Rising to the challenge: Delivering QIPP by preventing AF-related stroke

Opportunities to improve the quality, safety and cost-effectiveness of NHS services that reduce the risk of stroke in patients with atrial fibrillation.

United Kingdom Clinical Pharmacy Association

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1. Executive summary

The UKCPA believes that there is an urgent need to improve Atrial Fibrillation (AF) diagnosis rates and the prescription and management of anticoagulation in order to reduce a greater number of patients' risk of AF-related stroke. By improving the prevention of AF-related stroke pathway, the NHS would not only undoubtedly save many lives and improve patient outcomes, but also support the AF community to contribute to all four elements of the Government's Quality, Innovation, Productivity and Prevention (QIPP) agenda.

A number of barriers to delivering the ideal patient pathway have been identified and are outlined in this report. The UKCPA recognises that any discussion of these challenges needs to be framed within the difficult set of circumstances facing the NHS more generally, including the recent transition to the new NHS structures, the focus on patients demanding an increasing say in their treatment regimens, and the need to cope with the demands of an ageing population.

This report breaks the challenges to delivering the ideal pathway down into where they occur during the patient pathway (screening; risk assessment; anticoagulation; and audit). They include:

- low patient awareness of arrhythmias and AF;
- inconsistent education for health care professionals on AF (symptoms, opportunistic health checks and risk assessment tools);
- significant under-diagnosis of AF and inadequate anticoagulation rates nationally;
- a lack of up-to-date, UK evidence-based clinical guidelines, which take into account newer treatments (e.g. novel oral anticoagulants);
- limited patient awareness of treatment options to support shared decision making; and
- unequal access to anticoagulation options depending on geographical location.

To overcome the challenges listed above, as well as others outlined in this report, robust and practical recommendations have been developed by a multi-disciplinary expert working group convened by the UKCPA. Each recommendation identifies the level at which action would be desirable - whether national or regional leadership is possible or indeed practical, or whether shared experience at the local level would be more useful. Specific calls to action have been identified for a number of organisations, including NICE, Clinical Commissioning Groups, the Department of Health, NHS England, and a multi-disciplinary clinician working group.

Key recommendations in the report include:

RECOMMENDATION: AF education should be prioritised by Medical, Nursing and Pharmacy Colleges and included within undergraduate programmes and Continuing Professional Development (CPD) programmes to support improved AF identification and diagnosis, as well as enhanced prescription and management of anticoagulation.

RECOMMENDATION: NICE should bring forward its timeline for the production of an AF Quality Standard, which will outline the key principles of high quality AF care across the patient pathway. This should be published alongside the forthcoming updated NICE Clinical Guideline on AF rather than after.

RECOMMENDATION: The Commissioning Development Directorate, as part of NHS England, should provide strategic guidance for commissioners about the potential to disinvest in, or re-design, some existing NHS services. In the absence of national commissioning guidance, best practice should be shared, or developed by a commissioner and multi-disciplinary clinician work group.

RECOMMENDATION: The NICE Medicines and Prescribing Centre should provide advice on the clinically appropriate use of anticoagulation including counselling guidance for pharmacists to provide patients with when new medicines are being dispensed ahead of a New Medicines Service review.

RECOMMENDATION: Commissioning groups should consider implementing the direction provided by NHS Chief Executive, Sir David Nicholson, in his report of December 2011, 'Innovation, Health and Wealth', to support the rapid and consistent implementation of NICE guidance on new medicines throughout the NHS.

The UKCPA believes that the recommendations in this report can support the delivery of streamlined services in the prevention of AF-related stroke. We will continue to work with colleagues in the AF community to ensure that the NHS prioritises the prevention of AF-related stroke and that patients with AF receive the best care and treatment possible.

2. Foreword

The United Kingdom Clinical Pharmacy Association (UKCPA) – a member organisation for pharmacists, technicians and health care professionals who provide clinical pharmacy services to patients – is delighted to present this examination of existing stroke prevention in atrial fibrillation services in the NHS. We have enjoyed working closely with an expert working group, consisting of leading multi-disciplinary colleagues from cardiovascular and anticoagulation services across the UK, to develop this important analysis of existing pathways and to outline a set of recommendations to improve the quality, safety and cost-effectiveness of stroke prevention in atrial fibrillation (AF) services.

This report outlines the challenges to delivering the ideal patient pathway for preventing AF-related stroke: one which effectively reduces the risk of stroke in patients with AF by drawing on best practice, delivers high quality care and supports access to treatments, while at the same time maintaining cost control and delivering cost-efficient anticoagulation services.

It aims to:

1. Identify the challenges facing prevention of AF-related stroke services and to delivering Quality, Innovation, Productivity and Prevention (QIPP) savings, as perceived by the expert working group at each stage of the current pathway.
2. Highlight the QIPP opportunities that can be maximised if these challenges are overcome.
3. Outline robust, practical and achievable recommendations to address these challenges to support a further reduction in stroke risk for patients with AF, whilst remaining mindful of the cost challenges facing the NHS.

This report has been produced following a multi-disciplinary, half day policy roundtable meeting held in London on 30th April 2012. The meeting set out to examine the implications of the introduction of the class of novel oral anticoagulants (NOACs), when used within their licensed indications and following NICE approval, for the quality and cost of stroke prevention in AF services. We were delighted with the attendance of an impressive mix of multi-disciplinary colleagues across the anticoagulation and stroke prevention fields from primary, secondary and tertiary care. The input of clinicians, commissioners and patient representatives ensured that we had a very high level of debate, drawing on various perspectives.

