how patients are being risk stratified. In areas where there has been concentration on AF management CHA2DS2-VASc is being used and in other areas CHADS2 is being used. This leads to variation in patient care. Currently, the QOF encourages GPs to use CHADS2. This should be updated to reflect the recommendations of the most recent guidance (NICE Clinical Guideline 180)	Please see the updated NICE Clinical Guideline 180 for the recommendation to move from CHADS2 to CHA2DS2-VASc: https://www.nice.org.uk/guidance/cg180/resources/guidance-atrial-fibrillation-the-management-of-atrial-fibrillation-pdf
031	Arrhythmia Alliance	Patients diagnosed with AF should be assessed for their AF-stroke risk using CHA2DS2VASc and receive regular CHA2DS2VASc review. This should be at least annually, and always following any change in their health, or diagnosed conditions	In line with NICE CG180 and published evidence, CHA2DS2VASc is more effective in identifying diagnosed AF patients at risk of AF-related stroke. Currently QOF indicates the use of CHADS2 resulting in a considerable risk of some AF patients' stroke-risk being underestimated and result in them being inappropriately managed. Age is one of the listed risk factors for	The discrepancy needs to be corrected. QS in AF should support and re-iterate the most up to date guidance issued by NICE (CG 180) and ESC 2012, in which both advocate CHA2DS2VASc. AF-stroke risk increases with age and onset of some other chronic conditions – even of those conditions are appropriately and effectively managed, the AF-stroke risk is affected. Therefore, to avoid preventable TIA and AF-stroke events, it is essential that all AF patients	NICE CG180 ESC updated AF Guidelines 2012 QOF AF NICE PDA AF and Anticoagulation GRASP-AF AF Report, 2011

ID	Stakeholder	Suggested key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
			AF-stroke and included in the risk scoring aid, CHA2DS2VASc All diagnosed patients should therefore receive at least an annual review for consideration of the AF-stroke risks. If their health changes at any time – for example, becoming hypertensive / having a TIA / developing diabetes, then they should very promptly re-assessed using CHA2DS2VASc	are regularly reviewed.	
032	Atrial Fibrillation Association	2 Patients diagnosed with AF should be assessed for their AF-stroke risk using CHA2DS2VASc and receive regular CHA2DS2VASc review. This should be at least annually, and always following any change in their health, or diagnosed conditions	In line with NICE CG180 and published evidence, CHA2DS2VASc is more effective in identifying diagnosed AF patients at risk of AF-related stroke. Currently QOF indicates the use of CHADS2, resulting in a considerable risk of some AF patients' stroke-risk being underestimated and result in them being inappropriately managed. Age is one of the listed risk factors for AF-stroke and included in the risk scoring aid, CHA2DS2VASc All diagnosed patients should therefore receive at least an annual review for consideration of their AF-stroke risks. If their health changes at any time – for example, becoming hypertensive / having a TIA / developing diabetes, then they should very promptly re-assessed using CHA2DS2VASc	The discrepancy needs to be corrected. QS in AF should support and re-iterate the most up to date guidance issued by NICE (CG 180) and ESC 2012, in which both advocate CHA2DS2VASc. AF-stroke risk increases with age and onset of some other chronic conditions – even of those conditions are appropriately and effectively managed, the AF-stroke risk is affected. Therefore, to avoid preventable TIA and AF-stroke events, it is essential that all AF patients are regularly reviewed.	NICE CG180 ESC updated AF Guidelines 2012 QOF AF NICE PDA AF and Anticoagulation GRASP-AF AF Report, 2011
033	Bayer PLC	Key area for quality	· The use of stratification	The ESC guidelines on the management of atrial	(1) National Institute

ID	Stakeholder	Suggested key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
		improvement 2 The use of the CHA2DS2-VASc stratification score to assess stroke risk as recommended in clinical guideline 180. Atrial fibrillation: the management of atrial fibrillation1 Proposed quality statement People with atrial fibrillation, atrial flutter or a continuing risk of arrhythmia recurrence after cardioversion back to sinus rhythm are assessed for stroke risk using the CHA2DS2-VASc stroke risk score.	tools help guide management decisions and ensure that the risk/benefit balance is appropriately considered. As a key priority for implementation, the NICE clinical guideline on the management of atrial fibrillation recommends using the CHA2DS2-VASc stroke risk score to assess stroke risk in people with any of the following: symptomatic or asymptomatic paroxysmal, persistent or permanent atrial fibrillation atrial flutter a continuing risk of arrhythmia recurrence after cardioversion back to sinus rhythm.	fibrillation (2012)2 mention that “many patients classified as ‘low-risk’ using CHADS2 (score = 0) have stroke rates >1.5%/year, and a CHADS2 score of 0 does not reliably identify AF patients who are ‘truly low-risk’.” The guideline also states that “CHA2DS2-VASc is better at identifying ‘truly low-risk’ patients with AF and is as good as, and possibly better than, scores such as CHADS2 in identifying patients who develop stroke and thromboembolism.”2	for Health and Care Excellence. CG180 Atrial fibrillation: the management of atrial fibrillation. June 2014. Available from: http://www.nice.org.uk/guidance/CG180. (Last accessed: 09/10/2014). (2) Camm AJ, Lip GY, De CR, Savelieva I, Atar D, Hohnloser SH, et al. 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 2012 Nov;33(21):2719-47.
034	Bristol-Myers Squibb / Pfizer	Key area for quality improvement 3 Review all patients on register with AF using the CHA2DS2-VASc score to identify thromboembolic risk, and the HAS-BLED score to identify bleeding risk, and treat appropriately	The CHA2DS2-VASc score is better at identifying ‘truly low-risk’ patients with AF who do not require any treatment, and is as good as - and possibly better than - scores such as CHADS2 in identifying patients who are at risk of developing stroke and thromboembolism. The CHA2DS2-VASc score is inclusive of the most common stroke risk factors in	Ongoing use of the $CHADS_2$ scoring system suggests inappropriate risk stratification and therefore difficulty identifying truly low risk patients, meaning inappropriate treatment of some and under-treatment of others.	Camm AJ, Lip GYH, De Caterina R, et al. 2012 focused update of the ESC Guidelines for the management of atrial fibrillation. Eur Heart J. 2012;33:2719–2747. NICE Clinical Guideline CG180

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			everyday clinical practice.		
035	Royal College of Physicians of Edinburgh	Key area for quality improvement 1 Use of the CHA2DS2-VASc score to assess stroke risk in patients with atrial fibrillation	The CHA_2DS_2-VASc score is recommended by the current NICE guidelines as the stroke risk assessment tool of choice for patients with atrial fibrillation.	The CHA_2DS_2-VASc score can identify patients at very low-risk of stroke (CHA_2DS_2-VASc score =0 for men and CHA_2DS_2-VASc score = 1 for women) in whom the most appropriate antithrombotic treatment is no therapy. For men with a CHA_2DS_2-VASc score ≥1 and women with a CHA_2DS_2-VASc score ≥2, oral anticoagulation should be considered. Currently, many clinicians are still using the $CHADS_2$ score to assess stroke risk and may be incorrectly deciding that all those with a $CHADS_2$ score of 0 are low risk of stroke and not prescribing appropriate antithrombotic therapy. The CHA_2DS_2-VASc score identifies more patients who may benefit from oral anticoagulant therapy (reduction in stroke risk). Use of the CHA_2DS_2-VASc score has also been shown to be cost-effective by NICE.	Please see the 2014 NICE guidelines on Atrial Fibrillation http://www.nice.org.uk/guidance/CG180 and Scottish Intercollegiate Guidelines Network (2013) http://sign.ac.uk/guidelines/fulltext/129/index.html and the European Society of Cardiology 2012 Focussed Update http://www.escardio.org/guidelines-surveys/esc-guidelines/GuidelinesDocuments/Guidelines_Focused_Update_Atrial_Fib_FT.pdf
036	SCM 3	Key area for quality improvement 3: Record of stroke risk assessment and bleeding risk with documented recording of CHADSVASc & HASBLED Scores	Stroke risk assessment using the CHADSVASc and bleeding risk assessment using the HASBLED tool helps to qualify the level of risk of the individual and identify factors that may be addressed to improve safety of therapies.	Stroke risk assessment using previous CHADS2 has been superseded by CHADSVASc with the addition of bleeding risk assessment using HASBLED tool which previously was not formally acknowledged by NICE	The following areas for quality improvements are in line with recommendations from NICE guideline CG180 Management of Atrial Fibrillation
037	SCM 4	Key area for quality improvement 2 Application of the CHA2DS2-VASc score for risk stratification – initially	Rather than a focus on identifying high risk patients (and lots of evidence showing undertreatment of such patients) we should use the CHA2DS2-VASc score recommended by the NICE	Many local recommendations still focus on identification of high risk patients for OAC	

ID	Stakeholder	Suggested key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
		identify the low risk (score=0 for men, 1 for females) who do not need antithombotic therapy, then offer stroke prevention (essentially oral anticoagulation, OAC) to those with ≥1 stroke risk factors	guidelines to initially identify low risk patients (STEP 1) then subsequently offer stroke prevention to those with ≥1 stroke risk factors (STEP 2).		
038	UCLPartners Academic Health Science Network	Use of CHADSVASc score over CHADS2 score	There is evidence that CHADSVASc is more sensitive than CHADS2 (ESC, 2012) and therefore picks up more patients who would benefit from anticoagulation and thus its use will prevent a greater number of strokes.	Currently QOF encourages GPs to use CHADS2. This means that there is a discrepancy over the country as to how patients are being risk stratified. In areas where there has been concentration on AF management CHADSVASc is being used and in other areas CHADS2 is being used. This leads to inequality in patient care.	Here is the QOF guidance: http://bma.org.uk/practical-support-at-work/contracts/independent-contractors/qof-guidance
039	UCLPartners Academic Health Science Network	Patients with AF should have their other stroke risk factors managed effectively i.e. hypertension, hypercholesterolemia, diabetes amongst others	Patients with AF have a higher risk of stroke. Improving all their risk factors will decrease this risk rather than just concentrating on anticoagulation.	This will mean fewer strokes in this high-risk population.	NICE AF 2014
4.5 Interventions to prevent stroke: Anticoagulation					
040	All-Party Parliamentary Group on Atrial Fibrillation	Ensuring patients starting on, or reviewing, anticoagulation treatment for AF have access to all options including warfaring and NOACs	As reflected in the recent NICE guideline, there is a clear benefit from offering patients appropriate anti-coagulation. NICE technology appraisals also indicate that NOACs and warfarin are cost effective in preventing AF-related stroke. However across the country there is	There are a number of instances where patients are not offered a NOAC if they decline warfarin. This is primarily due to cost concerns and in some instances CCGs are implementing guidelines which supersede NICE guidance. This has the result of patients not receiving appropriate anti-coagulation, contrary to advice within NICE Clinical Guideline 180.	Please see evidence of the fact that warfarin and NOACs are not being considered equal in North Central London: http://ncl-jfc.org.uk/uploads/3/2/0/9/3209562/summary_treatment_pathway_af_noac__2_10_13__f

