AF ASSOCIATION HEALTHCARE PIONEERS REPORT
SHOWCASING BEST PRACTICE IN AF 2020

www.afa-international.org
UK Registered Charity No. 1122442
“We would like to take this opportunity to thank all those who submitted studies, and to congratulate the 17 winners who demonstrated excellent clinical practice and the development of AF services to improve patient outcomes and quality of life.”

AF is the most common, sustained heart rhythm disturbance (arrhythmia). About 2% of the general population have AF, and at least one in four adults over 40 years old will develop AF in their lifetime. It can cause distressing symptoms, or it may remain silent, with the patient being completely unaware of the potentially dangerous arrhythmia that has developed. This is one of the main reasons that so many people have undiagnosed AF — in excess of 30% of people with AF are unaware. Irrespective of symptoms, AF is associated with severe complications, unless it is managed and treated effectively. AF-related stroke, sudden death, heart failure, dementia, and frequent hospital admissions are much more common in patients with poorly managed and untreated AF. Correct and expert treatment reduces these complications, almost back to the status of people who have normal heart rhythm. It is therefore vital that all patients with AF are identified as early as possible after the arrhythmia begins, and that those with AF are diagnosed and assessed, so that valuable anticoagulation therapy and treatment can begin as soon as possible. The AF Association was established specifically to help patients and their families or carers to understand this arrhythmia, and to obtain the best expert advice. There are many effective therapies and treatments available, but some of the older approaches to this arrhythmia are now known to be ineffective, such as aspirin as an anticoagulant for AF, which place patients at greater potential risk of an AF-related stroke.

There is still a critical need to increase the identification of people with undiagnosed AF, improve their diagnosis, and ensure that effective and appropriate anticoagulation is provided to all patients with AF. The UK National Screening Council has not yet agreed to introduce screening for AF on a systematic basis, but individual health care workers are setting up screening for AF all over the country.

The pace of change has been rapid in this field of medicine, and the AF Association have set up an award for Healthcare Pioneers working in AF, to identify innovative and positive advances in the way diagnosis, anticoagulation therapy and treatment for AF has been established in leading centres. These ideas are collated into the Healthcare Pioneers Report on an annual basis. This year we had over 30 submissions from the UK and abroad. Most of the submissions related to screening for AF, audit of medical practice, particularly anticoagulation, and managing AF in special circumstances. An international panel of judges scored the submissions according to a scoresheet which included originality, completion, patient involvement and implications for health care. This information is then disseminated as a model of best practice across the UK, that other centres can adapt to improve their own practice in the management of patients with AF. The AF Association — Healthcare Pioneers Report 2020 includes 17 case studies describing best practice to establish or grow existing services and to deliver our core campaign: ‘DETECT AF; PROTECT against AF-related stroke; CORRECT the irregular heart rhythm; and thereby PERFECT the patient care pathway – restoring a patient back to a person and improving their quality of life.

We would like to take this opportunity to thank all those who submitted case studies, and to congratulate the 17 winners who demonstrate excellent clinical practice and the development of AF services to improve patient outcomes and quality of life. Applications for the AF Association Healthcare Pioneers Report 2021 will open in March 2020 — we encourage everyone who is aware of, or actively engaged in the management of patients with AF, to share their examples of best practice. The winners being announced during the AF Association Global AF Aware Week annual event hosted at the Palace of Westminster, London, UK in November 2020.
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BACKGROUND: There is increasing evidence for the role of exercise-based cardiac rehabilitation in the management of patients with atrial fibrillation (AF). However, this intervention has not yet been adopted within the National Health Service (NHS).

AIM: This quality improvement project aimed to assess the feasibility of utilising an established NHS cardiac rehabilitation programme in the management of AF and examined the effects of this intervention on exercise capacity, weight, and psychological health. We then identified factors that might prevent patients from enrolling on our programme.

METHODS: Patients with AF were invited to participate in an established six week cardiac rehabilitation programme, composed of physical activity and education sessions. At the start of the programme, patients were weighed and measured, performed the six minute walk test (6MWT), completed the Generalised Anxiety Disorder Questionnaire (GAD-7; scoring 0-21, higher scores indicating higher anxiety levels), and the Patient Health Questionnaire (PHQ-9; scoring 0-27, higher scores indicating higher depression levels). Measurements were repeated on completion.

RESULTS: 77 patients were invited to join the programme. Of these, 22 patients (28.5%) declined participation prior to initial assessment, whilst 22 (28.5%) accepted and attended the initial assessment, but subsequently dropped out. In total, 33 patients (43%) completed the entire programme (63.9±1.7 years, 58% female, BMI 33.9±1.3 kg/m², mean left atrial size 5.1±0.2cm). On completion, enrolled patients covered longer distances during the 6MWT (389.5 vs. 447.9 metres, p<0.0001; a 15% improvement), had lower GAD-7 scores (4.12 vs 2.65, p=0.035), and lower PHQ-9 scores (5.0 vs. 3.42, p=0.04). Patient weight was unchanged on completing cardiac rehabilitation (102.1kg vs. 101.6kg, p=0.49). Compared to patients that completed the entire programme, those who attended the initial assessment but failed to complete the programme (n=22) had significantly higher weight and BMI (respectively, 115.6kg vs. 102.1kg, p=0.047; 37.9±2.0 vs. 33.9±1.5kg/m², p=0.047), covered a shorter distance during the 6MWT (318.8m vs. 389.5m, p<0.01), had higher PHQ-9 scores (9.87 vs. 5.0, p=0.037), and higher GAD-7 scores (7.53 vs. 4.12, p=0.047).

CONCLUSION: Enrolling patients with AF into an established NHS cardiac rehabilitation programme is feasible, with nearly half of those invited completing the programme. This resulted in improved six minute walk test, and reduced anxiety and depression levels, in the short term. Severe obesity, high anxiety and depression levels, and lower initial exercise capacity may be barriers to enrolling patients with AF into exercise-based cardiac rehabilitation. We plan to target these factors in future improvement cycles.
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EAST MIDLANDS ACADEMIC HEALTH SCIENCE NETWORK (AHSN), UK

**INTRODUCTION:** East Midlands Academic Health Science Network (EMAHSN) in partnership with East Midlands Clinical Network (EMCN) have been working with the 19 East Midlands Clinical Commissioning Groups to support improvement in diagnosis and management of atrial fibrillation (AF) to reduce incidence of AF-related stroke.