It became apparent very quickly that almost everyone around the table felt that this was a timely opportunity to address the wide-ranging issue of reform of the entire prevention of AF-related stroke pathway. That is, from improving AF identification and diagnosis, to effectively reducing patients' risk of stroke by prescribing and managing anticoagulation, through to appropriate referral to secondary and tertiary care, all framed within a streamlined commissioning process. There was clear consensus that only an examination of the entire pathway could meet the goal of effectively reducing the risk of stroke in patients with AF in a cost-effective, safe and high quality manner. This is a significant challenge given that we know that up to half of people with AF remain undetected[1], that GRASP-AF data suggests that only just over 50 % of AF patients receive anticoagulation (warfarin)[2], and that the AF population is projected to double over the next few decades[3].

We are grateful to all colleagues who have worked with us, as part of an expert working group (members listed below), during the scoping meeting which took place in April 2012 and in the production of this report. We strongly believe the recommendations contained within this report can support the delivery of improved prevention of AF-related stroke services and we look forward to working with colleagues throughout the NHS to implement these recommendations. Ultimately, we are calling on the AF community to work together to achieve our shared goal: to reduce the risk of avoidable - and potentially fatal - stroke in patients with AF, by delivering the safe, cost-effective and high quality NHS care that patients expect.

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[1] *Atrial Fibrillation Association and Anticoagulation Europe, The AF Report – Atrial Fibrillation: Preventing a stroke crisis, 2011*

[2] *NHS Improvement, GRASP-AF data uploads*

[3] *Miyasaka Y, et al., Secular trends in incidence of atrial fibrillation in Olmsted County, Minnesota 1980 to 2000, and implications on the projections for future prevalence, Circulation, 2006*

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3. About atrial fibrillation and the risk of stroke

Atrial Fibrillation (AF) is the most common heart arrhythmia[4], characterised by an erratic and often rapid heart rhythm[5]. It affects more than one million people in the UK[6]. Since the risk of AF increases with age[7], it is estimated that the AF population will double by 2050[8] as life expectancy increases.

Patients with AF have a five-fold risk of stroke compared with patients without AF[9]. The lack of proper and regular contraction in the atria (upper chambers of the heart) can cause blood to stagnate, which can lead to clot formation. If part of the blood clot breaks off, it can travel through the body, reach the brain, and cause a stroke[10]. It is estimated that 15% of all strokes in the UK are directly attributable to AF[11] - this equates to approximately 12,500 AF-related strokes each year in the UK. AF-related strokes tend to be more severe than non-AF related strokes, with a 20% increased likelihood of death and 60% increased likelihood of disability compared to non AF-strokes[12]. They are therefore associated with a longer hospital length of stay[13]. AF-related strokes can not only have a potentially devastating impact on people and their families, but they can also present a significant cost burden for the NHS to manage.

Anticoagulants interfere with the clotting cascade to prevent blood clots forming so easily. They can reduce the risk of stroke by nearly two thirds: about 6 in 10 strokes that would have occurred in people with AF can be prevented through effective anticoagulation[14]. It is therefore clinically effective to prescribe anticoagulation to AF patients, when considered alongside a patient's stroke risk, as well as their bleeding risk.

Not only is anticoagulation of AF patients clinically effective in reducing the risk of stroke, stroke prevention in AF patients is demonstrably cost-effective. Warfarin has been the only oral anticoagulant recommended for over 50 years. However, NICE has now recommended the NOACs dabigatran, rivaroxaban and apixaban for the prevention of AF-related stroke as a clinically and cost-effective use of NHS resources. Additional NOACs are in development.

The prevention of AF-related stroke is not only vital to improving patient outcomes, delivering high quality care and supporting quality patient experiences, but it is also a cost-effective use of NHS resources.

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[4] NHS Choices http://www.nhs.uk/conditions/Atrial-fibrillation/Pages/Introduction.aspx accessed 15th July 2012

[5] Patient.co.uk http://www.patient.co.uk/health/Atrial-Fibrillation.htm accessed 15th July 2012

[6] Atrial Fibrillation Association http://www.atrialfibrillation.org.uk/patient-information/atrial-fibrillation.html accessed 15th July 2012

[7] Atrial Fibrillation Association http://www.atrialfibrillation.org.uk/patient-information/causes.html accessed 15th July 2012

[8] Camm J et al., Guidelines for the management of atrial fibrillation: The Task Force for the Management of Atrial Fibrillation of the European Society of Cardiology (ESC. Eur. Heart J., October 1, 2010; 31(19): 2369 –2429

[9] SIGN Guidelines http://www.sign.ac.uk/guidelines/fulltext/36/section3.html accessed 15th July 2012

[10] Atrial Fibrillation Association http://www.atrialfibrillation.org.uk/patient-information/risks-atrial-fibrillation.html accessed 15th July 2012

[11] Lip GYH et al., Atrial fibrillation and stroke prevention. Lancet Neurol 2007;6:981–93

[12] Lin HJ et al., Stroke severity in atrial fibrillation: the Framingham study. Stroke 1996; 27:1760–4.

[13] NHS Improvement 'Commissioning for Stroke Prevention in Primary Care – the role of AF'

[14] Patient.co.uk http://www.patient.co.uk/health/Atrial-Fibrillation.htm accessed 15th July 2012

4. A pathway for preventing AF-related stroke

Screening for Atrial Fibrillation: Irregular pulse is detected via manual pulse palpation and AF is confirmed via ECG. Ideally, patient is already aware of arrythmias, and more specifically about AF, and additional information is provided to the patient.