ID	Stakeholder	Suggested key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
			wide spread inequality of access to or consideration for any anticoagulation therapy other than warfarin.	It is therefore important that the Quality Standard looks to address this issue.	inal.pdf
041	Arrhythmia Alliance	Patients being commenced on anticoagulation should have access to all options including warfarin and NOACs	NICE issued guidance on anticoagulation for AF listing four anticoagulants, however across the country there is wide spread inequality of access to or consideration for any anticoagulation therapy other than warfarin. No one therapy will suit everyone, and each therapy needs to be considered with HCP-patient discussion involving a patient's medical needs, safety, suitability, lifestyle and patient preference to maximise effectiveness and adherence.	Variability in access levels across the country (0%-20%) prescribing of NOACs reflect current barriers to an individual accessing appropriate, effective and safe therapy. In some areas, if an AF patient declines warfarin, they are not offered any alternative (NOAC), and so remain at increased risk of AF-stroke. Quality standards should support full consideration of all approved therapies so that the most appropriate one for the individual can be decided and initiated.	Evidence shared by UCL Partners in North Central London: http://ncl-jfc.org.uk/uploads/3/2/0/9/3209562/summary_treatment_pathway_af_noac__2_10_13__final.pdf FOI request by All Part Parliamentary Group on AF and anticoagulation options and policies, 2013 Anecdotal evidence received from AF patients can be provided by AF Association
042	Atrial Fibrillation Association	4 Patients being commenced on anticoagulation should have access to all options including warfarin and NOACs	NICE has issued guidance on anticoagulation for AF listing four anticoagulants, however across the country there is wide spread inequality of access to or consideration for any anticoagulation therapy other than warfarin. No one therapy will suit everyone, and each therapy needs to be considered with HCP-patient discussion involving the patient's medical needs, safety, suitability, lifestyle and patient preference to maximise effectiveness and	Variability in access levels across the country (0%-20%) prescribing of NOACs reflect current barriers to an individual accessing appropriate, effective and safe therapy. In some areas, if an AF patient declines warfarin, they are not offered any alternative (NOAC), and so remain at increased risk of AF-stroke. Quality standards should support full consideration of all approved therapies so that the most appropriate one for the individual can be decided and initiated.	Evidence shared by UCL Partners in North Central London: http://ncl-jfc.org.uk/uploads/3/2/0/9/3209562/summary_treatment_pathway_af_noac__2_10_13__final.pdf FOI request by All Part Parliamentary Group on AF and anticoagulation options and policies, 2013 Anecdotal evidence received

ID	Stakeholder	Suggested key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
			adherence.		from AF patients can be provided by AF Association
043	Bayer PLC	Key area for quality improvement 1 The uptake of anticoagulation in accordance with clinical guideline 180. Atrial fibrillation: the management of atrial fibrillation1 Proposed quality statement People with a CHA2DS2-VASc score of 2 or above are offered anticoagulation taking bleeding risk into account	As acknowledged in the full NICE clinical guideline,2 “stroke prevention is of crucial importance in the management of atrial fibrillation.” As ‘key priorities for implementation’, the NICE clinical guideline on the management of atrial fibrillation recommends offering anticoagulation to people with a CHA2DS2-VASc score of 2 or above, taking bleeding risk into account, and does not recommend offering aspirin monotherapy solely for stroke prevention to people with atrial fibrillation.	The introduction to the full NICE clinical guideline,2 acknowledges that there is a “shortfall in the prescribing of anticoagulants in patients with AF” mentioning that “only 55% of patients with known AF fulfilling the 2006 criteria for anticoagulation therapy actually receive it”. It has also been suggested that the reasons for this shortfall are “not adequately explained by either bleeding risks or co-morbidities” and therefore that “the attitude of healthcare professionals and perceived risks of anticoagulation may be a major factor limiting uptake.” “The shortfall in the prescribing of anticoagulants to patients with AF was clearly seen in the Sentinel Stroke National Audit Programme of the Royal College of Physicians. Of 11,939 patients admitted with stroke to hospitals in England, Wales and Northern Ireland in the first 3 months of 2013, approximately one fifth were in AF on admission. Of these only 36% were receiving an anticoagulant. Yet 38% were on an antiplatelet drug as sole antithrombotic therapy and 26 % were on no antithrombotic treatment.”2 A recent study investigating use of anticoagulants in the management of atrial fibrillation among 1857 general practices in England also suggested that there is “an over-reliance on anti-platelets for stroke prevention in AF” showing that 36.2% of AF patients with CHADS2≥2 were prescribed anti-platelets	(1) National Institute for Health and Care Excellence. CG180 Atrial fibrillation: the management of atrial fibrillation. June 2014. Available from: http://www.nice.org.uk/guidance/CG180. (Last accessed: 09/10/2014). (2) National Clinical Guideline Centre commissioned by the National Institute for Health and Care Excellence. Atrial fibrillation: the management of atrial fibrillation. Clinical guideline, Methods evidence and recommendations. June 2014. Available from: http://www.nice.org.uk/guidance/cg180/resources/cg180-atrial-fibrillation-update-full-guideline3. (Last accessed: 09/10/2014). (3) Cowan C, Healicon R, Robson I, Long WR, Barrett J, Fay M, et al. The use of anticoagulants in the management of atrial fibrillation among general practices in England. Heart

ID	Stakeholder	Suggested key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
				without anticoagulation.3	2013 Aug;99(16):1166-72. Also: Apixaban for preventing stroke and systemic embolism in people with non-valvular atrial fibrillation. NICE technology appraisal guidance 275 (2013). Dabigatran etexilate for the prevention of stroke and systemic embolism in atrial fibrillation. NICE technology appraisal guidance 249 (2012). Rivaroxaban for the prevention of stroke and systemic embolism in people with atrial fibrillation. NICE technology appraisal guidance 256 (2012). The Sentinel Stroke National Audit Programme of the Royal College of Physicians. Available from: https://www.rcplondon.ac.uk/projects/sentinel-stroke-national-audit-programme. (Last accessed: 09/10/2014).
044	Bayer PLC	Key area for quality improvement 3 Assessing anticoagulation control with vitamin K antagonists as recommended in clinical	It is essential to monitor patients on vitamin k antagonists to ensure that they maintain an INR between 2 and 3 as acknowledged in the recommendations and links to evidence section of the full clinical	A systematic review and meta-analysis that investigated the relationship between time spent in the recommended target INR range and the intensity of anticoagulation monitoring found that pooled mean time in INR range was 59.1% (95% CI: 55.5, 62.8%) for infrequent monitoring as	(1) National Institute for Health and Care Excellence. CG180 Atrial fibrillation: the management of atrial fibrillation. June 2014. Available from:

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		guideline 180. Atrial fibrillation: the management of atrial fibrillation1 Proposed quality statement People taking vitamin K antagonists have their time in therapeutic range (TTR) calculated using a validated method of measurement at each visit	guideline,2 which states “It is important to achieve these acceptable INR levels as if it is lower there is risk of stroke and if it is higher then there is a risk of a major bleed. The best way to measure this is time in therapeutic range (TTR) and studies have linked an increase in TTR to improved outcomes.” As a key priority for implementation, the NICE clinical guideline on the management of atrial fibrillation recommends calculating the person’s time in therapeutic range (TTR) at each visit. When calculating TTR: use a validated method of measurement such as the Rosendaal method for computer-assisted dosing or proportion of tests in range for manual dosing exclude measurements taken during the first 6 weeks of treatment calculate TTR over a maintenance period of at least 6 months.	compared to 64.3% (95% CI: 60.5, 68.0%) for frequent monitoring.3 This systematic review demonstrated significant variability in the quality of anticoagulation control depending on how monitoring is approached.3	http://www.nice.org.uk/guidance/CG180. (Last accessed: 09/10/2014). (2) National Clinical Guideline Centre commissioned by the National Institute for Health and Care Excellence. Atrial fibrillation: the management of atrial fibrillation. Clinical guideline, Methods evidence and recommendations. June 2014. Available from: http://www.nice.org.uk/guidance/cg180/resources/cg180-atrial-fibrillation-update-full-guideline3. (Last accessed: 09/10/2014). (3) Dolan G, Smith LA, Collins S, Plumb JM. Effect of setting, monitoring intensity and patient experience on anticoagulation control: a systematic review and meta-analysis of the literature. Curr Med Res Opin 2008 May;24(5):1459-72.
045	Bayer PLC	Key area for quality improvement 4 Evaluation and discussion of the risks and benefits of alternative stroke prevention strategies in people with poor	In people taking vitamin k antagonists it is important to maintain good anticoagulation control A study of a cohort of AF patients aged 40 years and older included in the UK General Practice Research Database revealed that patients who	Several UK publications have investigated the TTR achieved in AF patients, and the majority of these quote figures between 62 and 68% TTR.3-9 However, one study showed that division of the patients into quartiles based on proportion of time spent in target range highlighted that these	(1) National Institute for Health and Care Excellence. CG180 Atrial fibrillation: the management of atrial fibrillation. June 2014. Available from: http://www.nice.org.uk/guidan

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		anticoagulation control which cannot be improved, as recommended in clinical guideline 180. Atrial fibrillation: the management of atrial fibrillation1 Proposed quality statement People with poor anticoagulation control that cannot be improved have a documented evaluation and discussion of the risks and benefits of alternative stroke prevention strategies	spent at least 70% of time within therapeutic range had a 79% reduced risk of stroke compared to patients with ≤30% of time in range.2 The clinical guideline suggests that poor anticoagulation control is shown by any of the following: 2 INR values higher than 5 or 1 INR value higher than 8 within the past 6 months 2 INR values less than 1.5 within the past 6 months TTR less than 65%, and that anticoagulation should be reassessed in these people taking into account, and if possible addressing factors that may contribute to poor anticoagulation control. If poor anticoagulation control cannot be improved, the risks and benefits of alternative stroke prevention strategies should be evaluated and discussed with the person.	average figures disguised a wide variation in the time spent out of target range. On average, patients in the quartile with worst control were out of target range for 71.6% of the time, as compared with 16.3% in the best controlled quartile.7 As suboptimal control is associated with poor outcomes, it is important that where this cannot be improved, the risks and benefits of alternative stroke prevention strategies should be evaluated and discussed with the person.	ce/CG180. (Last accessed: 09/10/2014). (2) Gallagher AM, Setakis E, Plumb JM, Clemens A, van Staa TP. Risks of stroke and mortality associated with suboptimal anticoagulation in atrial fibrillation patients. Thromb Haemost 2011 Nov;106(5):968-77. (3) Abdelhafiz AH, Wheeldon NM. Results of an open-label, prospective study of anticoagulant therapy for atrial fibrillation in an outpatient anticoagulation clinic. Clin Ther 2004;26(9):1470-8. (4) Burton C, Isles C, Norrie J, Hanson R, Grubb E. The safety and adequacy of antithrombotic therapy for atrial fibrillation: a regional cohort study. Br J Gen Pract 2006;56(530):697-702. (5) Copland M, Walker ID, Tait RC. Oral anticoagulation and hemorrhagic complications in an elderly population with atrial fibrillation. Arch Intern Med 2001;161(17):2125-8. (6) Evans A, Perez I, Yu G, Kalra L. Should stroke

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					subtype influence anticoagulation decisions to prevent recurrence in stroke patients with atrial fibrillation? Stroke 2001;32(12):2828-32. (7) Jones M, McEwan P, Morgan CL, Peters JR, Goodfellow J, Currie CJ. Evaluation of the pattern of treatment, level of anticoagulation control, and outcome of treatment with warfarin in patients with non-valvar atrial fibrillation: a record linkage study in a large British population. Heart 2005;91(4):472-7. (8) Mant J, Hobbs FD, Fletcher K, Roalfe A, Fitzmaurice D, Lip GY, et al. Warfarin versus aspirin for stroke prevention in an elderly community population with atrial fibrillation (the Birmingham Atrial Fibrillation Treatment of the Aged Study, BAFTA): a randomised controlled trial. Lancet 2007;370(9586):493-503. (9) Yousef ZR, Tandy SC, Tudor V, Jishi F, Trent RJ, Watson DK, et al. Warfarin for non-rheumatic atrial fibrillation: five year

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					experience in a district general hospital. Heart 2004;90(11):1259-62.
046	Bristol-Myers Squibb / Pfizer	Key area for quality improvement 4 In those male patients with atrial fibrillation whose latest record of a CHA2DS2-VASc score is 1, the percentage of these male patients who are considered for anti-coagulation drug therapy. In those patients with atrial fibrillation whose latest record of a CHA2DS2-VASc score is 2 or above, the percentage of patients who are currently treated with anti-coagulation drug therapy.	NICE CG180 update 2014 states: 1.5.2 Consider anticoagulation for men with a CHA2DS2-VASc score of 1. Take the bleeding risk into account. 1.5.3 Offer anticoagulation to people with a CHA2DS2-VASc score of 2 or above, taking bleeding risk into account.	Appropriate risk stratification is important for the prevention of stroke in patients with AF.	NICE Clinical Guideline CG180
047	Bristol-Myers Squibb / Pfizer	Key area for quality improvement 6 Use of NOACs in clinical practice compared with VKAs.	Evidence shows NOACs offer better efficacy, safety and convenience to AF patients than the use of VKAs. Despite this, the number of GP prescriptions for VKAs in the UK is much greater than for NOACs. This has a negative impact on the quality of patient care.	NOACs are broadly considered preferable to warfarin due to their better efficacy, safety and convenience compared with VKAs.	Camm AJ, Lip GYH, De Caterina R, et al. 2012 focused update of the ESC Guidelines for the management of atrial fibrillation. Eur Heart J. 2012;33:2719–2747.

