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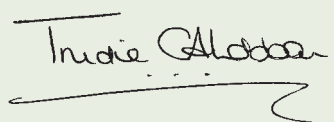
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AF ASSOCIATION HEALTHCARE PIONEERS REPORT SHOWCASING BEST PRACTICE IN AF 2021



FOREWORD

TRUDIE LOBBAN MBE
Co-Founder & CEO
AF Association

“We would like to take this opportunity to thank all those who submitted studies, and to congratulate the 11 winners who demonstrated excellent good 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 cardiovascular death, heart failure, dementia, lesser degrees of cognitive dysfunction, and frequent hospital admissions are much more common (stroke five fold increase, other outcomes two fold increase) in patients with poorly managed or untreated AF. Correct and expert therapy to anticoagulate (preventing blood clotting which causes an AF-related stroke and other

complications) and to restore the normal (sinus) rhythm substantially reduce these complications. It is therefore vital that all patients with AF are identified as early as possible so that anticoagulation therapy 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 places 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 antiarrhythmic and anticoagulation therapy is provided to all patients with AF. Individual HCPs are encouraged by international guidelines to take every convenient opportunity to test for atrial fibrillation.

The pace of change has been rapid in this field of medicine, and the AF Association has set up an award for Healthcare Pioneers working in AF, to identify innovative and positive advances in the way diagnosis, anticoagulation therapy, antiarrhythmic and rate control treatments for AF has been established in leading centres. These ideas are collated into the Healthcare Pioneers Report




PROF. A. JOHN CAMM
Trustee and Co-Founder
AF Association

on an annual basis. This year we had over 25 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 that other centres can adapt to improve their own practice in the management of patients with AF.

The AF Association – Healthcare Pioneers Report 2021 includes 11 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 11 winners who demonstrate excellent good clinical practice and the development of AF services to improve patient outcomes and quality of life. Applications for the AF Association Healthcare Pioneers Report 2022 will open in March 2021 – 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 will be announced during the AF Association Global AF Aware Week, November 2021.

INDEX

SMART TECHNOLOGY FACILITATED EARLY DIAGNOSIS AND INTEGRATED CARE OF ATRIAL FIBRILLATION: THE MAFA PROGRAMME	4
AF IMPROVEMENT IN DERBYSHIRE - A COLLABORATIVE APPROACH.....	5
A CONSULTANT CARDIOLOGIST LED PROGRAMME TO REDUCE ATRIAL FIBRILLATION RELATED STROKE.....	6
INNOVATIVE ATRIAL FIBRILLATION (AF) DETECTION IN A RURAL COMMUNITY SETTING USING THE FIRE & RESCUE SERVICE IN CUMBRIA	7
HARNESSING THE POWER OF CARDIAC REHABILITATION: AN EFFECTIVE INTERIM SERVICE TO SCREEN AND REFER IN AF MANAGEMENT	8
DOING SIMPLE THINGS WELL: PRACTICE ADVISORY IMPLEMENTATION REDUCES ATRIAL FIBRILLATION AFTER CARDIAC SURGERY	9
THE NIHR GLOBAL HEALTH RESEARCH GROUP ON ATRIAL FIBRILLATION MANAGEMENT: HELPING DEFINING AF CARE IN BRAZIL, CHINA AND SRI LANKA	10
PROTECTION OF PATIENTS WITH ATRIAL FIBRILLATION (AF) IN PRIMARY CARE: OUTREACH EDUCATION THROUGH CLINICAL CONSULTATIONS TO DEVELOP ANTICOAGULANT CONSULTATION AND DECISION MAKING SKILLS	11
COMMUNITY NURSES PREVENTING AF-RELATED STROKE IN HIGH RISK CARDIAC PATIENTS.....	12
SCREENING FOR ATRIAL FIBRILLATION WITHIN A SOUTH ASIAN COMMUNITY SETTING USING A SINGLE-LEAD ECG.....	13
OPPORTUNISTIC SCREENING FOR ATRIAL FIBRILLATION AMONG CULTURALLY AND LINGUISTICALLY DIVERSE COMMUNITIES IN AUSTRALIA	14
GLOSSARY	23

SMART TECHNOLOGY FACILITATED EARLY DIAGNOSIS AND INTEGRATED CARE OF ATRIAL FIBRILLATION: THE MAFA PROGRAMME

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Introduction: The early diagnosis and detection of atrial fibrillation (AF) is problematic as patients are often asymptomatic, and the first presentation may be with an AF-related complication. Smart technology may help bridge the patient care pathway, from primary care to secondary care management.