**AF ADVANCE QUALITY IMPROVEMENT PROGRAMME:**  
Implementation of a quality improvement programme:  
- **Ambassador** – Clinical and managerial AF ambassadors within each CCG and GP practice to drive improvement.  
- **Diagnosis** – Improve clinical expertise in diagnosis and management through funding clinical upskilling and deployment of mobile ECG devices.  
- **Variation** – AF infographics highlighting variation in diagnosis and management at CCG and practice level creating a compelling case for change.  
- **Audit and Action Planning** – Support GP practices to use audit tools to inform action planning and re-audit of improvement.  
- **Normalise** – Anticoagulation as the optimum treatment by upskilling clinicians to deliver evidence-based AF care. The five lowest performing CCGs were supported to implement a quality improvement programme.  
- **Clinical Template** – Promoting use of an evidence-based AF clinical template in GP practices to support ongoing delivery of best practice care.  
- **Evaluate** - Improvements in care through analysis of QOF data at GP practice, CCG and regional levels.

**RESULTS AND CONCLUSIONS:** The AF Advance Programme has delivered the following improvements in East Midlands:  
- Diagnostic rate increased from 76% in March 2017 to 81% in March 2018. An additional 5,665 patients diagnosed.  
- Anticoagulation rate increased from 83.7% in March 2017 to 86.8% in March 2018 showing the East Midlands to be the highest performing region nationally.

- 18 of the 19 East Midlands CCGs have already met the national AHSN target of 84% anticoagulation of high-risk AF patients to be achieved by March 2020.  
- Each of the five lowest performing CCGs increased their anticoagulation rate by 8-10%.  
- This will prevent an estimated 167 strokes, 56 deaths, secure health and care cost efficiencies of £3.45million per year.

The cornerstone to our success is our ‘system-wide’ collaboration with key stakeholders; Public Health England, Health Education England, NHS RightCare, British Heart Foundation, the Stroke Association and the Arrhythmia Alliance. Whilst CLAHRC East Midlands is undertaking our regional academic evaluation.  
Moving forward, the focus of our AF Strategy is to work with the lowest performing CCGs to improve AF diagnosis. We are deploying AliveCor Kardia devices to community pharmacies to increase diagnostic rates and establishing Virtual Clinics in conjunction with specialist pharmacists to drive improvements in anticoagulation.
INTRODUCTION: The Emergency Cardiology Service (ECS) is a front-line Advanced Nurse Practitioner (ANP) led clinical service, focused on improving patient experience in the ED by identifying patients with cardiac complaints early in their ED journey; providing expedited expert consult, diagnosis, treatment and facilitating early discharge to expedited outpatient ambulatory diagnostics. An innovative pathway was implemented to manage patients presenting to ED with recent onset atrial fibrillation (AF) of less than 24h (ESC guidelines <48h) and that may be eligible for a rhythm control strategy. Performing cardioversion without delay minimizes electric and structural remodelling of the atrium and the risk of stroke. Available treatments include chemical or electrical (DC) cardioversion. DC cardioversion is a highly effective treatment but is resource intensive, requires anaesthesia and for the patient to be fasting for at least three hours. Until now, available chemical cardioversion agents also exposed patients to potentially lethal arrhythmias including ventricular tachycardia and ventricular fibrillation. Such arrhythmias can occur up to 72 hours post-cardioversion.

The AF clinical pathway involves the administration of Vernakalant hydrochloride, a rapid-acting anti-arrhythmic drug licensed in the EU since 2010 for the conversion of recent-onset atrial fibrillation with proven efficacy and safety when compared with placebo and amiodarone in randomized clinical trials.

OUTLINE OF CARE PATHWAY: Patients presenting to our ED in a large Dublin area teaching hospital with recent-onset atrial fibrillation (AF) undergo a protocol-based assessment (FIG 1) to determine suitability for rhythm control strategy. If they are deemed eligible, they receive a maximum of two weight based 10-minute infusions of Vernakalant hydrochloride. Patients are then closely monitored in the resuscitation area before, during and after administration.

RESULTS: Sinus rhythm was restored in 51 out of 61 patients (83%) in an average of 8.8 minutes (median eight minutes). Average CHA2DS2-VASc score was 0.92 and average HASBLED score was 0.21. 59 out of 61 (97%) patients were discharged after two hours of monitoring. There were no thromboembolic or bleed events during three follow-ups.

CONCLUSIONS: Our recent onset AF pathway is safe, rapid, facilitates same day discharge and outpatient follow-up, negating the need for an acute hospital bed; improving patient experience.
During 2017 a ‘case for change’ was highlighted around the identification and management of atrial fibrillation (AF) in primary care. Evidence showed:

- NHS Right Care data/Stroke pathway Tameside & Glossop were an outlier, from reported to expected prevalence of AF.
- 2015-16 QOF data, showed a significant variation in AF prevalence ranging from 0.38% to 2.53%.
- Q3 2017 – 141 hospital admissions The Single Commission worked closely with key partners to mobilise a collaborative approach to AF management.

OBJECTIVES:

- Reduce the number of AF-related strokes through effective identification and management of patients.
- Improve levels of detection amongst identified patient cohorts.
- Improve the Time in Therapeutic Range (TTR) and the management of the ‘known not treated’ patients with AF.

Pharmacy-led clinical reviews, covering 38 of 39 practices, were provided by Interface Clinical Services and facilitated by Heath Innovation Manchester. This included notes-based assessment followed by face to face patient reviews; provision of ongoing action plans described how to improve their prevalence and management within each site. 96 AliveCor Kardia Mobile devices were provided to practices. These devices enabled staff in practices to carry out ‘near patient testing’ to detect the presence of AF. A GP educational event was held, and learning captured for future reference and wider training.