Diagnosis of Atrial Fibrillation

Risk assessment:
Stroke and bleeding risk are assessed using $CHADS_2$ or CHADs-VASc and HAS-BLED

Anticoagulation:
Patient is initiated on anticoagulation in accordance with clinical best practice. Treatment choice is made jointly between the patient and prescribing clinician

Initiation and Audit of Anti-Coagulation

Audit:
Regular monitoring is undertaken of the appropriate intervention to prevent the risk of stroke, using a tool such as GRASP-AF

* Referral for treatment of AF symptoms (rate control vs rhythm control)

5. The key challenges in preventing AF-related stroke

Discussion of the prevention of AF-related stroke pathway needs to be framed within the current challenging set of circumstances for these services in the NHS.

We have recently undergone a period of significant NHS reform, which sees commissioners and clinicians re-designing local services and held to account for demonstrating improved outcomes. At the same time, commissioners must demonstrate careful cost control and deliver efficiency savings due to the QIPP challenge. This requires the NHS to achieve £20 billion efficiency savings by 2014/15. NHS England has also confirmed that the QIPP programme will continue into the next comprehensive spending review period. However, the NHS has been tasked to make these savings whilst keeping quality as its organising principle.

In addition, when considering prevention of AF-related stroke services for the future, the NHS has to take into consideration that patients are demanding an increasing say in their treatment regimens through the focus on shared decision making. It is also worth noting that these services will need to be able to cope with the increasingly ageing population, which is estimated to see the AF population more than double by 2050[15].

There are also significant challenges around the national under-diagnosis of AF and inadequate anticoagulation rates. National data suggests that up to half of the AF population remain undiagnosed[16] and GRASP-AF data demonstrates a 52-53 % national rate of warfarin anticoagulation for AF[17]. Given that evidence suggests that, without adequate anticoagulation, one in every twenty AF patients is expected to suffer a stroke each year[18], there must be a national, clinically robust structure in place that supports higher rates of diagnosis and optimal anticoagulant management to prevent strokes. Such a structure would also help to minimise the costs associated with managing those who survive their stroke.

We believe that NHS colleagues and leaders now have a unique and timely opportunity to examine how an ideal prevention of AF-related stroke pathway can be delivered throughout the NHS. This is: in light of the introduction of a range of newer treatments and the need to determine how the higher costs of NOACs, when used within their licensed indications, can be offset to support patient and clinician access to treatments; amidst pressures to deliver cost-savings and examine where efficiencies can be found in these services; ahead of the NHS reforms where clinical commissioners will be held accountable for improved patient outcomes and patient experiences; and looking ahead to the projected doubling of the AF population and the prevalence of AF-related stroke. We believe that now is the time to work together to deliver forward-thinking solutions to the growing and increasingly urgent challenge of preventing AF-related stroke.

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[15] *Miyasaka Y, et al., Secular trends in incidence of atrial fibrillation in Olmsted County, Minnesota 1980 to 2000, and implications on the projections for future prevalence, Circulation, 2006*

[16] *Atrial Fibrillation Association and Anticoagulation Europe, The AF Report – Atrial Fibrillation: Preventing a stroke crisis, 2011*

[17] *NHS Improvement, GRASP-AF data uploads*

[18] *Dorian P, et al, The impairment of health related quality of life in patients with intermittent atrial fibrillation: Implications for the assessment of investigational therapy, Journal of the American College of Cardiology, 36, 2000*

6. The QIPP opportunity in preventing AF-related stroke

The QIPP challenge to the NHS is to save £20 billion by 2014/15, whilst keeping quality as its organising principle. We believe that by making improvements to the services which seek to prevent AF-related stroke, the AF community can help to deliver all four elements of the QIPP agenda. The ways in which prevention of AF-related stroke services can contribute are outlined below.

Quality

The delivery of safe and effective care is integral to the QIPP challenge. Improving the prevention of AF-related stroke pathway can deliver quality through: diagnosing more cases of AF; improving rates of anticoagulation initiated in a timely manner and in line with the latest clinical evidence and best practice; and improved monitoring of anticoagulation treatment. It also fits into the QIPP programme's ambition regarding patient experience, by ensuring the reduced risk of stroke and delivering shared decision making in treatment choice.

Innovation

The ideal pathway for the prevention of AF-related stroke outlined in this report supports the removal of antiplatelet therapy as a sole agent in line with latest clinical evidence. In addition, by focusing on anticoagulation treatment options, the updated pathway supports a standard approach to the uptake of NOACs and the optimum management of patients on warfarin.

The ideal pathway also allows for the examination of how anticoagulation services can be re-designed to ensure the efficient use of resources and improve patient outcomes and experience. For example, it allows for the consideration of delivering anticoagulation services closer to home; supporting patient self-testing and self-management of International Normalised Ratio (INR levels measure how long it takes blood to form a clot and is used to determine the effects of oral anticoagulants on the clotting system); and, as experience of using NOACs grows, reviewing resources associated with anticoagulation clinics and decommissioning service activity where appropriate.

Productivity

AF-related strokes not only have a potentially devastating impact on people and their families, but they can present a significant cost burden for the NHS to manage. Improved rates of anticoagulation of AF patients facilitated by the ideal pathway outlined will be clinically effective in reducing the risk of stroke, as well as being cost-effective. In addition, there is the potential for releasing cost savings from the re-design of anticoagulation services.

Prevention

It is estimated that 15 % of all strokes in the UK are directly attributable to AF[19] – this equates to approximately 12,500 AF-related strokes each year in the UK[20]. Improving prevention of AF-related stroke services will deliver a reduction in these figures.