We herein present our work with targeting screening which was then managed with the Atrial Fibrillation Better Care (ABC) pathway, supported by mobile AF Application (mAF App): 'A' Anticoagulation to Avoid stroke – Anticoagulation with non-vitamin K antagonist oral anticoagulant (NOAC) or well-managed warfarin; 'B' Better symptom management with patient-centred symptom-directed shared decisions for rate or rhythm control; and 'C' Cardiovascular risk and comorbidity management.

The screening programme was published as the Huawei Heart Study (pre-mAFA study)(JACC,2019) and the ABC pathway was tested as a cluster randomized trial in the mAFA-II trial (JACC,2020).

The Huawei Heart Study (pre-mAFA study): The PPG algorithm and smart devices used for the Huawei Heart Study was tested in 187,000 individuals who used Huawei smart devices to monitor their pulse rhythm between October 26, 2018 and May 20, 2019: 424 (0.23%) subjects had "suspected" AF in the general population, with the highest proportion of AF episodes among the elderly. Of the 'suspected AF', 87% were confirmed as having AF. After entering the AF patient care pathway, 80% of patients at high-risk of stroke were anticoagulated.

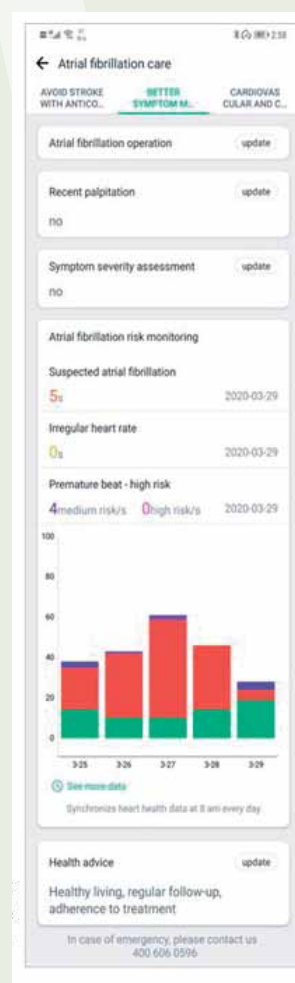
The mAFA II trial: In the mAFA intervention group, the doctors used the mAFA platform which provided clinical decision support tools (CHA2DS2-VASc, HAS-BLED, SAMeTT2R2 scores) that help facilitate treatment recommendations, educational materials and patient involvement strategies with self-care protocols and structured follow-up.

Rates of the composite outcome of 'ischaemic stroke/systemic thromboembolism, death, and rehospitalization'



were lower with the mAFA intervention compared to usual care (1.9% vs. 6.0%, hazard ratio, hazard ratio, HR 0.39, 95% confidential interval, CI: 0.22-0.67, P < 0.001). In an ancillary analysis to the mAFA-II trial, dynamic monitoring of bleeding risks and regular re-assessments using the HAS-BLED score was associated with less major bleeding events, mitigation of modifiable bleeding risk factors and increased OAC uptake over time; in contrast, the 'usual care' arm was associated with higher bleeding rates and OAC use decreased by 25%, when baseline was compared to 12 months.

Conclusions: The mAFA programme links AF screening with eligible patients who were subsequently entered into a structured care pathway with mHealth technologies. This highlights the potential application of mHealth management for AF, bridging primary care and secondary care management.