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		Geographical variation in use of NOACs across the United Kingdom	NICE has issued guidance for the NOACs, recommending them as an alternative option to warfarin in NVAF patients. Assessing the geographical variation in use of NOACs helps show how effectively NICE guidance is being implemented.	Given the prevalence of NVAF, broadly similar levels of dynamic NOAC use (new, switch, add-on prescriptions) would be expected across the country. However, while the national average of NOAC prescriptions of all anticoagulation prescriptions is 8%, this varies considerably between different PCOs, ranging from 0.9% to 29.2%. The quality of patient care is likely to be lower in areas where NOACs are not so widely used. The Quality Standard should seek to establish a minimum use of NOACs that constitutes good clinical practice.	IMS data, DRx, MAT 30 June 2014, Rx share (market defined to comprise warfarin, NOACs, and aspirin 75mg [factored to account for its use in cardioprotection])
048	Bristol-Myers Squibb / Pfizer	Key area for quality improvement 7 Assessing anticoagulation control and providing annual data of TTR (time in therapeutic range) in VKA treated patients.	Assessing anticoagulation control and providing annual data of TTR (time in therapeutic range) in VKA treated patients is important to ensure adequate stroke prevention. Intolerance or poor INR control (TTR<70%) should prompt the use of self-monitoring systems to improve control, or the use of an alternative anticoagulant if appropriate e.g., a NOAC (but not use of aspirin).	The quality of anticoagulation therapy varies widely across the country resulting in sub-optimal stroke prevention in patients with AF. Reducing variation by improving anticoagulation services is expected to reduce the morbidity and mortality associated with stroke. The NHS Improvement - Heart – Anticoagulation for Atrial Fibrillation overview (2011) states that 'anticoagulation services vary in quality and effectiveness across the country and there are many people not being prescribed anticoagulation when indicated, and many receiving sub-optimal therapy.'	Cardiovascular disease outcomes strategy: improving outcomes for people with or at risk of cardiovascular disease. Department of Health (2013). The NHS Improvement – Heart – Anticoagulation for Atrial Fibrillation overview (2011) Stott DJ, Dewar RI, et al., RCPE UK Consensus Conference on 'Approaching the comprehensive management of atrial fibrillation: evolution or revolution?, The Journal of

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					the Royal College of Physicians of Edinburgh, 2012, Vol. 42, Suppl. 18
049	London Stroke Strategic Clinical Network	2. Providing effective treatment for known cases of AF	Approximately 20% of strokes are directly attributable to AF and these strokes are often more debilitating. Compared to non-AF patients, AF patients are: five times more likely to have a stroke more likely to be more disabled after surviving a stroke more likely to suffer a reoccurrence of stroke1 When appropriately used and monitored, anticoagulation therapy in AF patients reduces the risk of stroke by two-thirds.2	Many patients not receiving anticoagulation use anti-platelets, which is not recommended for AF patients as it increases the risk of a bleed in line with warfarin, but does not sufficiently decrease the risk of a stroke.3,4 Currently over one-third of patients in England with AF and known risk factors who are eligible for anticoagulants do not receive them. Uptake of anticoagulation is particularly low among patients over the age of 80, where the risk of stroke is highest.5 Approximately 20% of strokes entered on to the SSNAP database happen in AF patients (and for vast majority of these the AF will be the underlying cause). Only 30% of these are anticoagulated prior to admission.6 There is significant reluctance among some clinicians to anticoagulate frail AF patients, due to an over-estimation of the bleed risk. Although recent NICE guidance CG180 explicitly states “Do not withhold anticoagulation solely because the person is at risk of having a fall,” the attitudes of prescribing clinicians may take more effort to change.7 If NICE CG180 were fully implemented, stroke risk in AF may be reduced to 69% of the current level, saving approximately 10,000 strokes due	1. Camm AJ et al. Guidelines for the Management of Atrial Fibrillation. European Heart Journal 2010; 31: 2369-2429. 2. Hart, R., Pearce, L., Aguilar, M. Meta analysis: antithrombotic therapy to prevent strokes in patients who have non-valvular atrial fibrillation. Ann Intern Med, 2007; 146, 857-867. 3. Petersen P. Placebo-controlled, randomised trial of warfarin and aspirin for prevention of thromboembolic complications in chronic atrial fibrillation. The Copenhagen AFASAK study. Lancet 1989; 333: 175–179. 4. Mant J, Hobbs F, Fletcher K et al. Warfarin versus aspirin for stroke prevention in an elderly community population with atrial fibrillation (the Birmingham Atrial Fibrillation Treatment of the Aged Study, BAFTA): a randomised controlled trial. Lancet 2007; 370: 493–503. 5. Cowan C. et al. The use of anticoagulants in the

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				to AF in England per year.8	management of atrial fibrillation among general practices in England. Heart 2013; 99:1166-1172. 6. Royal College of Physicians Clinical Effectiveness and Evidence Unit on behalf of the Intercollegiate Stroke Working Party. Sentinel Stroke National Audit Programme (SSNAP) public report. 2014. Available at: www.strokeaudit.org 7. National Clinical Guideline Centre. Atrial fibrillation: the management of atrial fibrillation. Clinical guideline: Methods, evidence and recommendations. London: NICE, 2014. Available at: nice.org.uk/guidance/cg180/resources/cg180-atrial-fibrillation-update-full-guideline3 8. NICE. Putting NICE guidance into practice. Costing report: atrial fibrillation. Implementing the NICE guideline on atrial fibrillation. Clinical Guideline 180. NICE, 2014.
050	London Stroke Strategic Clinical	3. Make it straightforward for the right treatment to be	Anticoagulation can be burdensome in terms of supervision and	Anticoagulation is only useful if it is kept within the therapeutic range. Too low and the stroke	· 1. Amruso, Nadia A. Ability of Clinical

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	Network	used without too many bureaucratic barriers; e.g. using novel oral anticoagulants (NOACs), provision of self-monitoring for INR monitoring, near patient testing, and sufficient efficient anticoagulation clinics.	monitoring, and this leads to poor compliance with medication. Self-monitoring can enable people to continue with their normal working lives without having to take time off for medical checks. Access to NOACs, which do not need regular blood testing, further improve quality of life for many AF patients.	risk is not avoided; too high and the risk of bleeding into the gut, brain, or elsewhere is significantly raised. There is currently a need to ensure that AF patients are on the correct drug, at the right dose, for them. A large proportion of people on Warfarin are outside the recommended INR range. Patients in routine clinical care have been shown to only maintain their target INR 56% of the time.1 During the other 44% of the time, these patients have blood levels which are either unsafe due to bleed risk or ineffective in preventing stroke. NICE CG 180 recommends that where poor anticoagulation control cannot be improved, the risks and benefits of alternative stroke prevention should be considered.2 NICE single technology assessments have been created for each of the NOACs.3	Pharmacists in a Community Pharmacy Setting to Manage Anticoagulation Therapy. Journal of the American Pharmacists Association. 2004; 44(4). 2. NICE. Atrial fibrillation: the management of atrial fibrillation. Clinical Guideline 180. London: NICE, 2014. Available at: guidance.nice.org.uk/CG180 3. NICE Technology Appraisals for NOACs: dabigatran: NICE TA 249; nice.org.uk/guidance/TA249 rivaroxaban: NICE TA 256; nice.org.uk/guidance/TA256 apixaban: NICE TA 275; nice.org.uk/guidance/TA275
051	National Atrial Fibrillation Clinical Policy Forum	Key area for quality improvement 2 Reducing geographical variation in the time gap between diagnosis and initiation onto anticoagulation	There is evidence of regional variation in timely access to anticoagulation therapy following a diagnosis of AF. Anecdotally, the NAFCPF has heard of examples where this variation has ranged from two days to four or even six weeks' waiting time from diagnosis of AF, to initiation onto appropriate anticoagulation therapy for stroke prevention. Identified patients with AF who are assessed as being at risk of stroke	Ensuring that patients diagnosed with AF and at risk of stroke receive appropriate treatment for stroke prevention as quickly as possible, is an essential area for quality improvement. For these patients, any time period between diagnosis and initiation onto appropriate anticoagulation therapy puts them at risk of an AF-related stroke, which could potentially be avoided. It is imperative that patients receive timely and equitable access to anticoagulation therapy to ensure that all 'at risk' patients with AF are protected against strokes at the most appropriate time.	Please see NICE Clinical Guideline 180 for recommendations regarding appropriate treatment for stroke prevention in AF: https://www.nice.org.uk/guidance/cg180/resources/guidance-atrial-fibrillation-the-management-of-atrial-fibrillation-pdf

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			should be initiated onto anticoagulation as soon as possible after diagnosis, where appropriate. This would reduce the risk of stroke in the time between diagnosis and initiation onto treatment and could impress upon the patient the need for concordance with treatment.	It would therefore be helpful for minimum standards to be set out in the final Quality Standard as to what patients should expect with regards to equity of access to timely anticoagulation therapy, regardless of location or the availability of any local anticoagulation services.	
052	National Atrial Fibrillation Clinical Policy Forum	Key area for quality improvement 4 Improving the management of patients with AF at risk of stroke who currently receive no form of anticoagulation	There is strong evidence to show that currently, the management of AF-related stroke prevention is suboptimal. Available data suggests significant geographical variation in anticoagulation rates of patients with AF at risk of stroke. The number of patients with AF at risk of stroke who are not initiated onto appropriate anticoagulation is currently too high. While this treatment may be contraindicated or declined by some patients, the proportion of AF patients at high risk of stroke treated with anticoagulants must increase to ensure that people with AF in England receive optimal treatment to reduce their risk of stroke. NICE Clinical Guideline 180 states that anticoagulation should be considered for men with a CHA2DS2-VASc score of 1 and to people with a CHA2DS2-VASc score of 2 or above,	AF-related strokes can be preventable but lives can only be saved if patients receive appropriate and well-managed anticoagulation. Data from the Sentinel Stroke Audit Programme (SSNAP) found that between Oct - Dec 2013: One fifth of patients who had suffered a stroke were in AF on admission. Only 38 per cent of patients in AF on admission for stroke were taking anticoagulants. 35 per cent of patients admitted for stroke were taking only antiplatelet drugs. Over a quarter of patients have been admitted with recurrent stroke. This indicates that a significant number of patients with AF are being sub-optimally treated. In addition, the Department of Health's Cardiovascular Disease Outcomes Strategy: Improving outcomes for people with or at risk of cardiovascular disease states that 7,100 AF-related strokes could be prevented every year if everyone with AF was appropriately managed. Furthermore, the same report found that a total of 2,100 deaths per year could also be prevented.	Please see the Sentinel Stroke Audit Programme for data showing that there are still major issues in primary and secondary care about ensuring that patients have effective stroke prevention: https://www.rcplondon.ac.uk/sites/default/files/ssnap_public_report_oct-dec_2013_1.pdf Please see the Department of Health's Cardiovascular Disease Outcomes Strategy: Improving outcomes for people with or at risk of cardiovascular disease for data on how outcomes for patients with AF could be improved: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/214895/9387-2900853-CVD-Outcomes_web1.pdf

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			taking bleeding risk into account. There is therefore a need to review those patients with a diagnosis of AF who are at risk of stroke in line with this Guideline but are not currently receiving any form of anticoagulation.		Please see the Grasp the Initiative; Action Plan for national data made available through the GRASP-AF uploads onto CHART Online that suggests that a significant proportion of people with AF who may be appropriate for anticoagulation are not receiving it, despite being identified as being at high risk of AF-related stroke: http://www.atrialfibrillation.org.uk/events-news/grasp%20the%20initiative.html Please see NICE Clinical Guideline 180 regarding recommendations regarding anticoagulation of patients at high risk of stroke: https://www.nice.org.uk/guidance/cg180/resources/guidance-atrial-fibrillation-the-management-of-atrial-fibrillation-pdf
053	NHS England Patient Safety Division	Ensuring the QS development group is mindful of potential for safety risk related to anticoagulants commonly	For the QS to recognise the issues of safety as well as effectiveness of a key treatment for af	As the QS group will be well aware, the key treatment for af (anticoagulation) has potential for harming patients unless appropriately monitored and managed, and unless patients are empowered to understand special cautions	http://www.nrls.npsa.nhs.uk/resources/?entryid45=59814