[19] *Lip GYH et al., Atrial fibrillation and stroke prevention. Lancet Neurol 2007;6:981–93*

[20] *Lin HJ et al., Stroke severity in atrial fibrillation: the Framingham study. Stroke 1996; 27:1760–4.*

7. Perceived barriers to delivering the pathway for preventing AF-related stroke and QIPP improvements

This section of the report outlines the key barriers as perceived by the expert working group to delivering a high quality and cost-effective prevention of AF-related stroke pathway. The ideal pathway outlined in this report is one which identifies and diagnoses patients with AF; appropriately prescribes anticoagulant therapies to patients at risk of stroke; and which effectively manages these patients through follow up appointments and secondary care referral where necessary, using staff with appropriate skill and knowledge. Ultimately, it reduces the risk of stroke in patients with AF in a cost-effective, safe and high quality manner.

The barriers have been grouped according to where they occur at each stage of the pathway. We have also included some 'general' barriers that were raised at the meeting. In addition to all of the challenges agreed and outlined below, the group identified some issues as being of higher priority to address than others. The priority challenges are indicated below.

Part 1: Screening

Ideal Pathway Statement: Irregular pulse is detected via manual pulse palpation and AF is confirmed via ECG. Ideally, patient is already aware of arrythmias, and more specifically about AF, and additional information is provided to the patient.

(i) **PRIORITY CHALLENGE TO ADDRESS: It was perceived by the expert working group that there is low patient awareness of arrhythmias and AF, including symptoms and the risk of stroke.** Ideally, patients should be aware of AF as a condition, be able to recognise the symptoms associated with it, and know to seek medical help if these symptoms are self-identified. Improved patient awareness about AF will support a higher diagnosis rate and drive up the percentage of patients who are anticoagulated to reduce their risk of stroke.

(ii) **CHALLENGE TO ADDRESS: The expert working group felt that education about AF-related stroke remains inconsistent and under prioritised in medical, nursing and pharmacy courses leading to relatively poor professional awareness of the condition across the disciplines.** Health care professionals must be better informed about the symptoms of AF and the opportunity to identify a suspected arrhythmia through opportunistic health checks. Improved education about the prevention of AF-related stroke across the disciplines will increase awareness of the condition and how it is managed, leading to higher rates of diagnosis, better treatment and, in consequence, stroke prevention.

OVERCOMING THESE BARRIERS WILL ADDRESS THE CHALLENGE OF UNDER-DIAGNOSIS AND DELIVER QIPP IMPROVEMENTS

Part 2: Risk assessment

Ideal Pathway Statement: Stroke and bleeding risk are assessed using $CHADS_2$ or CHADs-VASc and HAS-BLED.

(i) **PRIORITY CHALLENGE TO ADDRESS: The expert working group felt that education for health care professionals about AF-related stroke risk assessment tools remains inconsistent leading to relatively poor professional awareness across the disciplines.** Health care professionals must be better informed about how strokes can be avoided through the use of risk assessment tools (including software tools to identify AF patients at risk of stroke, such as GRASP-AF) and appropriate treatment options.

(ii) **CHALLENGE TO ADDRESS: The expert working group argued that there needs to be improved education for clinicians on the benefits and management of anticoagulation to improve staff competencies in this area.** Health care professionals must have greater knowledge about anticoagulation in general. If a greater number of patients are supported by clinicians to spend longer periods of time in therapeutic range (TTR), this will significantly reduce the number of patients experiencing a stroke[21].

(iii) **PRIORITY CHALLENGE TO ADDRESS: The working group agreed that there is under-diagnosis of AF and inadequate anticoagulation rates nationally.** GRASP-AF data demonstrates a 52-53 % national rate of warfarin anticoagulation for AF[22]. Given that the AF population is projected to more than double by 2050[23] and evidence suggests that, without adequate anticoagulation, one in every twenty AF patients is expected to suffer a stroke each year[24], there must be a national, clinically robust structure in place that supports and optimises anticoagulant initiation and management to prevent strokes and save the costs associated with managing those who survive stroke.

OVERCOMING THESE BARRIERS WILL ADDRESS THE CHALLENGE OF IMPROVING RATES OF ANTICOAGULATION INITIATED IN A TIMELY MANNER AND IN LINE WITH LATEST CLINICAL EVIDENCE AND DELIVER QIPP IMPROVEMENTS

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[21] *NHS Improvement, Anticoagulation for Atrial Fibrillation: a simple overview to support the commissioning of quality services.*

[22] *NHS Improvement, GRASP-AF data uploads*

[23] *Camm J et al., Guidelines for the management of atrial fibrillation: The Task Force for the Management of Atrial Fibrillation of the European Society of Cardiology (ESC. Eur. Heart J., October 1, 2010; 31(19): 2369 –2429*

[24] *Dorian P, et al, The impairment of health related quality of life in patients with intermittent atrial fibrillation: Implications for the assessment of investigational therapy, Journal of the American College of Cardiology, 36, 2000*

Part 3: Anticoagulation

Ideal Pathway Statement: Patient is initiated on anticoagulation in accordance with clinical best practice. Treatment choice is made jointly between the patient and prescribing clinician.

(i) **CHALLENGE TO ADDRESS: There is a lack of national or regional guidance / shared practice on managing investment in new AF-related stroke prevention treatments or services alongside associated disinvestments and demonstrable outcome improvements.** The lack of such guidance may increase the risk of patchy implementation of NICE guidance on the use of anticoagulants. This is because some Cardiac and Stroke Networks and the new Cardiovascular Strategic Clinical Networks may provide guidance in their locality about effective service re-design to improve cost-efficiency of services and fund treatment options, while in other areas, individual Clinical Commissioning Groups (CCGs) may receive no guidance on the issue. There is a risk that this may lead to inconsistencies across England in patient access to available treatment options and the design of prevention of AF-related stroke services.