AF IMPROVEMENT IN DERBYSHIRE - A COLLABORATIVE APPROACH

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Derby & Derbyshire CCG have been working closely in partnership with colleagues from East Midlands Academic Health Science Network over the past few years on the Atrial Fibrillation agenda. The Strategic Clinical Conditions and Pathways team at the CCG, working with system partners via our CVD Delivery Board have achieved significant improvements in AF diagnosis and management between March 2015 and March 2019.

Our CVD Delivery Board meets monthly and draws in the key stakeholders from primary care, voluntary sector, secondary care and is commissioning to drive forward health improvement initiatives and efficiencies.

Detect: Based upon PHE data there was a gap in the primary care AF register of 8,683 patients in March 2015. Only 68.9% of the estimated number of patients with AF had been detected.

An additional 4,683 patients have been diagnosed with AF between March 2015 and March 2019, with a drop in gap percentage from 31.1% to 14.3%

NHS Long Term Plan target for AF detection is 85% by 2029. Derby & Derbyshire STP, as of March 2019 is at 85.7%. We are ten years early.

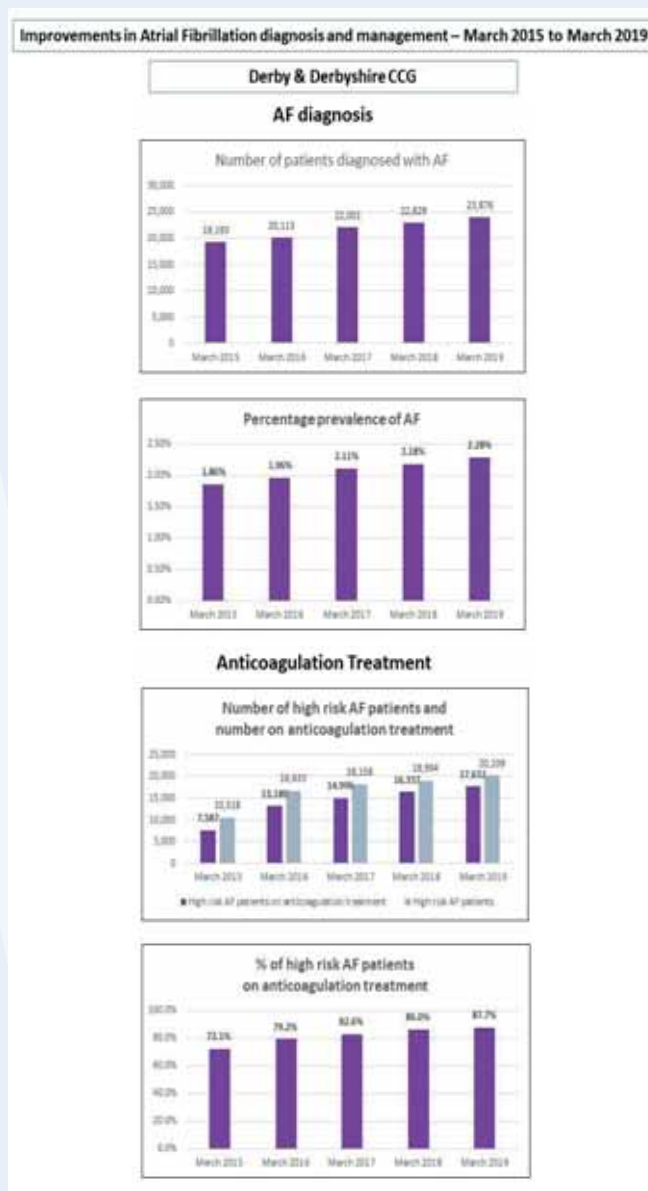
Protect: March 2015 72.1% of AF patients were receiving anticoagulation treatment, in March 2019 87.7% are now on the correct therapy. The NHS Long Term Plan target is 90% by 2029. Derby & Derbyshire STP is well on track.

Impact: It is estimated that these improvements will have led to a reduction in 271 strokes and 90 deaths, with avoided total NHS and social care costs of £5,270,000.

How?