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		used to treat af		and needs (e.g. in case of head injury). A range of safety advice was issued by the NPSA (see link)	
054	Roche Diagnostics Ltd	Key area for quality improvement 1 To achieve optimum INR control using time in therapeutic range (TTR) above 65% for people receiving vitamin-K antagonists.	To help implementation of NICE AF clinical guidelines on atrial fibrillation, issued June 2014.	Warfarin anticoagulation treatment is only effective if people remain within the therapeutic widow to reduce the number of strokes and minimise bleeding risk. Recent observational primary care data (Gallagher et al.) suggests that close to 50% of patients with AF receiving warfarin may not achieve 65% TTR as recommended in the updated NICE guideline on AF. In addition, some local warfarin clinic protocols or service agreements seem to specify lower TTR thresholds as adequate INR control, contrary to the updated NICE recommendation.	Gallagher AM et al. Risks of stroke and mortality associated with suboptimal anticoagulation in atrial fibrillation patients. Thromb Haemost. 2011;106(5):968-77. NICE CG180: Atrial fibrillation: the management of atrial fibrillation. 2014 http://www.nice.org.uk/guidance/cg180
055	Royal College of Physicians of Edinburgh	Key area for quality improvement 4 Men with atrial fibrillation with a CHA2DS2-VASc score of ≥1 and women with atrial fibrillation with a CHA2DS2-VASc score of ≥2 should be considered for oral anticoagulation to reduce their risk of stroke.	This is recommended by the current NICE guidelines for the management of patients with atrial fibrillation.	Previously the 2006 NICE guidelines on the management of atrial fibrillation assessed stroke risk based on the CHADS2 score (which was not as inclusive of risk factors as the CHA2DS2-VASc score) recommending aspirin or oral anticoagulation for patients with one stroke risk factor and aspirin for those with no stroke risk factors. Aspirin is no longer recommended for stroke prevention in atrial fibrillation (see Key area for quality improvement 2). Therefore, some patients at risk of stroke may be receiving inappropriate antithrombotic treatment (aspirin when oral anticoagulation is recommended). In addition, since the 2006 NICE guidelines on atrial fibrillation, four novel oral anticoagulants (dabigatran, rivaroxaban, apixaban, edoxaban) have been tested in Phase III randomised	Please see the 2014 NICE guidelines on Atrial Fibrillation http://www.nice.org.uk/guidance/CG180 and Scottish Intercollegiate Guidelines Network (2013) http://sign.ac.uk/guidelines/fulltext/129/index.html and the European Society of Cardiology 2012 Focussed Update http://www.escardio.org/guidelines-surveys/esc-guidelines/GuidelinesDocuments/Guidelines_Focused_Update_Atrial_Fib_FT.pdf

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				controlled trials and shown to be at least non-inferior to warfarin for stroke prevention (plus one trial comparing apixaban to aspirin which showed that apixaban was superior to aspirin in the prevention of stroke and systematic embolism with a similar risk of major bleeding). Three (dabigatran, rivaroxaban, apixaban) are currently available to prescribe in the UK for stroke prevention in atrial fibrillation. Therefore, there is greater choice of oral anticoagulants for atrial fibrillation patients at risk of stroke. Some patients may not have been offered a vitamin K antagonist (VKA, e.g., warfarin) previously because of the inherent difficulties associated with VKAs or they may have refused warfarin but they may be suitable for, or willing to take one of the newer oral anticoagulants.	
056	Royal College of Physicians of Edinburgh	Key area for quality improvement 5 In those patients with atrial fibrillation who are receiving warfarin or a vitamin K antagonist, the time in therapeutic range should be calculated (Rosendaal method or manual calculation) and regularly reviewed.	Regular review of the time in therapeutic range (TTR) is recommended by the current NICE guidelines for the management of patients with atrial fibrillation in those receiving a vitamin K antagonist.	The efficacy and safety of vitamin K antagonists (VKAs) is linked to the amount of time the International Normalised Ratio (INR) is in the therapeutic range (TTR); for patients with atrial fibrillation the INR target is 2.0 to 3.0. The NICE 2014 guidelines on atrial fibrillation recommend that TTR should be 65% or greater; if TTR is less than 65% then the reasons (non-adherence, medication-, alcohol-, or food-interactions etc.) for this should be investigated and strategies to improve TTR should be devised and implemented or the patient should be considered for a non- vitamin K antagonist oral anticoagulant (NOAC) (dabigatran, rivaroxaban, apixaban) as long as non-adherence is not the reason for poor TTR. There should also be no geographical variations in use of NOACs.	Please see the 2014 NICE guidelines on Atrial Fibrillation http://www.nice.org.uk/guidance/CG180

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057	SCM 2	Key area for quality improvement 2 Improvement of Anticoagulation in AF	Warfarin is a very effective intervention in reducing stroke risk in AF however only if controlled in an acceptable range, below this range it becomes more risky in terms of bleeding and stroke	Many people loiter in Anticoagulation clinics with poor TTR and remain at risk of stroke and bleeding however no one is discussing this with them so they are aware of the options available	Recommendation of NICE CG180
058	SCM 2	Key area for quality improvement 3 Use of NOACs	The none vitamin K antagonist oral anticoagulants (NOACs) are effective NICE TA endorsed medications however their usage remains in the low nationally with marked regional variation	These are key treatments in the management of AF related stroke risk however due to local commissioning decisions they are being denied to patients (assuming this to be the reasons for such marked regional variation) despite their positive NICE TA and endorsement in the NICE CG180	Recommendation of NICE CG180
059	SCM 2	Key area for quality improvement 5 Patient Care Packages	This is an area with a very strong evidence base that the clinicians view on intervention is out of kilter with the patients and there is a concern that this put their choice of intervention for stroke risk reduction in the wrong area.	Patients are denied choice by clinicians who have may not have their view of care as central as we would like. This was encapsulated in the guideline	Recommendation of NICE CG180
060	SCM 1	Uptake of anticoagulation % of patients with CHADSVASC of 2 or more receiving oral anticoagulant (in accordance with recommendation 1.5.3 of guideline).	We know that uptake of anticoagulation under the 2006 guidance was poor with approximately half of patients in whom it was recommended not receiving it (Heart 2013; 99: 166-1172).	Stroke prevention is the single most important theme in the new guideline	This data is easily audited using the GRASP tool of NHS Improving Quality. Moreover, trend data from the use of the tool over the last 5 years should be available from NHS Improving Quality to assess whether the 2014 guidance is changing clinical practice.
061	SCM 1	Informed patient choice in anticoagulant selection % of patients newly	There is great regional variation in uptake of NOACs and in implementation of STAs 249, 256	NICE have already recognized the problem in implementation of the NOAC STAs. The problem in NOAC implementation has been a	This may be difficult to audit. However, one approach would be to refer to the NICE

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		commenced on anticoagulation in whom there is a record of discussion of the options for oral anticoagulation (in accordance with recommendation 1.5.4)	and 275. This may reflect variability in commissioning policies or medical practice or both.	central theme for NICE's Implementation Collaborative aimed at supporting local implementation of NICE guidance. NICE featured the Implementation Collaborative and the problem with NOAC implementation jointly with the new AF Guideline at its press launch in June.	Clinical Decision Aid launched in association with the AF Guideline, which presents to the patient the pros and cons of NOACs versus warfarin. While this decision aid would not be the only way of fulfilling this Quality Standard objective, it would present a good illustration of how the Quality Standard could be adequately fulfilled. This is the first time NICE have ever produced a patient decision aid and it would also be useful to encourage its use.
062	SCM 1	Quality of anticoagulation with Vit K antagonists % of patients on warfarin (or other Vit K antagonists) undergoing annual review of quality of anticoagulation (recommendation 1.5.18), in whom, if quality of anticoagulation is poor (recommendation 1.5.12), there is evidence that there has been an attempt to improve quality of anticoagulation (1.5.13) or consideration of alternative stroke prevention options (1.5.14).	Approximately 20 % of patients currently taking warfarin have poor quality anticoagulation as defined by the 2014 guideline.	These patients are either being placed at increased risk of stroke due to inadequate anticoagulation or increased risk of serious bleeding or both. Poor quality of anticoagulation may be improved through counselling patients on the most appropriate use of Vit K antagonists or alternatively through consideration of change to a NOAC.	Information on quality of anticoagulation is already collected for most patients attending anticoagulant clinics. Most patients are managed used computerised algorithms which automatically make this information available to clinic staff. The information to facilitate this quality standard should, therefore, already be available. However, frequently there is a "gap" between the anticoagulant clinic having this information and conveying it to the staff

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					responsible for the patient's ongoing general clinical care. Endorsing quality of anticoagulation as a Quality Standard would focus the attention of Commissioning Groups on the need to focus on clinical pathways and to join up clinical management in this area.
063	SCM 3	Key area for quality improvement 4: Record of appropriate thromboprophylaxis	For patients deemed to be at risk, stroke prevention is the initial step in the management pathways of patients with AF	Need to maintain the momentum of movement away from antiplatelet therapy towards effective management with oral anticoagulation.	The following areas for quality improvements are in line with recommendations from NICE guideline CG180 Management of Atrial Fibrillation
064	SCM 3	Key area for quality improvement 5: Documented Time in Therapeutic Range for all patients with non-valvular AF on warfarin therapy	Patients with AF who take warfarin to control their risk of thromboembolism and who struggle to maintain satisfactory control may not benefit from therapy. Assessment of TTR will highlight those patients with poor warfarin control who may need further support with their drugs treatment or consideration for alternative strategy	The advent of NOAC agents offer alternative treatments and should be considered for those patients with TTR less than 65%	The following areas for quality improvements are in line with recommendations from NICE guideline CG180 Management of Atrial Fibrillation
065	SCM 4	Key area for quality improvement 4 Reducing the geographical bias for treatment with NOACs	Need to optimise OAC delivery – apart from warfarin, we now have a NOAC. We should fit the OAC option to the patient (and vice versa) after counselling and a package of case, and use of the SAMeTT2R2 score. The latter identify patients who would	Apparent differences in NOAC implementation in different parts of the UK	See also NICE NIC document on NOACs

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			do less well on warfarin, and start NOAC upfront rather than put patients at risk with a warfarin stress test (or 'trial of warfarin')		
066	SCM 4	Additional developmental areas of emergent practice 1. Stroke prevention: Identify those not treated – risk stratify and start OAC if needed Identify those on aspirin – stop aspirin and start OAC Identify those on warfarin – check TTR (should be >65%) and if not, start NOAC Use the SAMe-TT2R2 score to identify patients who would do less well on warfarin, and start NOAC upfront rather than put patients at risk with a warfarin stress test (or 'trial of warfarin')			
067	UCLPartners Academic Health Science Network	Availability for warfarin or NOAC for patients being commenced on anticoagulation	There is evidence of benefit of appropriate anticoagulation for patient with atrial fibrillation. NICE advise that both NOACs and warfarin are cost effective for this purpose (NICE, 2014).	This is a key area for quality improvement as in many areas of the country it remains the case that if a person declines warfarin they are not offered referral for NOAC on the NHS, instead they are offered to have a NOAC privately or not at all. This means that many people are still not being anticoagulated that should be.	Here is evidence of the fact that warfarin and NOAC are not being considered equal in North Central London: http://ncl-jfc.org.uk/uploads/3/2/0/9/3209562/summary_treatment_pathway_af_noac__2_10_13__final.pdf