(ii) **CHALLENGE TO ADDRESS: There is no England-wide national clinical guideline recommending up-to-date, evidence-based best practice in anticoagulation in AF.** NICE clinical guideline 36 on AF was published in June 2006 and is not due to be updated until 2014. Given the developments in treatment options recommended by NICE for the prevention of AF-related stroke, clinicians have no national guidelines to follow which recommend evidence-based best practice in relation to newer treatments. While position statements on the use of NOACs have been produced by and for individual professional groups and across some localities, there is a risk that this may lead to inconsistency in the clinical use and uptake of NOACs across the NHS. In addition, some localities may choose to adopt the recommendations for AF detection and stroke prevention published by the European Society of Cardiology (ESC) in August 2012, while others may not.

Further to best practice outlined by the 2012 ESC Guidelines which includes NOAC prescribing, evidence-based guidelines and recommendations would be particularly useful in relation to appropriate follow up periods for patients who have been prescribed NOACs. Guidelines would also be useful which recommend appropriate referral to secondary care, including when patients can be referred to a GP with a special interest in cardiology before secondary care referral.

Aspirin with or without clopidogrel should only be considered where warfarin and NOACs cannot be used due to allergy or contra-indications. Low dose aspirin can have a small impact on reducing the risk of stroke in people with AF, but it is less effective than warfarin[25] and has a similar risk of bleeding. While the risk of stroke is further reduced with the combination of aspirin/clopidogrel over aspirin alone, the risk of major bleeding is also significantly increased. Proton pump inhibitors (PPIs) to reduce aspirin/clopidogrel gastrointestinal bleeding risk should be used where appropriate.

(iii) **PRIORITY CHALLENGE TO ADDRESS: The expert working group perceived that there is limited patient awareness of treatment options / tools to support shared decision making of treatment options.** Patients should be actively involved in making a shared decision about their treatment regimen with their clinician, based on their stroke risk, lifestyle and personal preferences. However, patient choice may not always be clinically appropriate and clinicians reserve the right to prescribe to the contrary to patient preference – though where this occurs, the rationale must be explained fully to the patient.

(iv) **CHALLENGE TO ADDRESS: The expert working group felt that there is unequal access to anticoagulation options depending on geographical location.** Ideally, patients will be able to access the full range of treatment options for the prevention of AF-related strokes regardless of which CCG or Cardiovascular Strategic Clinical Network they fall under, if these options are clinically appropriate for them and have NICE approval. At present, aspirin is being used in a larger proportion of patients despite an inferior evidence base in stroke prevention and significant associated bleeding risks.

OVERCOMING THESE BARRIERS WILL ADDRESS THE CHALLENGE OF UNDER-ANTICOAGULATION AND DELIVER QIPP IMPROVEMENTS

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[25] *Lip GY, Edwards SJ. Stroke prevention with aspirin, warfarin and ximelagatran in patients with non-valvular Atrial Fibrillation: a systematic review and meta-analysis. Thromb Res 2006; 118: 321–33.*

Part 4: Audit

Ideal Pathway Statement: Regular monitoring is undertaken of the appropriate intervention to prevent the risk of stroke, using a tool such as GRASP-AF.

(i) **CHALLENGE TO ADDRESS: The expert working group perceived that there is potential difficulty / inconvenience / dislike of regular INR monitoring at anticoagulation clinics for patients prescribed warfarin. Careful consideration of the needs of the patient for warfarin monitoring must be considered when starting warfarin.** Ideally, INR monitoring for patients prescribed warfarin should be practical to ensure that they can adhere to the monitoring required. For some patients this may mean self-monitoring at home or local anticoagulant services in line with the Government's ambition to move care closer to home. This is particularly important for patients who find travel difficult, owing to disability issues, or associate stigma with INR testing at an anticoagulation clinic. However, it is also true that for some patients, regular visits to anticoagulation clinics may be a welcome opportunity for social interaction. More importantly, monitoring at a clinic ensures monitoring does take place, whereas there is a possibility of low compliance for self-testing at home. Ultimately, patients should be involved in their choice of treatment where clinically appropriate.

(ii) **CHALLENGE TO ADDRESS: Inadequate anticoagulation rates.** Uptake of GRASP-AF is relatively low – only 26 % of practices upload their data onto CHART On-Line[26]. Given that this is voluntary, one can assume more practices run GRASP-AF regularly than the number that upload their data, but there is an opportunity to further support the uptake of audit tools.

OVERCOMING THESE BARRIERS WILL HELP WITH THE EXAMINATION OF HOW ANTICOAGULATION SERVICES CAN BE RE-DESIGNED TO IMPROVE PATIENT OUTCOMES AND EXPERIENCES AND DELIVER QIPP IMPROVEMENTS.

General

(i) **PRIORITY CHALLENGE TO ADDRESS – The lack of national or regional guidance on a robust, active and ongoing clinical governance and quality improvement structure for AF-related stroke prevention.** Without such guidance, there is a lack of support for structures which develop an understanding of what prevention of AF-related stroke services are required, their associated costs and how outcomes can be measured and improved.

(ii) **CHALLENGE TO ADDRESS: AF services largely continue to be stand-alone services, rather than part of an integrated and broader cardiovascular service.** The lack of an integrated and broader cardiovascular pathway across regions does little to support outcomes measurement and cost control.

(iii) **CHALLENGE TO ADDRESS: There is no national or regional system which flags quickly to Health Care Professionals when a patient is receiving an anticoagulant.** A simple and effective system which flags whether a patient is taking an oral anticoagulant can be vitally important in an emergency, before procedures or further treatments are initiated. Yellow books act as a prompt for clinicians that a patient has been prescribed warfarin, but they do not extend to the newer treatments. Similar cards for NOACs have been developed by pharmaceutical companies as part of their risk management plans and have been approved by the European Medicines Agency. Ideally, a single card would cover all anticoagulants and include a space to name the specific anticoagulant that a patient has been prescribed. Alternatively, an electronic registry would have the same effect with an additional benefit of prompting appropriate follow up for patients.