With support from EMAHSN Derby & Derbyshire STP has achieved these sizeable improvements through a structured process involving –

- AF & Hypertension awareness events – Hosted locally to support primary care colleague attendance.
- High on agenda of Delivery Group with associated project management and system savings based efficiency targets attributed to the programme of work.
- Deployment of “free” single lead ECG devices that connect to smart phones. Training events have supported primary care staff to understand the importance and how to embed the use of these



devices into practice.

- Development time for Practice Nurses – enabled focussed paid time in practice to embed single lead ECG’s into clinical use by all clinical members of the primary care team.
- Enabling single lead ECG’s to be deployed into community specialist teams.
- Targeted letters with named practice outcomes to each PCN Clinical Lead.

Next: Developing comprehensive Dashboard to ensure AF targets are monitored with further interventions as required to meet and possibly exceed targets.

A CONSULTANT CARDIOLOGIST LED PROGRAMME TO REDUCE ATRIAL FIBRILLATION RELATED STROKE

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OBJECTIVE

Ensuring patients with AF are appropriately anticoagulated across NHS Luton Clinical Commissioning Group (LCCG) with the primary goal of reducing AF-related strokes.

OUTLINE OF SERVICE

In partnership with Inspira Health, LCCG 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 three clinical audits utilising GRASP-AF; Comprehensive patient case note review; A review of all DOAC patients, ensure correct dose and in date bloods; Independent assessment of warfarin patient safety
- Phase 3 - Systematic patient invitation for either face-to-face or telephone consultations
- Phase 4 - Cardiologist-led clinics hosted within local GP practices; one to 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

- 21 GP practices participated covering a 193,175 population (81% of LCCG). 2,274 patients' medical records were audited covering all patients on the AF register which equated to an AF prevalence of 1.2%.
- From 2,274 patients with AF, 1,789 were already on anticoagulants (78.7%), with 34.6% (n=619) on VKA medications and 65.4% (n=1,170) on DOACs.
- Case notes were reviewed for 485 patients not on anticoagulation, with 297 (61.2%) patients deemed not eligible for anticoagulation. This left 188 (38.8%) patients who were eligible for, but not on, anticoagulation.
- A further 89 (14.4%) patients currently taking VKA medications were deemed sub-optimal with regards to INR control with TTR <65%. Of the DOAC patients, 122 (10.4%) required dosage review.
- In total 399 patients were invited for review by a Consultant Cardiologist at their local GP practice, with an attendance rate of 72%. From all face-to-face and telephone consultations,

354 patients had anticoagulants prescribed, management of INRs improved, DOAC dose increased or were in the process of being anticoagulated at the time of follow-up.

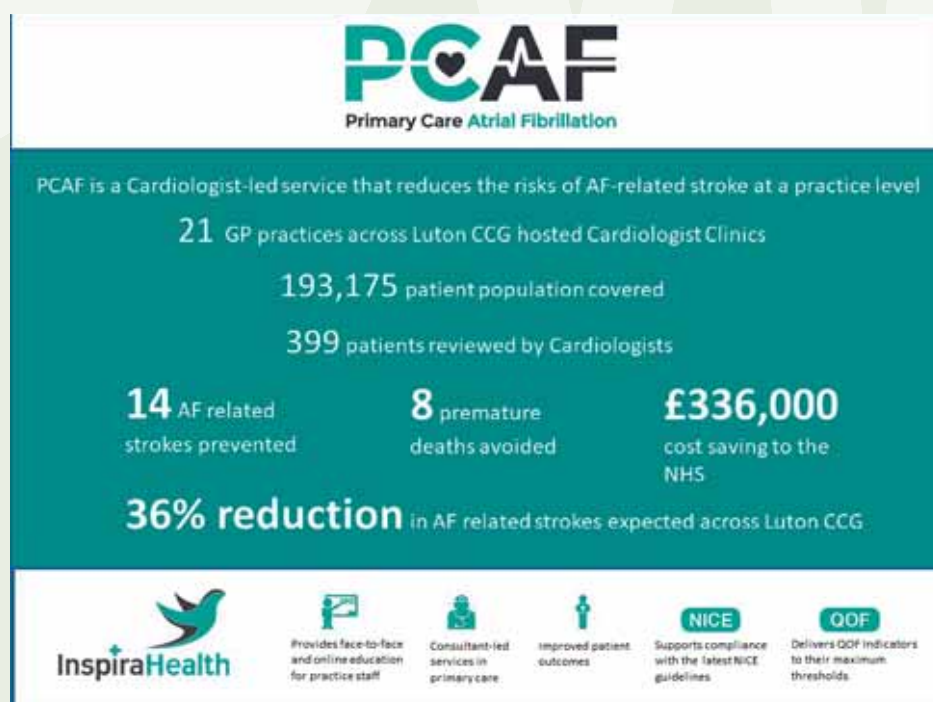
From this we would expect:

14 AF-related strokes prevented
8 lives saved and a cost saving to the NHS of £336,000 per year.

Data published in 2018 showed that 39 patients with known AF have a stroke each year across LCCG and from our results we expect a 36% reduction.

CONCLUSION

A Consultant Cardiologist led programme across GP practices in LCCG has enabled improved anticoagulation to prevent AF-related stroke.



INNOVATIVE ATRIAL FIBRILLATION (AF) DETECTION IN A RURAL COMMUNITY SETTING USING THE FIRE & RESCUE SERVICE IN CUMBRIA

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NORTH EAST AND NORTH CUMBRIA, UK

Introduction: The North East and North Cumbria region has approximately 17,661 people with undetected AF (QOF 2018/19 data). The AHSN NENC were allocated 370 pulse-checking devices by NHS England and a further 100 devices were purchased by the AHSN. The aim was to detect AF in asymptomatic, high-risk patients, and devices were allocated to different professional groups including those in non-healthcare settings such as the Fire and Rescue Service (FRS). Cumbria FRS used AliveCor as part of their Safe and Well visits which included pulse checking, alcohol reduction, smoking cessation, social wellbeing and falls, all focusing upon older, more frail and vulnerable people.

Outline of Service: Between January 2018 and March 2019, a project lead trained Cumbria FRS Safe and Well Team on a face-to-face basis in small groups (<10 people). They were given a protocol for use and offered support through an online video. To maintain engagement, they received a series of seven automated emails for three months after training which consisted of case studies and infographics. Device usage was monitored and feedback to the staff and organisation. FRS actively promoted AliveCor's use in North Cumbria and specifically in Eden Integrated Care Community (ICC) as well as Keswick & Solway ICC and Copeland ICC.

Care pathway and/or treatment: The initial challenge was to obtain a route for referral from the FRS, so the person identified with possible AF could receive a 12-lead ECG to confirm or refute an AF diagnosis. This was managed according to local ICC arrangements, with any possible AF diagnoses referred to the Lead GP at Eden ICC who contacted the patients' practice, whereas the other ICCs had referrals through the Prevention Team Hub at FRS who then sent this onto the identified person's GP.

Results: AliveCor devices were used 169 times, detecting 11 abnormal rhythms (6.5% detection rate). Cumbria is a large, rural area with some isolated communities and hard-to-reach individuals. For one woman, who was diagnosed with AF, had it not been for the visit of the crew, she reported that the outcome could have been life changing for herself and her family and could not stress enough the importance of taking the test when offered, as it has potentially saved her life.

Conclusion: Locating AliveCors in non-healthcare settings with those who can reach isolated communities and individuals, who may not engage with healthcare services, proved to be beneficial in detecting people with undiagnosed AF.