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Intervention to prevent stroke: Antiplatelets					
068	All-Party Parliamentary Group on Atrial Fibrillation	Aspirin should not be used for prevention of stroke for patients with AF	There is overwhelming evidence that aspirin is less effective than other forms of anticoagulation such as NOACs and vitamin K antagonists. Research has shown that aspirin reduces stroke risk by less than 20 per cent, whereas oral anticoagulation is effective in 64 per cent of cases. NOACs are even more effective with regards to stroke prevention. This is reflected in the recently published NICE clinical guideline 180 which states: “aspirin monotherapy should no longer be offered for stroke prevention to people with Atrial Fibrillation”. However, data shows that just over a third of AF patients at high risk of stroke continue to be treated with antiplatelets including aspirin.	Despite the recommendation in NICE clinical guideline 180, too many patients continue to be prescribed aspirin. Data from the Sentinel Stroke Audit Programme (SSNAP) found that between Oct - Dec 2013, in those patients who had been admitted and had a previous diagnosis of AF, 35 per cent were taking antiplatelet monotherapy and, as such, were not receiving optimal treatment for stroke prevention. Similarly, a recent paper has also highlighted the disproportionately high use of aspirin monotherapy in patients over 80 years old. This study showed that 64.5 per cent of patients with a CHADS2 score of 2 or more were receiving anticoagulation, compared with only 47.7 per cent of patients aged of 80 with a CHADS2 score of 2 or more. As frequently identified at APGAF meetings, this is primarily motivated by clinical concerns around the risk of the patient suffering a fall. Despite this, it is important that the NICE Guidance is adhered to, and appropriate anticoagulation is prescribed. One of the main reasons for the continued use of aspirin is that the Quality and Outcomes Framework (QOF) encourages GPs to treat with either with aspirin or an anticoagulant. This suggests to GPs that aspirin, which has a lower upfront cost when compared to both Warfarin	Please see the updated NICE Clinical Guideline 180 for the recommendation that aspirin monotherapy should not be offered solely for stroke prevention to people with AF: https://www.nice.org.uk/guidance/cg180/resources/guidance-atrial-fibrillation-the-management-of-atrial-fibrillation-pdf Please see the Sentinel Stroke Audit Programme for data showing that there is a significant number of patients with AF admitted for a stroke who are taking aspirin: https://www.rcplondon.ac.uk/sites/default/files/ssnap_public_report_oct-dec_2013_1.pdf Please see Cowan C et al. The use of anticoagulants in the management of atrial fibrillation among general practices in England. Heart 2013 Aug; 99(16):1166-72: http://www.ncbi.nlm.nih.gov/pubmed/23393083 Please see the QOF guidance:

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				and NOACs, will provide comparable benefits to these more effective forms of treatment. This perception is false, as aspirin is ineffective in preventing AF related stroke. It is important that this reflected within the quality standard.	http://bma.org.uk/practical-support-at-work/contracts/independent-contractors/qof-guidance
069	Arrhythmia Alliance	Anti-platelet monotherapy therapy, including aspirin, should not be offered as an alternative to anticoagulation therapy for preventing AF-related stroke in diagnosed AF patients	Substantial evidence exits to show that monotherapy antiplatelet therapy offers significantly less protection against AF-stroke than anticoagulation (anticoagulation 65%+, antiplatelet 20%) Evidence is also available to show that antiplatelet therapy causes at least the same level of bleeding risk as anticoagulation, so there is no benefit.	QOF allows for consideration for antiplatelet therapy. This is out-dated and NICE CG180 has issued recommendations against the use of antiplatelet therapy for AF-stroke risk reduction. However with the discrepancy existing, many clinicians still offer aspirin / antiplatelet monotherapy	NICE CG180 ESC updated AF Guidelines 2012 AF Report 2011 QOF AF
070	Atrial Fibrillation Association	3 Anti-platelet monotherapy therapy, including aspirin, should not be offered as an alternative to anticoagulation therapy for preventing AF-related stroke in diagnosed AF patients	There is substantial evidence that monotherapy antiplatelet therapy offers significantly less protection against AF-stroke than anticoagulation (anticoagulation 65%+, antiplatelet 20%) There is also considerable evidence to show that antiplatelet therapy causes at least the same level of bleeding risk as anticoagulation, so there is no benefit.	Currently QOF allows for consideration for antiplatelet therapy. This is out-dated and NICE CG180 has issued recommendations against the use of antiplatelet therapy for AF-stroke risk reduction. However with the discrepancy existing, many clinicians still offer aspirin / antiplatelet monotherapy, as exampled in recent work carried out by UCL AHSN in Camden. AF patients left on aspirin for AF-stroke management remain at high risk of both stroke and bleeds	NICE CG180 ESC updated AF Guidelines 2012 AF Report 2011 QOF AF
071	Bristol-Myers Squibb / Pfizer	Key area for quality improvement 5 Review of all patients currently receiving aspirin	According to the ESC guidelines for the management of AF, the efficacy of stroke prevention in patients with AF with aspirin is weak, with no evidence for decrease in total	Data suggest a significant proportion of patients remain on aspirin for stroke prevention in atrial fibrillation. May 2014 data from the GRASP AF toolkit reported by AFA “Grasp the initiative: Action Plan” suggests that 33.98 per cent of AF	Camm AJ, Lip GYH, De Caterina R, et al. 2012 focused update of the ESC Guidelines for the management of atrial

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		solely for the purpose of prevention of AF-related stroke. These patients should be reviewed and initiated on oral anticoagulation (unless anticoagulation is contraindicated or not appropriate).	or cardiovascular mortality with aspirin (or antiplatelet drugs) in AF patients. There is potential for harm, since the risk of major bleeding (and intra-cranial haemorrhage) with aspirin is not significantly different to that of OAC, especially in the elderly. NICE CG180 was also updated in 2014 to reflect the clinical evidence in relation to aspirin "Do not offer aspirin monotherapy solely for stroke prevention to people with atrial fibrillation."	patients at high risk of stroke (CHADS2> 1) have been prescribed an antiplatelet but not an anticoagulant. For GP prescriptions for AF in August 2014, 23.4% were written for aspirin (with 60.8% for warfarin and 8.7% for NOACs). In the subgroup of patients switching from warfarin, aspirin use was considerably higher at 54.2%. The patients receiving aspirin for the purpose of preventing AF-related stroke are not benefiting from the same stroke risk reduction as those treated with anticoagulants, though they face similar risks of bleeding.	fibrillation. Eur Heart J. 2012;33:2719–2747. NICE Clinical Guideline CG180. Atrial fibrillation: the management of atrial fibrillation (available at http://www.nice.org.uk/guidance/cg180) Grasp the initiative: Action plan. Atrial Fibrillation Association (2014). CSD Patient Data, Cegedim Strategic Data UK Ltd, August 2014
072	National Atrial Fibrillation Clinical Policy Forum	Key area for quality improvement 5 Reviewing patients with AF at high risk of stroke who currently receive only aspirin for AF-related stroke prevention	Data shows that just over a third of AF patients at high risk of stroke continue to be treated with antiplatelets, including aspirin. This goes against the recommendations in NICE Clinical Guideline 180. Patients receiving aspirin for the purpose of prevention of AF-related stroke are not benefiting from the same stroke risk reduction as those treated with anticoagulants and should be reviewed immediately.	Patients receiving aspirin solely for the purpose of prevention of AF-related stroke should be urgently reviewed and initiated on anticoagulation therapy (unless anticoagulation is contraindicated or not appropriate). Data from the Sentinel Stroke Audit Programme (SSNAP) found that between Oct - Dec 2013, in those patients who had been admitted and had a previous diagnosis of AF, 35 per cent were taking antiplatelet monotherapy and, as such, were not receiving optimal treatment for stroke prevention. Evidence from the recently published Grasp the Initiative Action Plan highlighted that risk stratification audit tools, such as GRASP AF, are useful in helping to identify patients with AF who have been prescribed an antiplatelet, which	Please see the updated NICE Clinical Guideline 180 for the recommendation that aspirin monotherapy should not be offered solely for stroke prevention to people with AF: https://www.nice.org.uk/guidance/cg180/resources/guidance-atrial-fibrillation-the-management-of-atrial-fibrillation-pdf Please see the Grasp the Initiative; Action Plan for evidence of the need to immediately review those patients receiving aspirin: http://www.atrialfibrillation.org

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				includes those on aspirin. The report goes on to say “it should be noted that some of these patients may have been prescribed aspirin as anticoagulation is contraindicated. For others they may have been prescribed aspirin for a health condition other than stroke prevention; however it is likely that the vast majority have been prescribed aspirin solely for their stroke prevention and so could still be eligible for anticoagulation.” A recent paper has also highlighted the disproportionately high use of aspirin monotherapy in patients over 80 years old. The research showed that 64.5 per cent of patients with a CHADS2 score of 2 or more were receiving anticoagulation, compared with only 47.7 per cent of patients over 80 with CHADS2 score of 2 or more. The NAFCPF is concerned that the primary reason for not initiating patients over 80 on anticoagulants remains concerns over the risk of a fall, despite NICE guidance explicitly stating that anticoagulation therapy should not be withheld solely on this basis.	.uk/events-news/grasp%20the%20initiative.html Please see the Sentinel Stroke Audit Programme for data showing that there is a significant number of patients with AF admitted for a stroke who are taking aspirin: https://www.rcplondon.ac.uk/sites/default/files/ssnap_public_report_oct-dec_2013_1.pdf Please see Cowan C et al. The use of anticoagulants in the management of atrial fibrillation among general practices in England. Heart 2013 Aug; 99(16):1166-72: http://www.ncbi.nlm.nih.gov/pubmed/23393083
073	Royal College of Physicians of Edinburgh	Key area for quality improvement 2 Identify atrial fibrillation patients prescribed aspirin monotherapy for stroke prevention	NICE guidance states that aspirin monotherapy should not be used for stroke prevention in patients with atrial fibrillation.	Many atrial fibrillation patients receive aspirin monotherapy for stroke prevention, particularly elderly patients. Aspirin is not effective at preventing stroke in atrial fibrillation patients and it is associated with a similar risk of major bleeding to warfarin. Therefore, it is important that atrial fibrillation patients at risk of stroke are offered an effective and safe treatment option to reduce their risk of stroke.	Please see the 2014 NICE guidelines on Atrial Fibrillation http://www.nice.org.uk/guidance/CG180 and Scottish Intercollegiate Guidelines Network (2013) http://sign.ac.uk/guidelines/fulltext/129/index.html and the European Society of

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					Cardiology 2012 Focussed Update http://www.escardio.org/guidelines-surveys/esc-guidelines/GuidelinesDocuments/Guidelines_Focused_Update_Atrial_Fib_FT.pdf
074	SCM 2	Key area for quality improvement 1 Removal of aspirin from Stroke prevention in AF	Aspirin Momotherapy is not of value in reducing stroke in AF yet all evidence suggests 1:3 people who are at risk of AF related stroke are on Aspirin or other antiplatelet agents	This is the traditional default management of many clinicians for the management of AF stroke risk in AF. It has been very hard to move over the years and needs to be on goingly highlighted	Recommendation of NICE CG180
075	Stroke Association	Ceasing to offer aspirin monotheraphy for stroke prevention	As recommended within the NICE guidelines. There is a large evidence base to suggest that aspirin is ineffective in reducing the risk of stroke in patients with atrial fibrillation.	While the NICE guidance recommends that aspirin monotherapy is no longer offered, there are a substantial number of patients UK wide who are already taking aspirin, whose medication should be reviewed urgently.	QOF AF005 SSNAP audit Mar-Jun 2014
076	UCLPartners Academic Health Science Network	Aspirin “monotherapy” should not be considered an alternative to anticoagulation for AF in higher risk patients	There is evidence that aspirin causes harm to patients i.e. bleeding risk but does not significantly decrease the risk of stroke in patients with AF (ESC, 2012). Even if patients are not suitable for an anticoagulant they should therefore be taken off aspirin.	Currently QOF encourages GPs to treat with either aspirin or an anticoagulant. Therefore many GPs still feel they are benefiting their patients by offering them aspirin. During our work in Camden we have found that despite the ESC 2012 guidance and the NICE guidance 2014 many patients remain on aspirin and other antiplatelet agents for the sole reason of stroke prevention in patients with AF.	Here is the QOF guidance: http://bma.org.uk/practical-support-at-work/contracts/independent-contractors/qof-guidance
4.5 Interventions to prevent stroke: Left atrial appendage occlusion					
077	Arrhythmia Alliance	AF patients who are contraindicated for anticoagulation, should be considered clinically considered and	A small percentage of AF patients are contra-indicated for anticoagulation therapy. For this population group, remaining at risk of AF-related strokes, there is no other	Antiplatelet therapy shares the same bleeding risks as anticoagulation therapy, and significantly reduced stroke-protection levels. In the PROTECT AF trials, the four-year follow-up data showed the device to	NICE CG180 NICE Preventing Stroke in People with Atrial Fibrillation care pathway NICE PG349