[26] *NHS Improvement, GRASP-AF data uploads*

8. Recommendations to deliver QIPP in primary care by preventing AF-related stroke

This section takes each of the challenges outlined in the previous section and suggests a series of recommendations in order to support a prevention of AF-related stroke pathway that improves patient outcomes in a cost-effective manner.

For each challenge, and subsequent recommendation, we have sought to identify the level at which action would be ideal (considering whether national or regional leadership is possible or indeed practical, or whether shared experience at the local level would be more useful). We have also considered which individuals, groups or organisations might be best placed to provide leadership for each recommendation and suggest ways in which the activities might be disseminated. The suggestions are framed within the context of the new NHS structures and the QIPP challenge to the NHS.

These recommendations have been endorsed by the multi-disciplinary group that attended the meeting and we hope they will be used to begin to shape discussions about how the prevention of AF-related stroke pathway could be improved. We would be delighted to discuss how any of these recommendations could be re-shaped or taken forward by working with interested colleagues, groups, bodies or organisations.

Part 1: Screening

PATHWAY GOAL: *Irregular pulse is detected via manual pulse palpation and AF is confirmed via ECG. Ideally, patient is already aware of arrythmias, and more specifically about AF, and additional information is provided to the patient.*

(i) **To address the priority challenge of low patient awareness about AF, its symptoms and managing the risk of stroke, we recommend:**

✔ The Department of Health / NHS England / pharmaceutical industry should provide funding support for the Atrial Fibrillation Association and Anticoagulation Europe to develop a template patient information leaflet about the prevention of AF-related stroke. The leaflet should be hosted on the NHS Choices website, signposted to CCGs, made available in GP practices, and provided to all new patients diagnosed with AF.

✔ Consideration should be given by the Department of Health / NHS England / pharmaceutical industry to provide funding support for the AF patient group community to develop and deliver a patient-facing national awareness raising campaign about AF during Heart Rhythm Week.

(ii) **To address the challenge, that prevention of AF-related stroke education on treatment options remains inconsistent and under prioritised in medical, nursing and pharmacy education leading to relatively poor professional awareness across the disciplines, we recommend:**

✔ AF and stroke prevention education must be prioritised by Medical, Nursing and Pharmacy Colleges in undergraduate curriculums and included within Continuing Professional Development (CPD) programmes to support improved AF identification and diagnosis. Education should include how to diagnose AF and how to prevent strokes through the appropriate use of treatment options available.

Part 2: Risk Assessment

PATHWAY GOAL: *Patient is initiated on anticoagulation in accordance with clinical best practice. Treatment choice is made jointly between the patient and prescribing clinician.*

(i) **To address the priority challenge that education for health care professionals about AF-related stroke risk assessment tools remains inconsistent leading to relatively poor professional awareness across the disciplines, we recommend:**

✔ AF education for health care professionals must include risk assessment tools, such as HAS-BLED to assess bleeding risk and the use of validated stroke risk stratification schemes such as $CHADS_2$ or CHA_2DS_2VASc software tools, which have been developed to support clinicians to identify AF patients at varying risk of stroke. One example of such a tool is GRASP-AF, which provides an effective mechanism for interrogating GP practices' AF registers and identifying patients with a high risk of stroke.

(ii) **To address the challenge that health care professionals need to be better informed about the benefits and management of anticoagulation in general, we recommend:**

✔ AF education for health care professionals needs to drive improved staff competencies around understanding of the benefits and management of anticoagulation.

(iii) **To address the priority challenge of under-diagnosis of AF nationally, and the fact that only approximately 50% of patients are prescribed anticoagulation[27], we recommend:**

- ✔ Benefits would be seen if NICE brought forward its timeline for the production of an AF Quality Standard, which will outline the key principles of high quality AF care across the patient pathway. We recommend this is published alongside the updated NICE Clinical Guideline on AF rather than after.
- ✔ In the absence of a NICE AF Quality Standard, guidance is required and must be developed by a multi-disciplinary group, and disseminated via Cardiovascular Strategic Clinical Networks to CCGs and healthcare professionals, setting out the roles and responsibilities for AF diagnosis and prevention of AF-related stroke (who does what and when, including taking pulse checks, prescribing anticoagulation, and providing patient information).
- ✔ The UK National Screening Committee should consider the evidence for a national screening programme for AF in people aged 65 or older.
- ✔ In the absence of a national screening programme and in line with the recommendation contained within the 2012 European Society of Cardiology (ESC) Guidelines for the Management of Atrial Fibrillation[28], commissioners should ensure that primary care clinicians undertake opportunistic screening of people aged 65 years or older by pulse palpation, followed by an ECG in those with an irregular pulse. For example, by building pulse palpation into the electronic templates for chronic diseases.
- ✔ Commissioners must ensure they prioritise AF diagnosis and stroke prevention when agreeing resources and designing local services, which are responsive to patient needs. Joint Strategic Needs Assessments should be used to analyse the elderly population in the area, and therefore the population at risk of AF, and local commissioning levers should be used to support a reduction in stroke risk, including: using the Quality Outcomes Framework to incentivise higher uptake of GRASP-AF and anticoagulation; designing local CQUINs to further incentivise appropriate anticoagulation; using Local Enhanced Services (locally developed services designed to meet local health needs commissioned on top of the core services provided by primary care) to reduce unnecessary referral of AF patients who can be managed in the community rather than in secondary care; and demonstrating delivery at the local and regional levels towards the priorities contained within the Cardiovascular Outcomes Strategy and Domain One of the NHS Outcomes Framework, 'preventing people from dying prematurely'.