HARNESSING THE POWER OF CARDIAC REHABILITATION: AN EFFECTIVE INTERIM SERVICE TO SCREEN AND REFER IN AF MANAGEMENT

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Patients diagnosed with Atrial Fibrillation (AF) previously attended Cardiac Rehabilitation (CR) programmes after a referral was made by an appropriate Arrhythmia Specialist and following their Outpatient review. The reality for the patient was a process that resulted in months before they were referred into and able to access the extensive support and information CR provides. CR Services accept a variety of Cardiovascular conditions and clinical observations routinely include heart rate and rhythm checks, irrespective of diagnosis. Our CR Service saw 2783 patients in 2019-2020 and referral to appointment waiting times are currently 14-26 days; substantially earlier than many Specialist appointments. It was felt that there was a great opportunity to harness the power within CR by utilising the Service in the early screening and education of patients prior to, instead of post, Specialist review. CR could allay patient concerns, screen for additional needs, resulting in a targeted specialist consultation with a well-informed patient.

The Arrhythmia and CR Services worked in partnership to flip the previous referral pathway and initiated a referral to CR as soon as the patient was referred to the Arrhythmia Specialist Team. This simultaneous referral allowed CR to instigate a series of immediate support and screening processes to allow prompt treatment and commence referrals to additional organisations, required for comprehensive patient management.

All AF patients are now screened for Obstructive Sleep Apnoea (OSA) in CR through information packs, OSA screening questionnaires and patient consultation. This has resulted in the successful identification of positive patients, prompt referral to Sleep and Ventilation Services and the commencement of management strategies i.e CPAP, prior to an Arrhythmia Specialist review. Any new heart diagnosis can be anxiety-provoking for patients and lead to a period of fear-avoidance and inactivity. This can be immediately offset by the support processes in place and well-utilised by the CR Service, including Cognitive Behavioural Therapies, Education Groups, Ask the Expert AF Podcasts and other virtual resources. The CR Service has a wide-ranging social media platform for home exercises, education sessions and online patient/carer support groups; all trust-worthy material monitored and produced by CR clinicians. Aspects of the gym-based programme may require prior review by a Specialist, but there are certainly aspects of the CR Service better placed to support and screen patients in the interim, and the success of this project undoubtedly lies in its simplicity.



DOING SIMPLE THINGS WELL: PRACTICE ADVISORY IMPLEMENTATION REDUCES ATRIAL FIBRILLATION AFTER CARDIAC SURGERY

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Background: Atrial fibrillation after cardiac surgery (AFACS) is a very frequent complication affecting 30-50% of all patients following heart operations. It is associated with increased morbidity, mortality and hospital and intensive care unit (ICU) length of stay. We aimed to implement an AFACS prevention care bundle based on a recently published practice advisory [1], focusing on early postoperative (re)introduction of β -blockers.

Methods: Baseline AFACS incidence and β -blocker administration practices in our centre were audited for all patients undergoing valve surgery and/or coronary artery bypass graft (CABG) during a 6 week period. The AFACS prevention care bundle graphical tool was subsequently introduced to the cardiac ICU by a multidisciplinary team and audited following a model of improvement approach. Differences between pre- and post-implementation groups were compared using Chi-square and Fisher's exact tests for categorical, and One-way ANOVA for continuous variables.

Results and Discussion: Patient and surgery characteristics did not differ between audit groups. After introducing the care bundle, we found a significant increase in the number of patients who received postoperative β -blockers and a significant decrease in the incidence of AFACS from 35.4% to 23.3% ($p=0.009$). Furthermore, β -blockers were administered earlier and β -blocker withdrawal, by failure to reintroduce pre-operatively prescribed β -blockers, was reduced. The increased use of early postoperative β -blockers indicates successful uptake of the new care bundle and translates into 191 fewer patients with AFACS per year in our hospital and thus a significantly reduced morbidity. By introducing an easy to follow care bundle, we adopted a strategy that has proven to be highly successful in other areas of medicine and to our knowledge is new in the context of AFACS. Through this, we were able to engage all levels of staff involved in patient care, maximising the effective implementation of the care bundle and embedding its continued use into the future. Our multidisciplinary team approach was paramount to the successful implementation of the scheme by placing joint responsibility for patient management on all members of the post-operative care team and helping to move away from purely consultant led decision making.