ACTIVITIES AND KEY OUTCOMES:

- In 12 weeks, AF prevalence increased to 1.92% (an increase of 168 patients – 40% attributed directly to primary care code finding and 60% to an active case finding programme).
- 211 patients achieved greater than 65% TTR following optimisation of their warfarin therapy whilst 78 patients were transitioned to an alternative anticoagulant.
- 311 patients receiving a DOAC required a change in dose or change to an alternative DOAC.
- The number of patients who were on the AF register and with CHA2DS2VASc = 1 (male) or CHA2DS2VASc>=2 without anticoagulation decreased from 18.1% vs post review of 15.2%. A total of 188 patients were found to be in the high-risk category.
- 104 additional patients are now receiving anticoagulation as part of the project.
- 31 less AF-related strokes (Q3 16/17 vs Q3 18/19) – 22% reduction.
- The only area-wide intervention carried out that could have accounted for the change was this programme (stroke admissions data from undifferentiated cause). Ischaemic strokes account for 80% of all strokes, with 25% of these occurring in patients with AF.
THERE SHOULD BE A LOW THRESHOLD FOR TESTING ATRIAL FIBRILLATION (AF) PATIENTS FOR OBSTRUCTIVE SLEEP APNOEA (OSA)

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Service audit on OSA in AF findings presented at HRC 2018. Do other centres have similar policies? We advocate this as an area of best practice.

IS SLEEP APNOEA UNRECOGNISED IN PATIENTS WITH ATRIAL FIBRILLATION?

INTRODUCTION: There is a recognised association between atrial fibrillation and obstructive sleep apnoea, and consequent worse outcomes and poor rate/rhythm control with antiarrhythmic drugs, cardio-version and ablation. (1, 2) There have been several studies looking at the prevalence of this association (3) and we have reviewed the incidence of this at our institution and the relation to self-reported sleepiness.

METHODOLOGY: All new patients with atrial fibrillation attending a nurse led AF clinic were referred for assessment of possible obstructive sleep apnoea. Patients were invited to attend on two occasions for limited home-based multi-channel sleep studies (Alice). Self-reported sleepiness was assessed using the Epworth questionnaire. Results were interpreted by a qualified sleep physiologist and patients with significant sleep disordered breathing invited to attend a sleep clinic.

RESULTS: Over a 10-week period 41 patients were referred into the sleep service, of which 37 attended for investigations. Their mean (SD) age was 69 (12.8) years and 27 were male. 21 (56%) had significant sleep apnoea with an apnoea/hypopnoea index of 15 or greater, of which only five patients had predominant central events. Of the 37 patients, 34 patients had both a sleep study and an accurately completed Epworth score which was elevated in only three of the 21 with sleep apnoea: (X2 P = 0.4).

CONCLUSION: In a group of patients with atrial fibrillation attending a nurse led cardiac clinic who were unsuspected by their primary care physician or other referring physicians to have sleep apnoea had this diagnosis confirmed in 21 of the 37 patients. There was no relationship with self-reported sleepiness, as assessed by the Epworth questionnaire, and sleep apnoea. So, in patients with atrial fibrillation, even if they are relatively asymptomatic referral for sleep studies should be considered.

Ref 3. Kwon Y, Koene RJ, Johnson
OPPORTUNISTIC TESTING FOR ATRIAL FIBRILLATION IN COMMUNITY PODIATRY

MONICA FISK
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BACKGROUND: Early detection of atrial fibrillation (AF) can reduce AF-related stroke due to timely initiation and optimisation of treatment, yet it is estimated that 500,000 people in the UK have undiagnosed AF. The number of people needed to test for unknown AF is approximately one in 71 people aged over 65 (Lowers et al, 2013). Across Southwark and Lambeth where this pilot took place there are an estimated 9,054 suspected patients with AF; yet only 5,349 on GP registers meaning there are potentially 3,705 patients in the community with undiagnosed AF.

AIM: To determine whether community podiatry is a setting where opportunistic testing for AF is worthwhile.

METHOD: Through the AHSN project to increase detection of AF the community team at GSTT submitted an expression of interest to trial mobile ECG devices for opportunistic testing for AF within clinical practice. Seven Kardia mobile ECG devices were allocated for use in community clinics, domiciliary settings and awareness events. Device usage was reported monthly through AliveCor national AHSN network project.

RESULTS: Between April 2018 and November 2018, 555 pulse rhythm checks were performed by the podiatry team at GSTT in clinics, domiciliary visits and through AF awareness events. 25 people with possible AF were detected. These patients were referred to their GP for further investigation. Possible AF detection was 4.5% or one in every 22 people, higher than the expected one in 71 quoted Lower et al 2013.

NEXT STEPS: Due to the success of the pilot, AF checks are being introduced as part of the routine assessment for all patients attending a podiatry appointment in the community at GSTT. There has also been interest from the wider therapy’s directorate at GSTT and from other podiatry units across the country due to the success in detection and ease of use.

CONCLUSION: Podiatrists are well placed to detect AF using mobile ECG devices. The high detection rate observed is likely due to patients being older, often with existing comorbidities and cardiovascular risk factors. It is important to ensure clear communication takes place with patients to reduce anxiety. Referral to GPs to ensure timely investigation, diagnosis and treatment is paramount. This project is both sustainable and easy to replicate across the country in other podiatry and community care settings due to the low cost of devices and ease of use.
EXCELLENCE IN AF

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INTRODUCTION: ‘Excellence in AF’ was developed from a shared goal to reduce the number of AF-related strokes. Buckinghamshire CCG had high anticoagulation rates but recognised that there was a patient cohort with complex needs that had not been met by existing anticoagulation pathways. An alliance was established between the CCG, Oxford AHSN and Bayer to address this gap.

AIMS: Primary aim: Identify and review the cohort of patients with high stroke risk not receiving oral anticoagulation therapy.

SECONDARY AIM: Review the quality of anticoagulation prescribed by assessing the number of patients on warfarin with poor time in therapeutic range (TTR) and the number of patients being prescribed an inappropriate dose of DOAC.