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		subsequently offered referral for consideration of LAAO	option. LAAO for this group is a life-preserving option, not a 'life-style' choice.	statistically superior to warfarin for reducing the relative risk of the composite primary endpoint of cardiovascular death, all stroke and systemic embolization. NHS Specialist Commissioning has now been approved and commended on this procedure. For AF patients with no other alternative, and medically assessed as appropriate, this is currently the only viable alternative when anticoagulation therapy is contra-indicated	FDA approval and pending comment: http://www.medpagetoday.com/Cardiology/Strokes/43380 http://www.atrialfibrillation.org.uk/stories/laao.html
078	Atrial Fibrillation Association	Additional developmental areas and emerging practice: AF patients who are contraindicated for anticoagulation, should be considered clinically considered and subsequently offered referral for consideration of LAAO	A small percentage of AF patients are contra-indicated for anticoagulation therapy. For this population group, remaining at risk of AF-related strokes, there is no other option. LAAO for this group is a life-preserving option, not a 'life-style' choice.	Antiplatelet therapy shares the same bleeding risks as anticoagulation therapy, and significantly reduced stroke-protection levels. In the PROTECT AF trials, the four-year follow-up data showed the device to statistically superior to warfarin for reducing the relative risk of the composite primary endpoint of cardiovascular death, all stroke and systemic embolization. NHS Specialist Commissioning has now been approved and commended on this procedure. For AF patients with no other alternative, and medically assessed as appropriate, this is currently the only viable alternative when anticoagulation therapy is contra-indicated	NICE CG180 NICE Preventing Stroke in People with Atrial Fibrillation care pathway NICE PG349 FDA approval and pending comment: http://www.medpagetoday.com/Cardiology/Strokes/43380 http://www.atrialfibrillation.org.uk/stories/laao.html
079	London Stroke Strategic Clinical Network	5. Provision of treatment for patients who cannot take anticoagulants: left atrial appendage occlusion	There will be 10-20% of patients who cannot take anticoagulants because of a high bleeding risk. The left atrial appendage is the major source of thrombus-causing stroke and peripheral thromboembolism in patients with AF.1, 2, 3, 4 Access to left atrial appendage occlusion will	There is limited access to left atrial appendage occlusion across England. Healthcare providers need to ensure that appropriate patients are considered for the treatment, as it as potentially both a life-saving and cost-saving intervention.5 NICE CG 180 recommends that where anticoagulation is contraindicated or not tolerated, the risks and benefits of left atrial	1. Blackshear J, Odell J. Appendage obliteration to reduce stroke in cardiac surgical patients with atrial fibrillation. Ann Thorac Surg 1996; 61: 755–759 2. Holmes D, Reddy V, Turi Z. Percutaneous closure of the left atrial appendage

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			prevent stroke in some AF patients who would otherwise not have access to stroke prevention measures due to contraindication to anticoagulants.	appendage occlusion should be discussed with the patient.5	versus warfarin therapy for prevention of stroke in patients with atrial fibrillation: a randomised non-inferiority trial. Lancet 2009; 374: 534–542 3. Reddy V, Doshi S, Sievert H. Percutaneous left atrial appendage closure for stroke prophylaxis in patients with atrial fibrillation: 2.3-year follow-up of the PROTECT AF (Watchman Left Atrial Appendage System for Embolic Protection in Patients with Atrial Fibrillation) trial. Circulation 2013; 127: 720–729. 4. Lewalter T, Ibrahim R, Albers B, Camm A. An update and current expert opinions on percutaneous left atrial appendage occlusion for stroke prevention in atrial fibrillation. Europace 2013; 15: 652–656. 5. NICE. Atrial fibrillation: the management of atrial fibrillation. Clinical Guideline 180. London: NICE, 2014. Available at: guidance.nice.org.uk/CG180
080	Medtronic Limited	Key area for quality improvement 3:	The NHS England Service Specification A9b recognises that	This key area for quality improvement is aligned with:	NICE CG 180 and NHS England A9b

ID	Stakeholder	Suggested key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
		Equal Access for all patients requiring Left Atrial Ablation if drug treatment has failed to control symptoms of atrial fibrillation or is unsuitable	"There is still a barrier to referral, however, in some areas. Often the referral is initiated by a patient request and therefore less knowledgeable patients may be placed at a disadvantage in terms of referral'. Additionally the Service Specification recommends that the service should provide a minimum number of AF ablations of 100 per million of population. However, there is wide variability of number of Left Atrial Ablations around the NHS in England. Using Health Episode Statistics for the year 2012/2013 it is possible to map the patient access to complex ablation services (AF and VT) using the HRG code EA29Z - Percutaneous Complex Ablation. 74 CCG's fail to meet the minimum number of ablations per million of population (PMP) recommended by NHS England. Patients with either a).low access to complex ablation service or b) the lowest referrals live in NHS Hardwick CCG (10 PMP), Nottingham CCG (14 PMP) and NHS Sheffield (24 PMP). The NHS England average is 160 PMP.	Domain 1. Preventing people from dying prematurely Domain 2. Enhancing Quality of life for people with long-term conditions Domain 4 Ensuring people have a positive experience of care	https://www.engage.england.nhs.uk/consultation/ssc-area-a/supporting_documents/a9bservicespec.pdf HES data accessed on 14.7.2014

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			A quality standard for referral and a QOF indicator for referral will help in removing barriers and reducing variability of access to Left Atrial Catheter Ablation services for all patients		
081	UCLPartners Academic Health Science Network	Additional developmental areas of emergent practice When patient contraindicated for anticoagulation, referral for consideration of left atrial appendage occlusion LAAO	Ensuring that stroke risk is still being addressed even if contraindicated for anticoagulation.	To be inclusive of most AF presentations and reduce stroke risk for those who are contraindicated for anitocagulation.	NICE CG180 / NICE Preventing Stroke in People with Atrial Fibrillation care pathway / IPG349 /
4.5 Interventions to prevent stroke: Review of people with AF					
082	SCM 1	Annual review % of patients with AF undergoing annual review in accordance with recommendations 1.5.17 and 1.5.18.	AF is a chronic disease. Stroke risk and symptomatic status may change with time, as may the risks and benefits of treatment.	Unlike other chronic diseases such as hypertension or diabetes, there is currently no provision for annual review of patients with AF	One obviously worries about the increased workload which might result from adopting annual review as a Quality Standard. However, many (probably most) of these patients already undergo annual review on account of co-morbidities such as hypertension or heart failure. A recommendation for annual review of AF patients would in most cases, therefore, be merely asking health care professionals to more specifically focus on AF in a review which they would already be undertaking.

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083	SCM 3	Key area for quality improvement 1: Annual Review for Patients with a history of atrial fibrillation	Regular review and reassessment of burden of AF as well as stroke and bleeding risk is essential to highlight patients who should be considered for alternative management strategies	Currently there is no formal structure for the review of progress of patients with AF. Stroke and bleeding risk and symptoms burden are dynamic and should be reviewed to ensure optimum management.	The following areas for quality improvements are in line with recommendations from NICE guideline CG180 Management of Atrial Fibrillation
084	UCLPartners Academic Health Science Network	Additional developmental areas of emergent practice Patients with AF not on anticoagulation are reviewed routinely at age 65 as they may then become eligible for anticoagulation.	Ensuring that those most at risk at being optimally managed.	Ensuring that those with an increasing risk are not on suboptimal management due to increase of stroke risk with age.	NICE AF 2014
4.6 Rate and rhythm control: Cardioversion					
085	London Stroke Strategic Clinical Network	4. Provide treatment to get people back into sinus rhythm wherever possible; e.g. DC conversion, pharmacological treatments, aberrant pathway obliteration, etc.	If a patient can be reverted to sinus rhythm and kept in a normal rhythm, then their stroke risk returns to that of the normal population, which is a five-fold reduction in stroke risk.	Atrial fibrillation, especially early in the disease's course, is not irreversible. Provision of services for electrophysiology and cardioversion is uneven across England, resulting in a post-code lottery approach to care which amplifies health inequalities.	
086	The Royal College of Anaesthetists	Key area for quality improvement 1 Cardioversion in acute atrial fibrillation.	There is considerable variation in practice around cardioversion in the first 24-48 hours of a new presentation (e.g. post-op). Established guidelines do not deal with the indication for transoesophageal echocardiography (TOE) and anticoagulation.	Acute post-operative AF is usually more difficult to 'rate control' and the patient is often haemodynamically unstable. It is important to manage these patients as rapidly as possible. Uncertainty often prevails about the time limit after which TOE guided cardioversion is needed.	No supporting information to offer. Lack of information in ACC/AHA guidelines. (American College of Cardiology/American Heart Association)
4.7 Self-monitoring					
087	Arrhythmia Alliance	Access should be available to patients and carers for	Management of INR levels is critical to the risk v benefits of warfarin	The provision of INR self-monitoring, either by patient or carer as agreed with the healthcare	http://www.anticoagulationeurope.org/files/files/Self-

ID	Stakeholder	Suggested key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
		self-monitoring of INRs whenever safe and preferred. There should be patient education to facilitate and follow up support.	therapy. For some patients, unable to travel regularly for INR monitoring (work / family / travel / based in care homes / reliant on transport and carers / costs etc) ,or who take other therapies that interact with warfarin / enjoy a varied lifestyle but one that frequently adversely affects their INR levels, INR monitoring can be costly and securing stable INR levels, challenging. Quality of life is impacted and requirement upon carers and supportive systems can be extensive. Furthermore, with increased AF prevalence, coupled with improved detection and risk assessment, there is significant impact in demand and capacity at anticoagulation clinics and phlebotomy services.	practitioner, can support quality of life, costs, regularity of testing, improved time in therapeutic range, adherence, and reduce cost and demand on anticoagulation and community services.	monitoring%20for%20patients%20Clinical%20Governance%20Resource%20Pack.pdf http://www.nice.org.uk/guidance/dg14/resources/guidance-atrial-fibrillation-and-heart-valve-disease-selfmonitoring-coagulation-status-using-pointofcare-coagulometers-the-coaguchekxs-system-and-the-inratio2ptinr-monitor-pdf
088	Atrial Fibrillation Association	Additional developmental areas and emerging practice: Access should be available to patients and carers for self-monitoring of INRs whenever safe and preferred. There should be patient education to facilitate and follow up support.	Management of INR levels is critical to the risk v benefits of warfarin therapy. For some patients, unable to travel regularly for INR monitoring (work / family / travel / based in care homes / reliant on transport and carers / costs etc) ,or who take other therapies that interact with warfarin / enjoy a varied lifestyle but one that frequently adversely affects their INR levels, INR monitoring can be costly and securing stable INR levels, challenging. Quality of life is impacted and requirement upon	The provision of INR self-monitoring, either by patient or carer as agreed with the healthcare practitioner, can support quality of life, costs, regularity of testing, improved time in therapeutic range, adherence, and reduce cost and demand on anticoagulation and community services.	http://www.anticoagulationeurope.org/files/files/Self-monitoring%20for%20patients%20Clinical%20Governance%20Resource%20Pack.pdf http://www.nice.org.uk/guidance/dg14/resources/guidance-atrial-fibrillation-and-heart-valve-disease-selfmonitoring-coagulation-status-using-pointofcare-coagulometers-the-coaguchekxs-system-and-the-inratio2ptinr-monitor-