Part 3: Anticoagulation

PATHWAY GOAL: *Patient is initiated on anticoagulation in accordance with clinical best practice. Treatment choice is made jointly between the patient and prescribing clinician.*

(i) **To address the challenge that little guidance or shared practice exists on managing investment in new AF-related stroke prevention treatments or services alongside associated disinvestments and demonstrable outcome improvements, we recommend:**

- ✔ Greater consistency might be seen if the Commissioning Development Directorate, as part of NHS England, provided strategic guidance for commissioners about the potential to disinvest in, or re-design, existing NHS services in order to effectively commission prevention of AF-related stroke services which are cost-effective and improve patient outcomes. This national guidance should provide a template, which Cardiovascular Strategic Clinical Networks and CCGs can adapt to meet local needs.
- ✔ In the absence of national commissioning guidance, best practice should be shared, or developed by a commissioner and multi-disciplinary clinician working group, which examines the potential for the re-design of local prevention of AF-related stroke pathways in order to improve patient outcomes and cost efficiency. The guidance should be widely disseminated to Cardiovascular Strategic Clinical Networks once complete, and provide a template which CCGs can adapt to meet local needs.

(ii) **To address the lack of a national clinical guideline recommending up-to-date, evidence-based best practice in anticoagulation throughout the NHS, we recommend:**

- ✔ Clinicians should follow the recommendations contained within the 2012 ESC Guidelines on the Management of Atrial Fibrillation[29], both as 'general' best practice including opportunistic screening for AF in patients over 65 and in the use of CHA_2DS_2VASc to assess stroke risk, and on the clinically appropriate use of anticoagulation for preventing stroke in AF. Furthermore, the 2012 ESC guidelines strongly recommend an important clinical practice change, towards more focus on identification of 'truly low-risk' patients with AF (that is, 'age <65 and lone AF (irrespective of gender) or CHA_2DS_2VASc score=0') instead of trying to focus on identifying 'high-risk' patients. Once the 'truly low-risk' patients (who do not need any antithrombotic therapy) have been identified, all other AF patients with ≥1 risk factors can be considered for effective stroke prevention, which is oral anticoagulation.

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[27] *NHS Improvement, GRASP-AF data uploads*

[28] *Camm AJ et al. Guidelines for the management of Atrial Fibrillation: European Society of Cardiology (ES). 2012 P5 available at http://www.escardio.org/guidelines-surveys/esc-guidelines/GuidelinesDocuments/Guidelines_Focused_Update_Atrial_Fib_FT.pdf*

[29] *Camm AJ et al. Guidelines for the management of Atrial Fibrillation: European Society of Cardiology (ES). 2012 P5 available at http://www.escardio.org/guidelines-surveys/esc-guidelines/GuidelinesDocuments/Guidelines_Focused_Update_Atrial_Fib_FT.pdf*

- ✔ In the absence of an update to the NICE clinical guideline on AF before 2014, a group of clinical experts should together develop a set of best practice recommendations about the appropriate management and referral standards for patients who are prescribed anticoagulants. This should be drafted by leaders from the stroke prevention fields, endorsed by the Medical, Pharmacy and Nursing Colleges, and then signposted to health care professionals by the Medical Colleges and the Cardiovascular Strategic Clinical Networks.
- ✔ The NICE Medicines and Prescribing Centre should provide advice on the clinically appropriate use of anticoagulation including counselling guidance for pharmacists to provide patients with when these medicines are being dispensed ahead of New Medicines Service review.

(iii) **To address the challenge of limited patient involvement or choice in deciding their treatment options, we recommend:**

- ✔ The section addressing 'treatments' on the NHS Choices website[30] must be updated to include the latest information and treatment options for anticoagulation.

(iv) **To address the potential inequality in access to prevention of AF-related stroke treatments depending on geographical location and based on cost of treatments, we recommend:**

- ✔ Relevant Medical, Pharmacy and Nursing Colleges should provide clinical leadership for Cardiovascular Strategic Clinical Networks, GPs and clinical pharmacists by providing prescribing guidance to identify which anticoagulant agents are appropriate for particular patient groups.
- ✔ Commissioning groups should consider implementing the direction provided by NHS Chief Executive, Sir David Nicholson, in his report of December 2011, 'Innovation, Health and Wealth', to support the rapid and consistent implementation of NICE guidance throughout the NHS. They must ensure treatments which have been recommended by NICE as both clinically and cost-effective are on local formularies and available to patients within 90 days of positive guidance being published.
- ✔ The Commissioning Development Directorate, as part of NHS England, should consider providing strategic guidance for commissioners about how services can be re-designed to improve cost-efficiency of the prevention of AF-related stroke pathway, and therefore reduce inequalities in access to all anticoagulation options based on cost. This national guidance should provide a template which Cardiovascular Strategic Clinical Networks and CCGs can adapt to meet local needs.
- ✔ In the absence of nationally developed commissioning guidance, best practice should be shared, or developed by a commissioner and multi-disciplinary work group, which examines the potential for the re-design of local prevention of AF-related stroke pathways in order to improve cost-efficiency and reduce cost barriers to the uptake of NOACs. The guidance should be disseminated to Cardiovascular Strategic Clinical Networks once complete, and provide a template, which the networks and CCGs can adapt to meet local needs.