The project provided intensive and responsive support to practices to identify and review patients. Buckinghamshire CCG provided strong clinical leadership and facilitated practice engagement. Bayer provided funding for clinical audit support and Buckinghamshire Healthcare NHS Trust provided specialist anticoagulant pharmacists to support GPs in reviewing patients. There was a strong emphasis placed on high-quality face-to-face consultation with counselling around risks, benefits and the importance of adherence to treatment.

Oxford AHSN provided programme management and a quality improvement support team which included experienced personnel from Bayer seconded into the AHSN via a joint working agreement.

RESULTS: The ‘Excellence in AF’ project has delivered significant benefit to patients. Through collaborative working:

- Over 7,700 patient records were audited.
- Over 4,400 patients received a face to face or desk top review.
- 266 patients with AF were anticoagulated, 227 of whom had a high risk of stroke.
- 91 fewer patients had poor TTR on warfarin.
- 169 patients had their DOAC dose adjusted.
- Projected stroke incidence was reduced by up to 17 strokes.
- Three lives were potentially saved.
- Cost avoidance from AF-related stroke could be over £0.4m.

A fundamental part of the project was the critical review of the AF management pathway. Examples of quality improvement projects included:

- The development of a DOAC register and a protocol for review of DOAC patients.
- Systems to improve notification of patients with poor TTR.
- Improvements to patient counselling.

CONCLUSION: This project demonstrates that it is possible to deliver improvements in AF care through a multifaceted collaborative approach. Nationally, Buckinghamshire benchmarks well for AF metrics as measured by QoF, however a significant improvement was delivered, particularly in patients with complex needs. This structured methodology could be used to deliver sustainable improvements in AF care across all health economies.
IMPLEMENTATION AND EVALUATION OF A STANDARDISED NON-VITAMIN K ORAL ANTICOAGULANT (NOAC OR DOAC) PATIENT SAFETY ALERT CARD ACROSS THE NORTHERN REGION OF ENGLAND.

DR HONEY THOMAS
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Non-vitamin K oral anticoagulants (NOAC or DOAC) provide an alternative to warfarin for AF-related stroke prevention. Patients are at risk of serious harm if they fail to receive clear, consistent written instructions about these drugs; how to take them safely and what to do if an adverse event occurs. In addition, patients may be at risk if healthcare professionals do not recognise that they are receiving anticoagulant medication. International guidance, NICE and the national patient safety agency both state that all patients receiving anticoagulation should receive written information.

Unlike with warfarin, there is no standard patient tool for NOACs. We developed a card for use across primary and secondary care in the Northern England Strategic Clinical Network (NESCN). We engaged with professionals from multiple specialties and local patient groups. The card developed was easily recognisable with a colour similar to warfarin books (yellow) and sized for a purse/wallet. It launched in April 2015 with supporting educational material to hospital and community pharmacists and clinicians. There was no specific funding with printing/distribution costs covered informally by NESCN. Subsequent evaluation of the project was supported with an educational grant from Bayer.

We contacted all GPs, physicians and hospital pharmacies in the region and a sample of patients for feedback. Of the respondents; 57% of GPs and 40% of physicians were aware of the cards. 92% of hospital pharmacies had the cards with 91% using them always/often. We identified patients first prescribed a NOAC in the last year via volunteer GP practices in each CCG. 800 patients were approached and 62% responded. 65% received an alert card (62% had received our NESCN card). 43% received their card in secondary care, 30% from community pharmacies and 27% from GPs. 91% found the NESCN card “useful”, 99% “very/quite easy to read” and 98% “very/quite easy to understand”.

The evaluation shows high levels of patient satisfaction and encouraging levels of use and awareness. Our feedback has allowed us to consider improvements to the card and our implementation processes. We are working with local CCGs to ensure an on-going supply of cards for primary care. We have been approached by numerous organisations in the UK requesting permission to adopt the NESCN card and have shared this freely. We have collaborated with NHS England with the aim of developing a national card to allow all patients and healthcare professionals to benefit.
EARLIER DETECTION OF AF IN THE CORNWALL COMMUNITY STROKE NURSING TEAM TO REDUCE THE NUMBER OF SUBSEQUENT STROKES/TIA’S

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INTRODUCTION: Access to NHS community services in rural counties such as Cornwall, including GP practices have challenges, some of which include, geographical location (distance, time and transport difficulties). Currently diagnosing AF in routine daily clinical practice is based on the presence of symptoms of AF-induced sequelae. Community nurses piloting using the new, approved handheld ECG devices such as Kardia Mobile, have potential to be useful in the initial screening and detection of AF in their patient population.

AIMS: The aim of the pilot is to evaluate using the Kardia Mobile ECG device within the Cornwall specialist Stroke nursing team as part of their routine clinical assessments to screen for AF. The gap in current research includes screening and data collecting for the housebound population, the nursing/residential home population and patients that cannot easily get to the GP practice; hence this being the focus of the pilot.

METHODS: The community stroke team consists of 15 nurses, all of which had a Kardia Mobile ECG device; patients were selected to be screened for AF over a 12-month period if an irregular pulse was found on the stroke nurse’s routine follow up assessment. Any possible AF detections were risk assessed, flagged and emailed to the patients’ GP at the time of patient assessment, which was not possible in previous practice. The nurse ensured a recent full blood screen was undertaken and the patient was counselled, given written and verbal advice on AF and anticoagulation.

Quantitative data was collected by the stroke nurses, which included the patient’s age, sex, previous stroke/TIA, and new AF detections. A combination of semi-structured interview/questionnaires and observational based methods were also used to explore patient experiences of the Kardia Mobile as an initial screen.

RESULTS: 15 patients were confirmed as having new AF and nine (15%) have been successfully anticoagulated. As a result of this; in year two of the pilot, the stroke nursing team will screen ALL patients seen with Kardia Mobile not just those with an irregular pulse following a manual pulse check.