ID	Stakeholder	Suggested key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
			carers and supportive systems can be extensive. Furthermore, with increased AF prevalence, coupled with improved detection and risk assessment, there is significant impact in demand and capacity at anticoagulation clinics and phlebotomy services.		pdf
089	Roche Diagnostics Ltd	Key area for quality improvement 2 Choice of monitoring options including offer of INR self-monitoring for people with AF receiving vitamin-K antagonists.	Implementation of the updated NICE guideline on atrial fibrillation will significantly increase the number of people with AF receiving warfarin and requiring high quality INR control. Self-monitoring adds further choice to the patient consultation	INR self-monitoring empowers patients to take control over their condition. It leads to significantly better INR control and reduces the number of thromboembolic events. Self-monitoring can be cost saving for the NHS and has recently been recommended in the NICE diagnostic guidance. However, the majority of anticoagulation services in the NHS do not offer self-monitoring to their patients.	NICE DG14: Atrial fibrillation and heart valve disease: self-monitoring coagulation status using point-of-care coagulometers. 2014 http://www.nice.org.uk/guidance/DG14
090	UCLPartners Academic Health Science Network	Additional developmental areas of emergent practice Self-monitoring of INRs access and patient education to facilitate this if wanted should be available to appropriately motivated patients and carers in line with NICE TA and standards.	There is significant impact in terms of demand and capacity at anticoagulation clinics and phlebotomy services, as well as the quality of life impact for individuals who need INR monitoring and have community mobility and participation difficulties.	May address current issues regarding time in therapeutic range, adherence and cost/demand impact on anticoagulation and community services.	http://www.anticoagulationeurope.org/files/files/Self-monitoring%20for%20patients%20Clinical%20Governance%20Resource%20Pack.pdf http://www.nice.org.uk/guidance/dg14/resources/guidance-atrial-fibrillation-and-heart-valve-disease-selfmonitoring-coagulation-status-using-pointofcare-coagulometers-the-coaguchekxs-system-and-the-inratio2ptinr-monitor-pdf
4.7 Additional areas					

ID	Stakeholder	Suggested key area for quality improvement	Why is this important?	Why is this a key area for quality improvement?	Supporting information
091	All-Party Parliamentary Group on Atrial Fibrillation	A measure should be included assessing the proportion of people over the age of 65 who receive an opportunistic manual pulse check to detect possible AF.	By introducing a specific indicator that measures the number of at-risk patients who receive opportunistic pulse checks, CCGs can ensure cost-effective detection of AF, and can put in place measures to drive effective AF management and stroke prevention. Through inclusion within the quality standard, the NHS can ensure that it drives awareness and provides incentives to deliver innovative but effective measures such as opportunistic pulse checks among those already known to be at elevated cardiovascular risk and patient-led pulse checks.	This is particularly important in patients aged over 65 as there is evidence that AF prevalence increases with age. Opportunistic screening of this age group will enable asymptomatic patients to be diagnosed early, before they have a stroke. Generally, an APGAF FOI campaign found that of the CCGs surveyed, only 38.1 per cent provide active guidance to GPs recommending they carry out pulse checks.	Please see information regarding increased prevalence of AF in people aged over 65: http://europace.oxfordjournals.org/content/14/11/1553.full-text.pdf
092	Arrhythmia Alliance	A pulse check should be carried out opportunistically on all patients 65 years+	Extensive evidence exists to show that AF prevalence increases with age, To avoid delayed diagnosis in asymptomatic patients and to avoid stroke events which are largely preventable in at least 66% of AF-stoke patients totalling between 7,000 – 8,000 per year	There is considerable variability across the country resulting in widely differing prevalence rates (QOF 2012/13). Routine pulse checks and follow up ECGs would ensure patients are detected and then able to be appropriately managed. In turn this will reduce: High levels of GP appointments and A&E admissions related to undiagnosed AF and AF-related stroke Levels of AF-stroke events which are not only costly to the NHS and care Services but also devastating to the patient and their family	AF Report 2011 hhtp://europace.oxfordjournals.org/content/14/11/1553.full.pdf+html www.preventaf-strokecrisis.org
093	Arrhythmia Alliance	Clinicians in primary care should have access to hand held and smart phone devices for AF screening providing a single lead ECG recording	While national average of AF is 1.7-1.9% (GRASP-AF), across the country there is considerable variability, from 0.3%-2.3% (based on QoF). As stated above, prompt access to	Earlier detection using hand held ECG devices will alert clinicians and patients to the condition and complications the patient may be at risk from. By accurately increasing the prevalence of AF,	NICE MTG 13 http://www.alivecor.com/research pg 27 – http://www.nhsiq.uk/media/23

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			12 lead ECGs is variable as to prompt and reliable interpretation of the ECG. However there are now a variety of hand-held single lead ECG devices available which have FDA/ approval NICE guidance / supportive clinical data, which can very easily be used within a routine primary care setting and provide immediate or very quick ECG interpretation at low cost. These supportive devices are ideal for paroxysmal AF / patients who may be delayed accessing 12 Lead ECG and in giving clarity and priority for a 12 Lead ECG	associated risks, in particular AF-related stroke, morbidity and mortality, can be appropriately managed and effectively reduced.	35841/atrialfibrillation.pdf
094	Arrhythmia Alliance	All primary care centres should have active links with a local AF lead / Rapid Access AF or Arrhythmia service	AF is a complex long-term condition in presentation and management. No single treatment for either risks, rate or symptom management, suits all AF patients. Currently AF is often sub-optimally managed in general practice and risks / symptoms prevail. As a result, primary care can feel overwhelmed, patients continue to be at risk and if symptomatic, may also continue to feel unwell due to symptoms or side-affects of ineffective therapies. This is costly to NHS services and debilitating to patients and their families /carers.	There are models of successful management across the country, and a postcode lottery exists as to access. However, whether models have a local AF lead / local cardiology support / Rapid Access AF clinic / community linked arrhythmia nurse. Where there are supportive links providing guidance, quick referral, and supportive educational development, AF prevalence is increased, anticoagulation rates greater and patient outcome and satisfaction with their care, improved. We would like a QS to ensure proactive and supportive links with an 'AF' lead or local service is implemented to ensure optimum management for all AF patients	Example models are shared n: Healthcare Pioneers, AFA 2011 NHS Improvement, AF in Primary Care 2011 http://www.heartofaf.org/service-models http://www.heartofaf.org/content/presentations-service-development
095	Atrial Fibrillation Association	**1** **A pulse check should be carried out**	There is extensive evidence that AF prevalence increases with age, with particular increase arising for 60	Currently there is considerable variability across the country resulting in widely differing prevalence rates (QOF 2012/13). Routine pulse	AF Report 2011 http://europace.oxfordjournals.org/content/14/11/1553.full.

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		opportunistically on all patients 65 years+	years+. To avoid delayed diagnosis in asymptomatic patients and to avoid stroke events which are largely preventable in at least 66% of AF-stoke patients (approx. 7,000 – 8,000 per year)	checks and follow up ECGs would ensure patients are detected and then able to be appropriately managed. In turn this will reduce: High levels of GP appointments and A&E admissions related to undiagnosed AF and AF-related stroke Levels of AF-stroke events which are not only costly to the NHS and care Services but also devastating to the patient and their family	pdf+html www.preventaf-strokecrisis.org
096	Atrial Fibrillation Association	Additional developmental areas and emerging practice: Clinicians in primary care should have access to hand held and smart phone devices for AF screening providing a single lead ECG recording	While national average of AF is 1.7-1.9% (GRASP-AF), across the country there is considerable variability, from 0.3%-2.3% (based on QOF). As stated above, prompt access to 12 lead ECGs is variable as too prompt and reliable interpretation of the ECG. However there are now a variety of hand-held single lead ECG devices available which have FDA approval / NICE guidance / supportive clinical data, which can very easily be used within a routine primary care setting and provide immediate or very quick ECG interpretation at low cost. These supportive devices are ideal for paroxysmal AF / patients who may be delayed accessing 12 Lead ECG and in providing clarity and priority for a 12 Lead ECG	Earlier detection using hand held ECG devices will alert clinicians and patients to the condition and complications the patient may be at risk from. By accurately increasing the prevalence of AF, associated risks, in particular AF-related stroke, morbidity and mortality, can be appropriately managed and effectively reduced.	NICE MTG 13 http://www.alivecor.com/research pg 27 – http://www.nhsiq.uk/media/2335841/atrialfibrillation.pdf
097	Atrial Fibrillation Association	Additional developmental areas and emerging practice: All primary care	AF is a complex long-term condition in presentation and management. No single treatment for either risks, rate	There are models of successful management across the country, and a postcode lottery exists as to access.	Example models are shared n: Healthcare Pioneers, AFA

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		centres should have active links with a local AF lead / Rapid Access AF or Arrhythmia service	or symptom management, suits all AF patients. Currently AF is often sub-optimally managed in general practice and risks / symptoms prevail. As a result, primary care can feel overwhelmed, patients continue to be at risk and if symptomatic, may also continue to feel unwell due to symptoms or side-affects of ineffective therapies. This is costly to NHS services and debilitating to patients and their families /carers.	However, whether models have a local AF lead / local cardiology support / Rapid Access AF clinic / community linked arrhythmia nurse. Where there are supportive links providing guidance, quick referral, and supportive educational development, AF prevalence is increased, anticoagulation rates greater and patient outcome and satisfaction with their care, improved. We would like a QS to ensure proactive and supportive links with an 'AF' lead or local service is implemented to ensure optimum management for all AF patients	2011 NHS Improvement, AF in Primary Care 2011 http://www.heartofaf.org/service-models http://www.heartofaf.org/content/presentations-service-development
098	Bristol-Myers Squibb / Pfizer	Key area for quality improvement 1 Additional developmental areas of emergent practice Wide variation, heterogeneity, and uncertainty around definition of 'valvular vs non-valvular AF' and therefore its clinical management – need for universal definition	It is conventional to classify AF as valvular or non-valvular. No satisfactory or official definition of these terms exists. The term 'valvular AF' is used to imply that AF is related to rheumatic valvular disease (pre-dominantly mitral stenosis) or prosthetic heart valves.	Due to some ambiguity in the various definitions, many patients with non-valvular AF could be misdiagnosed as having valvular AF and are therefore restricted to only one type of oral anticoagulant, i.e., VKA therapy	Camm AJ, Lip GYH, De Caterina R, et al. 2012 focused update of the ESC Guidelines for the management of atrial fibrillation. Eur Heart J. 2012;33:2719–2747
099	HQT Diagnostics	Test for levels of Omega-3 Index Omega-6/3 Ratio and other Fatty Acids	Increase in Omega-3 Fatty Acids may provide improvement in overall heart health and reduction in mortality from Cardio Vascular Disease	Omega-3 Index above 8% and reduction of Omega-6/3 Index may provide a reduction in Inflammation and an improvement in Atrial Fibrillation	www.expertomega3.com/omega-3-study.asp?id=13 www.lef.org/magazine/2008/7/averting-arrhythmias-with-omega-3-fatty-acids/page-01

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100	HQT Diagnostics	Test for Vitamin D	Increase of Vitamin D has been shown to provide reduction in mortality from Cardio Vascular Disease	Vitamin D level [25(OH)D] between 100-150 nmol/L has been shown to improve Atrial Fibrillation	www.vitamindwiki.com/Overview+Cardiovascular+and+vitamin+D
101	Lundbeck	Key area for quality improvement 1: Screening and treatment for alcohol misuse including alcohol dependence	Lundbeck is an ethical research-based pharmaceutical company specialising in central nervous system (CNS) disorders, such as depression and anxiety, bipolar disorder, schizophrenia, Alzheimer's, Parkinson's disease, and alcohol dependence. Lundbeck welcomes and supports this engagement exercise for the development of a Quality Standard on atrial fibrillation and recommends that screening and treatment for alcohol misuse including alcohol dependence is included as a key quality improvement area within the final guidance. There is strong evidence that increased alcohol consumption may increase the risk of atrial fibrillation in people with heart disease. Alcohol use is one of eight risk factors that jointly account for 61% of loss of healthy life years from cardiovascular deaths.1 The development of a Quality Standard on atrial fibrillation therefore	There is a strong body of evidence linking increased alcohol consumption with a higher probability of onset of atrial fibrillation (AF). Alcohol use is one of eight risk factors that jointly account for 61% of loss of healthy life years from cardiovascular diseases, 61% of cardiovascular deaths and more than three-quarters of deaths from ischaemic and hypertensive heart disease. Alcohol use also contributes to numerous adverse cardiovascular outcomes, including hypertension, haemorrhagic stroke and AF.1 A recent meta-analysis of 14 studies for instance found a 51% increase in AF for the highest versus the lowest alcohol intake of participants. Each increment of 10 g of alcohol per day increased AF risk by 8%.2 Another meta-analysis found a consistent dose-response relationship between alcohol consumption and the probability of AF onset. Women consuming 24, 60 and 120 g of alcohol daily had relative risks of AF of 1.07, 1.42 and 2.02 respectively, compared to non-drinkers. Among men, the relative risks were 1.08, 1.44 and 2.09 respectively.3 Moderate to high alcohol intake is also associated with an increased incidence of AF	1 - Parry CD, Patra J, Rehm J Alcohol consumption and non-communicable diseases: epidemiology and policy implications Addiction 2011;106:1718–1724 2 - Kodama S, Saito K, Tanaka S, Horikawa C, Saito A, Heianza Y, Anasako Y, Nishigaki Y, Yachi Y, Iida KT, Ohashi Y, Yamada N, Sone H. Alcohol consumption and risk of atrial fibrillation: a meta-analysis. J Am Coll Cardiol. 2011;57:427-36. 3 - Samokhvalov AV, Irving HM, Rehm J. Alcohol consumption as a risk factor for atrial fibrillation: a systematic review and meta-analysis. Eur J Cardiovasc Prev Rehabil. 2010;17:706-12. 4 - Liang Y, Mente A, Yusuf S et al. Alcohol consumption and the risk of incident atrial fibrillation among people with