Part 4: Audit

PATHWAY GOAL: *Regular monitoring is undertaken of the appropriate intervention to prevent the risk of stroke, using a tool such as GRASP-AF.*

(i) **To address the potential difficulty / inconvenience / dislike of regular INR monitoring at anticoagulation clinics for patients prescribed warfarin, we recommend:**

- ✔ National guidance should be produced by a multi-disciplinary group about the safety, efficacy and cost of self-monitoring for warfarin at home, compared to near patient testing. The guidance should: list those patients for whom self-testing might be clinically appropriate; consider how anticoagulation clinics might be decommissioned or re-designed to release potential cost-savings which might be used to fund self-monitoring machines for appropriate patients; consider the quality assurance and governance arrangements necessary to implement patient self-monitoring within the context of an NHS service; and consider alternative treatment options where INR monitoring is not desired. The guidance should be disseminated to Cardiovascular Strategic Clinical Networks once complete, and provide a template which these networks and CCGs can adapt to meet local needs.

[30] *Available at http://www.nhs.uk/Conditions/Atrial-fibrillation/Pages/Treatment.aspx*

General

(i) **To address the priority challenge of little and / or inconsistent guidance on a robust, active and on-going clinical governance and quality improvement structure, we recommend:**

- ✔ NHS England should develop national commissioning guidance, drawing on the NICE AF Quality Standard when published, which outlines the key principles of high quality AF services and a commissioner toolkit to support commissioning processes and decisions.
- ✔ In the absence of national commissioning guidance, clinical governance structures should be produced for Cardiovascular Strategic Clinical Networks to disseminate to CCGs which outline: who should be prescribing; what we should be measuring, including the lowest appropriate TTR for patients who have been prescribed warfarin; who should be monitoring and benchmarking progress; and how we identify outliers and improve their performance. This will support outcomes and cost measurements and should be based on shared experiences, developed by a multi-disciplinary group and chaired by a commissioner.

(ii) **To address the challenge of AF services existing as largely stand-alone services, we recommend:**

- ✔ The Commissioning Development Directorate, as part of NHS England, should provide strategic guidance for commissioners about the potential to disinvest in, or re-design, existing services in order to effectively commission AF services which are cost-effective and improve patient outcomes, to provide a template which can be adapted to local needs.
- ✔ In the absence of national commissioning guidance, work should be led by a multi-disciplinary group, bringing together stroke leads from Cardiovascular Strategic Clinical Networks, to draw on shared practice and examine how broad cardiovascular pathways can be designed which integrate individual services and provide a simplified structure to measure outcomes and costs. The guidance should be disseminated to all Cardiovascular Strategic Clinical Networks and Health and Wellbeing Boards once complete, to provide a template which can be adapted to local needs.

(iii) **To address the lack of a national or regional system or registry to prompt appropriate follow-up and indicate which treatment a patient is receiving in an emergency, we recommend:**

- ✔ The patient-held yellow book system for warfarin should be extended to all oral anticoagulant treatments, so it can act as a prompt for health care professionals that a patient has been prescribed an anticoagulant, with the specific anticoagulant identified on the card.
- ✔ One view expressed by the expert working group is that the yellow book is well recognised nationally as being the 'warfarin' record book and it will be very difficult to change this. However, if the other anticoagulant manufacturers can be persuaded to adopt the same style and format in yellow, it would: alert, by association, that the patient is on an anticoagulant; and arouse the curiosity of health care professionals to look at, and discover, that the patient is on an anticoagulant. Such books could also contain advice on how to deal with bleeding/emergencies.
- ✔ An electronic AF patient registry should be considered which includes detail of the anticoagulant agent the patient has been prescribed and the timetable for a follow-up appointment. Ideally, this would be a national registry, but a regional registry may be more achievable. This could be part of a wider General Practice Extraction Service (GPES) cardiovascular registry.

9. Conclusion and next steps

This report aimed to examine what the challenges are to the delivery of an ideal prevention of AF-related stroke pathway and how these could be overcome to support an improvement in patient outcomes, by reducing the prevalence of stroke in patients with AF, while maintaining cost control in these services. The discussion within this report is framed within the context of a number of national developments and challenges, including:

- the arrival of newer but more expensive anticoagulant agents to prevent stroke compared to the standard agent, warfarin;
- significant NHS reforms requiring GP commissioners and clinicians to re-design local services and demonstrate improved outcomes while delivering efficiency savings to meet the QIPP challenge;
- patient demand for shared decision making; and
- an increasingly ageing population.

It is no surprise therefore that colleagues who joined us at the meeting on 30th April 2012 to feed into this report viewed this as an opportunity to address the quality, safety and cost of the entire pathway, addressing patient identification and AF diagnosis, through to patient management in primary, secondary and tertiary care, supported by a streamlined commissioning process.

As a group, we have identified the key challenges to delivering an ideal pathway and suggested robust and tangible recommendations to address these challenges. Some recommendations clearly focus on national leadership, such as the call for professional bodies to provide improved education about AF and treatment options to their membership. However, we believe others can be developed by UKCPA and the expert working group, working with colleagues to share local experiences and practices, for example: commissioning guidance on reforming the pathway to release cost-savings; addressing the patient information challenge; measuring clinical or costing data already gathered on anticoagulation clinics or the introduction of NOACs; and raising awareness amongst local commissioners, MPs and Health and Wellbeing Boards to prioritise prevention of AF-related stroke within their defined geographical area.

We look forward to working with colleagues to deliver these recommendations, which we strongly believe can support the delivery of streamlined services in prevention of AF-related stroke. Ultimately, we are calling on the AF community to work together to achieve our shared goal: to reduce the risk of avoidable – and potentially fatal – stroke in patients with AF, by delivering safe, cost-effective and high quality NHS care that patients rightly demand.

10. Contact details

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