Patient feedback was very positive including: “prevented me having multiple appointments”, “glad I didn’t have to get undressed”, “quick, non-invasive & reassuring”, “brilliant this could be done in my own home”. Implementation of this project on a larger scale with other community nursing teams has the potential to improve AF detections, especially in rural counties where patients cannot easily access the GP/hospital services.
COMMUNITY BASED PREVENTION IN ATRIAL FIBRILLATION

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INTRODUCTION: Improving identification, diagnosis, management and treatment of atrial fibrillation (AF) is an important factor in improving the quality of care for the population of Castle Point & Rochford and Southend CCGs. 2015/16 QOF data showed a total of 1,091 AF patients across both CCGs were exception reported or not receiving treatment. Without preventative medicine ~5.8% of these patients were at risk of having a stroke. A locally commissioned service was developed in 2017/18 to improve quality of care and reduce the risk of stroke, along with the associated costs of treatment and care. In addition, in March 2018 the CCGs were successful in their joint bid to UCLPartners Academic Health Science Partnership for AliveCor Kardia Mobile devices, as part of a wider pilot. Although the two schemes were initially separate, together they target the identification of risk and prevention of stroke.

SERVICE OUTLINED: Locally commissioned service Practices were required to achieve over and above the required QOF level (70%) of patients with AF with a record of a CHA2DS2-VASc score of two or more receiving anticoagulation therapy treatment. Kardia AliveCor Mobile Devices to detect possible presence of AF were issued to 82% of practices across the two CCGs as part of the pilot. Each practice received an individual visit, one-on-one training, information pack/guides and ongoing support from the CCGs. Devices were also provided to the Heart Failure and Cardiac Rehab teams.

RESULTS:
- 74% of practices signed up to the locally commissioned service achieving a 1.4% increase in reported clinical prevalence and 37% decrease in exception reporting.
- An additional 431 patients have benefited from anticoagulation.
- 82% of practices received mobile devices with over 125 registered users.
- Six months of data shows 383 screens completed with readings showing 23 AF, 295 normal, 54 unclassified, eight incomplete and three noise level.
- Highest usage of mobile devices across 12 CCG pilot sites.

CONCLUSION: The mobiles devices pilot and the locally commissioned service has resulted in 23 new patients identified with possible AF (in six months), and 431 additional patients receiving anticoagulation treatment. For an investment of £92,535 (including prescribing costs) in the locally commissioned service a potential gross saving of £122,787 (net saving £30,252) has been made to health and social care costs, including improving quality of life for patients with associated symptoms.
THE WEST NORFOLK ATRIAL FIBRILLATION SERVICE: WORKING ACROSS PRIMARY AND SECONDARY CARE TO IMPROVE AF-RELATED STROKE PREVENTION

DR RAJ SHEKHAR
THE QUEEN ELIZABETH HOSPITAL KINGS LYNN NHS FOUNDATION TRUST, UK

BACKGROUND: In 2017/18, it was estimated there were 5,953 people with undiagnosed atrial fibrillation (AF) in the West Norfolk Clinical Commissioning Group (CCG). We co-developed a new multi-professional AF fast track service co-led by primary and secondary care to meet the needs of our county. A multidisciplinary team (MDT) service was developed to provide active screening and diagnosis of AF, discussing treatment options, offering anticoagulation and counselling to support patients and their families.

THE SERVICE: Established in September 2018, multiple stakeholders including GPs, a Stroke Consultant, Cardiologists, Cardiac Nurses, patients and third sector partners helped develop the service. Eastern AHSN supported the service through the provision of mobile ECG devices. Two large GP Practices (population: 47,000) were involved in the 6-month pilot phase. A simple e-referral form was developed to enable rapid access to the service which provides:

1) AF Clinics: Twice weekly outpatient clinics were held at Queen Elizabeth Hospital (QEH) over 30 weeks for high-risk patients from both primary and secondary care. Patients discussed their risk of AF-related stroke and choices related to anticoagulation with skilled professionals.

2) Liaison Service: Advice is offered to primary and secondary care clinicians.

3) MDT learning reviews: Monthly reviews including detailed referral case review were held with primary care, community and acute sector stakeholders to optimise care pathways.

RESULTS: From September 2018-March 2019, the outpatient clinic received 53 referrals (22 from primary care opportunistic case-finding in CVD and Diabetes clinics; 31 from secondary care; age range 32-91 years) with the following results:

- 49 patients newly diagnosed with AF (20% of patients referred to QEH had a primary diagnosis of AF).
- 44 patients started on anticoagulation.
- Waiting time reduction from 26 weeks to one week for AF patients referred to secondary care.

This led to QEH achieving a referral to treatment (RTT) rate of 95.5% (previously 80%) through improved review of cardiology referrals from primary care.

As part of our community support, we:

1. Developed a patient-led monthly heart support group.
2. Provided primary care training sessions to clinicians to improve knowledge about anticoagulation.
3. Held an AF and Hypertension Awareness Event at QEH screening 80 people. One person was identified with potential AF and four people with pre-hypertension.

CONCLUSION: In the first six months, the service has demonstrated how a coordinated regional approach through closer working between primary and secondary care can improve AF detection, anticoagulation and reduce waiting times. We plan to expand the service and develop community-based AF clinics within primary care services.
A SYSTEMATIC REVIEW OF PATIENTS IN ONE CLINICAL COMMISSIONING GROUP TO PREVENT ATRIAL FIBRILLATION RELATED STROKE

FIONA GARNETT
BEDFORDSHIRE CLINICAL COMMISSION GROUP (CCG), UK

OBJECTIVE: Ensuring patients with AF are appropriately anticoagulated across NHS Bedfordshire Clinical Commissioning Group (BCCG) with the primary goal of reducing AF-related strokes.

OUTLINE OF SERVICE: In partnership with Inspira Health, BCCG adopted the Primary Care Atrial Fibrillation (PCAF) Service model which is led by Consultant Cardiologists, with five phases as follows:

Phase 1 – Running the AF-PRIMIS audits on the clinical system.