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			represents an important opportunity to better coordinate the identification and management of alcohol misuse at a patient level, and to help ensure that local care pathways are aligned.	among people aged 55 or older with cardiovascular disease or diabetes. Among moderate drinkers, the effect of binge drinking on the risk of atrial fibrillation was similar to that of habitual heavy drinking according to a study of over 30,000 adults in 2012.4 Finally, a study assessing the association between regular alcohol consumption and incident AF among women found heavier consumption of 2 or more drinks per day had a small but statistically significant impact on an increase in the risk of AF amongst otherwise healthy middle-aged women.5 Ensuring that consideration is given to alcohol as a key risk factor for patients with AF, incorporating screening and brief interventions for alcohol, can be both clinically and cost-effective in changing a person's behaviour in reducing their alcohol intake over a period of time, as supported by evidence: Kaner et al. identified a total of 29 controlled trials from various countries, in general practice (24 trials) or an emergency setting (five trials). Participants drank an average of 306 grams of alcohol (over 30 standard drinks) per week on entry to the trial. Over 7,000 participants received a brief intervention or a control intervention, including assessment only. After one year or more, people who received the brief intervention drank less alcohol than people in the control group (average difference 38	cardiovascular disease. CMAJ October 1, 2012 doi:10.1503/cmaj.120412 5 - Conen D, Tedrow UB, Cook NR et al. Alcohol consumption and risk of incident atrial fibrillation in women. JAMA. 2008 Dec 3;300(21):2489-96. doi: 10.1001/jama.2008.755 6 - Kaner EF.S., Dickinson HO, Beyer FR, Campbell F, Schlesinger C, Heather N, Saunders JB, Burnand B, Pienaar ED. Effectiveness of brief alcohol interventions in primary care populations. Cochrane Database of Systematic Reviews 2007, Issue 2. 7 - Solberg L, Maciosek M, Edwards N, Primary Care Intervention to Reduce Alcohol Misuse: Ranking its health impact and cost effectiveness, American Journal of Preventative Medicine, Vol 34:2:143-152, February 2008

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				grams/week, range 23 to 54 grams).6 A US study review of existing evidence suggested that screening and brief counselling was cost-saving from the societal perspective and had a cost-effectiveness ratio of $1755/QALY saved from the health-system perspective. Concluding that the results make alcohol screening and counselling one of the highest-ranking preventive services among the 25 effective services evaluated using standardised methods.7 The SIPS alcohol screening and brief intervention (ASBI) research programme funded by the Department of Health tested interventions of different intensities in primary care. It found that all three intervention approaches tested reduced drinking and alcohol use disorders at 6 and 12 months post-intervention, with reductions in AUDIT score greater at 12 months than at 6 months.8	8 - Dr Ruth McGovern, Prof Eileen Kaner, Dr Paolo Deluca and Prof Colin Drummond on behalf of the SIPS research team, Alcohol Screening and Brief Intervention in Primary Care Factsheet, Institute of Psychiatry, 2012
102	Medtronic Limited	Additional developmental areas of emergent practice: Medtronic presents new evidence which was not available at the time of the scoping exercise for the updated guidance and so we would like the GDG to consider including a new section on the value of "Device Detected AF and	***Conclusion:*** *Device detected AF burden is associated with increased risk of ischemic stroke in a relatively unselected population of CIED's patients. This finding may add to the basis for timely and clinically appropriate decision-making on anticoagulation treatment."*	This key area for quality improvement is aligned with: Domain 1. Preventing people from dying prematurely Domain 2. Enhancing Quality of life for people with long-term conditions	10.1093/eurheartj/eht491 2013 " *"an analysis of* < *10,000 patients from the SOS AF Project (Stroke prevention On Strategies based on Atrial Fibrillation information from Implanted Devices) the study assessed the association between maximum daily AF burden and risk of stroke. Cardiac implanted electronic*

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		risk for stroke". In the study by Boriani et al European Heart Journal			*devices (CIED) enhance detection of AF, providing a comprehensive measure of AF burden. During a medium follow up of 24 months, 43% of 10,016 patients experienced at least I day of at least 5 minutes of AF burden and for them the medium time to maximum AF burden was sixth months. A Cox regression analyses adjusted for the CHADS2 score and the anticoagulants baseline demonstrated that AF burden was an independent predictor of ischemic stroke. Among the thresholds of ischemic burden that was evaluated I hour was associated with the highest Hazard ration (HR) for ischemic stroke i.e. 2.11 (95% CI 1.22-3.64, p value 0.008).*
103	Royal College of Physicians of Edinburgh	Key area for quality improvement 3 Implementation of the GRASP-AF tool in primary care, utilising the CHA2DS2-VASc score to assess stroke risk.	The GRASP-AF tool is software which can be used to interrogate primary care records to identify atrial fibrillation patients, assess their stroke risk (using the CHA_2DS_2-VASc score), and identify current antithrombotic treatment.	Implementation of the GRASP-AF tool across primary care would help GPs to audit their current treatment of AF patients. Use of the GRASP-AF tool could be used to identify atrial fibrillation patients at risk of stroke who are (1) not receiving any antithrombotic therapy, (2) receiving aspirin for stroke prevention, and (3) those on oral anticoagulation. Patients who fall into groups 1 and 2 should be reviewed and	Please see the 2014 NICE guidelines on Atrial Fibrillation http://www.nice.org.uk/guidance/CG180 and Grasp the initiative: action plan http://www.atrialfibrillation.org.uk/files/file/Publications/1409

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				considered for oral anticoagulation to reduce their risk of stroke (see Key area for quality improvement 1 and 2). The 'Grasp the initiative action plan' has shown that the implementation of GRASP-AF in primary care is not evenly spread across the UK.	01-GRASP%20the%20Initiative%20Action%20Plan.pdf
104	Royal College of Physicians of Edinburgh	Additional developmental areas of emergent practice Opportunistic screening for atrial fibrillation in patients at risk of stroke (those aged 65+years and those with stroke risk factors (diabetes mellitus, hypertension, vascular disease, heart failure and previous stroke/transient ischaemic attack) using new technologies. Optimising management of comorbidities.	Detection of atrial fibrillation is essential to reduce the burden of stroke. Often the diagnosis of atrial fibrillation is only made after a stroke has occurred. We should be trying to identify atrial fibrillation and treating it (with oral anticoagulation) to reduce the risk of stroke and the burden (societal and financial) associated with stroke. There is evidence that opportunistic screening is as effective as systematic screening and given the new technologies available it is likely to be more cost-effective (although this is not yet proven).	There are many emerging technologies that can be used to detect atrial fibrillation opportunistically. There are several devices available and some have published data to support their sensitivity/specificity and clinical application but the widespread implementation of such technologies in the UK (or elsewhere) has not yet been elucidated.	Scottish Intercollegiate Guidelines Network (2013) http://sign.ac.uk/guidelines/fulltext/129/index.html Moran PS, Flattery MJ, Teljeur C, Ryan M, Smith SM. Effectiveness of systematic screening for the detection of atrial fibrillation. Cochrane Database Syst Rev. 2013 Apr 30;4:CD009586. doi: 10.1002/14651858.CD009586.pub2. Lau JK, Lowres N, Neubeck L, Brieger DB, Sy RW, Galloway CD, Albert DE, Freedman SB. iPhone ECG application for community screening to detect silent atrial fibrillation: a novel technology to prevent stroke. Int J Cardiol. 2013 Apr 30;165(1):193-4. doi: 10.1016/j.ijcard.2013.01.220. Epub 2013 Mar 7.

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					Lowres N, Neubeck L, Salkeld G, Krass I, McLachlan AJ, Redfern J, Bennett AA, Briffa T, Bauman A, Martinez C, Wallenhorst C, Lau JK, Brieger DB, Sy RW, Freedman SB. Feasibility and cost-effectiveness of stroke prevention through community screening for atrial fibrillation using iPhone ECG in pharmacies. The SEARCH-AF study. Thromb Haemost. 2014 Jun;111(6):1167-76. doi: 10.1160/TH14-03-0231. Epub 2014 Apr 1. Lowres N, Neubeck L, Redfern J, Freedman SB. Screening to identify unknown atrial fibrillation. A systematic review. Thromb Haemost. 2013 Aug;110(2):213-22. doi: 10.1160/TH13-02-0165. Epub 2013 Apr 18. Review.
105	SCM 4	Key area for quality improvement 1 Improved detection of AF amongst patients age >65,	AF is common and associated with age and comorbidities.	Early detection can result in appropriate treatment to reduce the burden of stroke associated with AF	

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		especially where risk factors are present – hypertension, diabetes, heart failure, vascular disease, stroke			
106	UCLPartners Academic Health Science Network	A pulse check should be carried out opportunistically on patients >65	There is evidence that AF prevalence increases with age. Therefore in order for asymptomatic patients to be diagnosed early, before they have a stroke GPs should be encouraged to carry out routine pulse checks in all patients over 65.	Currently there is variability across the country as to known prevalence of AF compared with the predicted prevalence. Routine pulse checks in patients over 65 years would increase the known prevalence and ensure patients are detected and then managed appropriately. This will prevent sequelae such as strokes which are devastating to patients and their families and are expensive fore the NHS and social care.	http://europace.oxfordjournals.org/content/14/11/1553.full.pdf+html
107	UCLPartners Academic Health Science Network	Additional developmental areas of emergent practice Waiting list for anticoagulation clinic should be <2 weeks	Once a patient has decided to take an anticoagulant they should be able to be commenced on one as soon as possible.	Whilst they are waiting for their clinic appointment they are at risk of stroke. Speeding this up will reduce incidence of stroke in this group. Also, once patients have decided to have an anticoagulant they may have fear and concern until they are seen and we want to reduce this.	NICE commissioning guide (2013)
108	UCLPartners Academic Health Science Network	Additional developmental areas of emergent practice Clinicians in primary care should have access to hand held and smart phone devices for AF screening via single lead ECG capture	Currently the known prevalence of AF is generally well below the expected. GPs and nurses do not routinely do pulse checks any longer now that there are electronic blood pressure machines. Having electronic devices to aid GPs will increase the known prevalence of AF.	If we increase the known prevalence of AF we will prevent strokes and so reduce unnecessary morbidity and mortality for these patients.	p.27 http://www.nhsiq.nhs.uk/media/2335841/atrialfibrillation.pdf
109	UCLPartners Academic Health Science Network	Additional developmental areas of emergent practice Patients with an irregular	Patients who are found to have an irregular pulse feel frightened. It is important that they have an ECG as	There is variability across the country regarding access to ECG. In some areas they are carried out in the community, in others only in secondary	We are not aware of any literature supporting this at present.

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		pulse should have an ECG within 48hrs	a next step to getting a diagnosis for them so that they can then have this discussed in more depth. In addition, patients with AF are at risk of stroke and it is important that this risk is mitigated as soon as possible to prevent this.	care. There is variability in capability to read ECGs across the country also. Some GPs feel confident to read their own ECGs, others do not. We need to ensure equal access to all and capacity of reading of the ECGs to ensure a report is also available within the 48hrs.	
None					
110	NHS England	Thank you for the opportunity to comment on the above quality standard. I wish to confirm that NHS England has no substantive comments to make regarding this consultation.			
111	Royal College of Nursing	This is just to let you know that there are no comments to submit on behalf of the Royal College of Nursing in relation to the stakeholder engagement exercise for the atrial fibrillation quality standard.			