Phase 2 - Completion of four clinical audits utilising GRASP-AF; Comprehensive patient case note review including AF casefinder; A review of all DOAC patients, ensure correct dose and in date bloods; Independent assessment of warfarin patient safety.

Phase 3 - Systematic patient invitation.

Phase 4 - Cardiologist-led clinics hosted within local GP practices; one-on-one clinical education with an expert allowing opportunities for shared learning and discussion of individual cases; Optimising treatment and management of high-risk AF patients.

Phase 5 - Review of recommendations and subsequent actions at two months post clinic to determine outcomes.

RESULTS: 34 GP practices participated covering a 376,311 population (80% of BCCG). 12,573 patients’ medical records were audited. The initial AF register was 7,301 patients (AF prevalence 1.9%) and an additional 265 patients were identified through AF case finder resulting in an AF prevalence of 2.0%. From 7,566 patients with AF, 5,831 were already on anticoagulants (77.1%), with 50.5% (n=2,947) on VKA medications and 49.5% (n=2,884) on DOACs. Of the DOAC patients, 595 (22%) required dosage review or up to date blood tests. Case notes were reviewed for 1,735 patients not on anticoagulation, with 901 (51.9%) patients deemed not eligible for anticoagulation. This left 834 (48.1%) patients who were eligible for, but not on, anticoagulation. A further 407 (13.8%) patients currently taking VKA medications were deemed sup-optimal with regards to INR control with TTR <65%. In total, 1,241 patients were invited for review by a Consultant Cardiologist at their local GP Practice, with an attendance rate of 90%. From all face to face and virtual consultations, 908 patients had anticoagulants prescribed, changed, management of INRs improved or were in the process of being anticoagulated at the time of follow-up (Figure 1). From this we would expect 36.3 AF related strokes prevented and a cost saving to the NHS of £429,520 per year.

CONCLUSION: Through comprehensive audit, BCCG have been able to ensure that patients with AF are appropriately anticoagulated in 80% of their catchment population. This has enabled improved anticoagulation to prevent AF-related stroke.
KNOW YOUR PULSE 2018 SPAIN, SCREENING OF ATRIAL FIBRILLATION, TACHYCARDIA, BRADYCARDIA, AND TREATMENT REVIEW, PRELIMINARY RESULTS

PH SALVADOR TOUS
SPANISH SOCIETY OF COMMUNITY PHARMACISTS (SEFAC) AND INTERNATIONAL PHARMACIST FOR ANTICOAGULATION CARE TASKFORCE (IPACT), SPAIN

INTRODUCTION: SEFAC in collaboration with the AF Association and IPACT, develops in Spain this international pilot project, to assess its effectiveness in improving detection of asymptomatic AF, reducing its possible consequences and contributing to the correct treatment of arrhythmias and their risks.

OBJECTIVE: Quantify the identification of new cases of arrhythmias and especially of atrial fibrillation and evaluate the results, also of bradycardia and tachycardia, as well as the correct treatment of atrial fibrillation already diagnosed, and also measure BP.

METHODS: Transversal descriptive study carried out from November 19 to 25, 2018, by Spanish community pharmacists, in people of ≥40 years who accepted the participation proposal. Take exclusively radial pulse according to protocol and frequency record (bpm). Data related to age (years), sex (F / M), history (YES / NO), HF, HBP, diabetes, MI, TIA and antiplatelet, anticoagulant and antiarrhythmic treatments were recorded. At the end, BP was measured and recorded (mmHg). Patients with non-known arrhythmic pulse, bradycardia or tachycardia (<50 or > 100 bpm) were referred, and also those diagnosed with AF that were not under treatment with anticoagulants and had CHA2DS2-VASc ≥ 2; and those with uncontrolled BP.

RESULTS: 101 Pharmacists, 977 patients (9.9 patients/pharmacist) 68(7.0%) patients describe irregular pulses (29(7.8%) men / 39(6.5%) women) and 97(9.9%) had a rapid pulse at rest, both without diagnosed AF. 22(2.3%) with AF, 21(95.5%) showed BP ≤140/90. Between the 1(54.6%) treated with AC 1(8.3%) had BP >140/90. At the pulse test, 97(9.9%) patients showed an irregular pulse, of those 36 (37.1%) not diagnosed. 97(9.9%) patients were referred: -With previous diagnosis: 7(7.2%): 1(14.3%) Normal pulse and 6(65.7%) Irregular pulse, already diagnosed with AF without AC treatment and also had CHA2DS2-VASc value ≥ 2; and with uncontrolled BP. - With no previous diagnosis: 90(92.8%): 54(60%) showed normal pulse and 36(40.0%) irregular pulse. The response to the referral was recorded.

CONCLUSIONS: Where pharmacists are actively involved in opportunistic screening for AF or screening of patients diagnosed with AF they help to improve the degree of diagnosis of unknown AF, to help improve its correct treatment and also to identify problems such as tachycardia or bradycardia.
Once per month on a Saturday, a nurse led DC cardioversion service runs for up to 15 Atrial Fibrillation (AF) patients. The patients fast from the night before and are ready to eat and drink post procedure the next morning. This means providing up to 45 drinks and refreshments. Time is taken away from direct patient care when clinical staff need to concentrate on general anaesthetic recovery duties.

Methods to address the issues with limited resources were explored. The volunteer services were approached, and they provided us with two lovely ladies who have dovetailed fantastically into the team. They do far more than provide refreshments as they immediately started interacting with the patients and have become a huge psychological support to some who can be quite nervous. I don’t know how we ever managed without them and they really enjoy coming along and receive great praise and thanks from grateful patients and their families.

The cardiology staff rotating in to help with the list found this so beneficial that they expressed an interest in having a similar system all week. This was acted upon and the volunteer service now supplies someone every day. As expected, similar results were found. The idea was forwarded to the Trust, via the quality team, so that now every day case unit or similar operation across the Trust may benefit from greater utilisation of volunteer services in this way.
SCREENING FOR ATRIAL FIBRILLATION USING ECONOMICAL AND ACCURATE TECHNOLOGY

DR MARK LOWN
PRIMARY CARE & POPULATION SCIENCE UNIVERSITY OF SOUTHAMPTON, UK

INTRODUCTION: Consumer devices which measure pulse or heart rate are widely available. Over one in 10 of us own a smart watch or fitness tracker with sales growing rapidly and many of us believe wearable technology will make our lives better! At Southampton University we wanted to determine whether readily available and inexpensive consumer devices could be used to accurately detect Atrial Fibrillation (AF).

We selected a chest-strap heart rate monitor (Polar H7) used primarily by athletes and an electrode-based device (Firstbeat Bodyguard 2). These devices had many inherent design features which made them potentially suitable for AF detection such as being lightweight, unobtrusive, comfortable to wear for prolonged periods, usable in suboptimal settings e.g. during exercise and having long battery lives. Crucially they also measure (and can be used to transmit or store) the ECG signal which is required to diagnose AF. Essentially, they are inexpensive, wearable single-lead ECG devices. However, they currently are not used to transmit ECG data commercially and do not have inbuilt diagnostic algorithms for detecting AF.

RESULTS: We were able to modify a highly accurate existing diagnostic algorithm and also designed a machine learning AI algorithm which we used with the commercial devices and tested them in a case-control study with over 400 participants in Southampton, UK. We achieved impressive results with a sensitivity of 96% and specificity of 98% (https://www.ajconline.org/article/S0002-9149(18)31411-5/abstract). With the machine learning algorithm, we were able to obtain even better results. This indicates that readily available and inexpensive devices could potentially be used to screen for AF (the Polar H7 has a cost price of only £26).

AF BURDEN: Currently much of our understanding of the risk factors and complications of AF is based on the presence or absence of chronic persistent and symptomatic AF and guidelines make the same recommendations for anticoagulation treatment regardless of the AF pattern. Some of the AF we detect is not permanent and screening strategies being investigated can involve prolonged screening for intermittent AF. Recent evidence suggests that higher AF burden (the amount of time spent in AF) is associated with higher risk of stroke. Some experts believe that stroke risk may be dependent on AF burden as well as existing co-morbidities and their severity (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6244310/).

We believe that inexpensive consumer devices such as those aforementioned could help us answer questions about stroke risk and could lead to better outcomes for patients.
MIND THE GAP: REDUCING THE DETECTION GAP FOR ATRIAL FIBRILLATION IN MENTAL HEALTH SETTINGS

SARAH GALLOWAY
SOUTH WEST LONDON AND ST GEORGE’S MENTAL HEALTH TRUST, UK

INTRODUCTION: Our work at SWLSTG Mental Health Trust has seen an increase in addressing physical health concerns for our population of mental health patients, including atrial fibrillation (AF) screening and subsequent treatment. AF screening was deemed to be important as many mental health users do not often access physical checks or lifestyle support (who may not be compliant with treatments due to their mental health problems) leaving a vulnerable population. Silent asymptomatic AF is common, leaving service users without stroke prevention treatments.

AIM:
• Prevent AF-related strokes.
• Embrace digital technologies to improve health outcomes.
• Improve parity between physical and mental health.
• Upskill clinicians to screen for AF.
• Provide a timely treatment through a new AF pathway.

OUTLINE OF PROJECT: The Kardia monitor is a portable single lead ECG device to detect AF (see Figure 1). The project was planned through a number of phases, using QI methodology to develop, test, measure and then roll out Kardia to additional service areas. The project aligns with our Trust Strategy addressing two of the strategic ambitions of Increasing Quality Years and reducing inequalities.

RESULTS/CONCLUSIONS/ PATIENT BENEFITS OUTCOMES TO DATE:
• Launch the Kardia machine in each of the adult and older people in-patient mental health wards (10 in total) and in each of the Older Peoples CMHT’s.
• Develop a cohort of AF Champions, providing screening at popular events such as the Annual Trust BBQ and Sports Day reaching a wide audience.
• Include AF screening within the Flu Vaccination Clinics.
• Collaborate within the South London Partnership, sharing learning and experiences.
• Collect qualitative data, exploring how staff and service users experienced using digital technology. It is hoped that service users or carers can become Champions too.

CONCLUSIONS: In light of the success of the Pop-up clinics, the demand for screening and awareness of AF has increased significantly. The AF findings will be communicated to GP’s on discharge to hospital, promoting shared care. ‘Mind the Gap’ project should over time see a reduction in AF related strokes for mental health patients leading to increased quality of life for both patients and carers.
A NATIONAL COLLABORATIVE APPROACH TO ATRIAL FIBRILLATION STROKE PREVENTION

FAYE EDWARDS
ACADEMIC HEALTH SCIENCE NETWORK (AHSN) AF PROGRAMME TEAM, UK

INTRODUCTION: Academic Health Science Networks (AHSNs) were established in 2013 to spread innovation at pace and scale, improve health and generate economic growth. There are 15 AHSNs nationally, each AHSN works across a distinct geography and connects the NHS, academic organisations, local authorities, the third sector and industry. In 2015/16, the AHSNs identified atrial fibrillation (AF) stroke prevention as the first national collaborative programme and, since then, have been working to disseminate best practice in AF detection and management.

OUR CORE AIMS WERE TO:
• Detect: Increase the detection of AF
• Protect: Increase the uptake of anticoagulation therapy in patients with AF at risk of stroke
• Perfect: Optimise the use of anticoagulants and the anticoagulation pathway

OUR APPROACH: With internal support provided by the national programme team and peer support through Community of Practice meetings, each AHSN AF team has worked with local commissioners to encourage investment in AF stroke prevention through the provision of smart data, business case models and infographics. We provide support to clinical staff and the various stakeholders within the AF pathway, crossing organisational boundaries, improving collaboration to optimise patient care and deliver transformational change. Our impact rests in our ability to bring people, resources and organisations together quickly, delivering benefits that could not be achieved alone.

INCREASING DETECTION: We distributed more than 6,000 mobile electrocardiogram devices to community settings, enabling a range of staff to undertake pulse rhythm checks to assist in the detection of AF. We have worked with commissioners to embed pulse checks for those over the age of 65 in commissioning frameworks and supported local care providers to host pulse screening events, raising awareness of AF.

OFFERING THERAPY: Building on a previous AF Association Healthcare Pioneers Project, we are assisting Clinical Commissioning Groups (CCGs) to deliver a new model of care, referenced in the NHS Long Term Plan, whereby specialist anticoagulant pharmacists provide bespoke education and support to primary care prescribers on the use of anticoagulation therapy in the form of ‘virtual clinics’. It is expected that more than 18,000 people will be treated, preventing up to 700 AF-related strokes and at least 200 deaths.

RESULT AND CONCLUSIONS: The AHSN Network has worked with the system to identify a further 130,000 people with AF and ensured 149,000 more people with AF at risk of AF-related stroke are receiving anticoagulation therapy. By 2020 our ambition is for 85% of people with AF to have been diagnosed, and for CCGs to be anticoagulating more than 84% of people with AF at risk of AF-related stroke, working towards the national ambition of 90%. Our interventions will prevent over 4,000 AF-related strokes and save over 1,000 lives, representing a cost saving to the NHS of over £84 million and over £100 million in social care.
Could you be a healthcare pioneer?

Please email info@afa-international.org for further details or to submit your case study to be reviewed by an expert, international panel of judges.
# Publications List

## Booklets
- Ablation for AF
- Accessing Appropriate Treatment Options
- AF and You
- Atrial Flutter
- FAQ
- Living with AF and atrial flutter
- Oral Anticoagulant Therapy
- Preventing AF-Related Stroke
- The Heart The Pulse and The ECG
- Atrial Fibrillation Patients Information
- Cardioversion of AF
- Drugs Information
- Treatment options for AF
- AF and Heart Failure
- Bereavement - Life following the loss of a loved one

## Factsheets
- AF and heart failure
- AF-related stroke
- Amiodarone
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- Anticoagulation and self-monitoring
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- AF and Aspirin: Frequently asked questions
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- Pill-In-The-Pocket cardioversion
- Rate Limiting Calcium Channel Blockers
- Rate versus Rhythm Management
- Rivaroxaban
- Transcatheter Closure of the Left Atrial Appendage
- Warfarin therapy
- Warfarin and diet
- Warfarin and other medication
- What is a Clinical Trial?
- What is a Consent Form?
- What does Randomisation mean?

## Checklists
- AF
- Patient & Primary Care
Ablation
A treatment which destroys a very small area of tissue inside the heart and so works to prevent rogue electrical impulses from interfering with the regular rhythm of the heart

Anticoagulant/Anticoagulate
Drug therapy which helps to slow the natural clotting speed of the blood

Antithrombotic Treatment
Treatment which reduces the risk of a blood clot forming which could lead to a stroke

Arrhythmia
Heart rhythm disorder

Atrial Fibrillation (AF)
Irregular heart rhythm

Atrial Flutter
A heart rhythm disorder in which the upper chambers of the heart beat very rapidly

BMI
Body Mass Index

Cardiac
Relating to the heart

Cardiovascular
Relating to the heart and blood vessels

Cardioversion
A therapy to treat atrial fibrillation or atrial flutter which uses electrical shocks to revert the heart back to a regular rhythm

CHA2DS2-VASc
A method of assessing stroke risk in patients with atrial fibrillation:
- Congestive heart failure
- Hypertension
- Age (75 years or older)
- Diabetes
- Stroke
- Vascular disease
- Age (65 – 74 years)
- Sex (gender)

CV Specialist
A cardiovascular specialist

Echocardiogram (Echo)
An image of the heart using soundwave-based technology (ultrasound) which shows a three-dimensional image

Electrocardiogram (ECG)
A representation of the heart’s electrical activity taken from electrodes on the skin surface

HAS-BLED
A method of assessing bleeding risk in AF patients on anticoagulation or being considered for anticoagulation:
- Hypertension
- Abnormal renal/liver function
- Stroke
- Bleeding history/predisposition
- Labile INR (measure of blood coagulation)
- Elderly (over 65 years)
- Drugs/alcohol

Heart Failure
The inability (failure) of the heart to pump sufficient oxygenated blood around the body to meet physiological requirements

Hypertension
High blood pressure – a condition that puts strain on the heart, leading to thickening of the heart muscle and increased size of the left atrium. This condition is associated with atrial fibrillation

Non-vitamin K oral anticoagulants (NOACs)
Anticoagulant therapies that work in a different way to warfarin to prevent the blood from clotting

Palpitations
A sensation in which the person is aware of a rapid, irregular or hard heartbeat. It can appear to skip beats or thump in the chest

Paroxysmal AF
Episodes of atrial fibrillation which cease without treatment

Physiologists
A healthcare professional who performs diagnostic and analytical procedures to assess heart rhythm disorders

QIPP
Quality, Innovation, Productivity and Prevention for a large scale transformation programme for the NHS aimed at improving quality of care and efficiency

Stroke
A medical condition where the brain is deprived of oxygen due to a blockage or a bleed

Thrombo-embolic
The blocking of a vessel by a blood clot

Transoesophageal echocardiogram (TOE)
A procedure carried out to see whether clots have formed in the left atrium and if so, whether a treatment option is safe to perform

Urinalysis
A range of tests performed on urine

Warfarin
A medication used to anticoagulate the blood
AF Association Global AF Aware Week
18-24 November 2019 / 16-22 November 2020
www.gafaw.org

The Heart of AF
A one-stop educational resource for healthcare professionals
Promoting best practice in AF care by professionals, for professionals
www.heartofaf.org

Join the pioneering, global, Heart Rhythm Specialists website
The resource provides information on local services to general healthcare practitioners seeking to refer a patient or in need of advisory council; and patients with heart rhythm disorders. The website aims to bring together a comprehensive database, which can be accessed easily by both patients and healthcare providers. Register on the heart rhythm specialist website:
www.heartrhythmspecialists.org

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THE HEART OF AF

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Promoting information, support and access to established, new or innovative treatments for atrial fibrillation