Conclusion: The implementation of the tool has led to changes in clinical practice which will help minimise risk of AFACS for the benefit of our patients, and potentially reduce hospital expenditures.

Reference: [1] O'Brien B et al. (2019) SCVA/EACTA Practice advisory for the Management of Perioperative Atrial Fibrillation in Patients Undergoing Cardiac Surgery. J Cardiothorac Vasc Anesth. 33(1):12-26.

Prevention of Atrial Fibrillation Care Bundle

Patients: All patients undergoing CABG, valve procedures or combined CABG + valve procedures

Setting: Adult Cardiac Critical Care Units, Cardiothoracic wards

Time: first 5 days post-operatively

Pillars of AF prevention

1. Beta-blocker initiated/reinitiated early when following criteria met:

- HR >60 beats per minute
- MAP >60 mmHg
- Not on dual vasopressors/any inotropic agent
- ≤ 0.05 mcg/kg/minute Noradrenaline
- No contra-indication to beta-blockade use (poorly controlled asthma; allergy/intolerance; bradyarrhythmia without pacing wires).

2. Optimise Electrolytes:

- If serum Magnesium <1mmol/L give 20mmol IV Magnesium Sulphate
- If serum Potassium <4.0mmol/L give 20mmol IV Potassium Chloride

3. Ensure optimum fluid balance. Avoid overhydration/aggressive diuresis.

- Record fluid balance over first 48 hours

4. Minimise pain. Keep PCA until drains removed.

- Record pain scores over first 48 hours
- Separate pain scores used for sedated and conscious patients

5. Reduce post-operative hypoxia:

- Target SpO₂ 94-98% (or as clinically appropriate in COPD patients)
- Record SpO₂ over first 48 hours

THE NIHR GLOBAL HEALTH RESEARCH GROUP ON ATRIAL FIBRILLATION MANAGEMENT: HELPING DEFINING AF CARE IN BRAZIL, CHINA AND SRI LANKA

GREGORY YH LIP, PAULO LOTUFO, YUTAO GUO, RAJENDRA SURENTHIRAKUMARAN, TRUDIE LOBBAN, LINDSEY COOKE, G NEIL THOMAS, ON BEHALF OF THE NIHR GLOBAL REACH AF INVESTIGATORS

(BRAZIL, CHINA, SRI LANKA, AND UNITED KINGDOM)

Atrial fibrillation (AF) is the most common arrhythmia globally and its main causes (hypertension, diabetes) are common in low/middle-income countries (LMICs), as is AF under-anticoagulation, leading to missed opportunities in preventing AF-related strokes and cardiovascular disease. We have led changes in AF management in diverse healthcare systems by promoting AF detection, stroke risk assessment, enabling clinicians to manage AF in an integrated/holistic manner, implementing the ABC pathway [1], see Figure 1, adapted from [2].

This NIHR Global Health Group is working with disadvantaged populations in Brazil, China and Sri Lanka, which have different risk profiles, healthcare systems and needs. By co-developing known effective methods to increase awareness of AF, its complications and implementing evidence-based treatments, we aim to build long-term, sustainable collaborations to increase AF education/awareness through patients, families, healthcare providers, and develop research capacity. The program delivers locally-focused evidence-based research to develop patient pathways as models of best care to reduce healthcare inequalities, improve well-being and health outcomes that could be introduced in other developing countries.

Case examples:

Brazil: Project 1: defined the clinical epidemiology of AF in Brazil through analysis of 4-year follow-up data (Brazilian Longitudinal Study of Adult Health). Project 2: A community hospital stroke cohort (EMMA) investigated the impact of AF on long-term outcomes and anticoagulation use. Project 3: Data from >2000 community hospital medical records of patients receiving OACs identified key factors associated with poor anticoagulation and mitigation opportunities. Project 4: Patient care pathway mapping studies using HCP/patient perspective interviews/focus groups examined management barriers and potentials to optimise care.

Sri Lanka: Project 1: A screening study

(N=10,000) to identify unknown AF prevalence/burden. Project 2: Evaluation of AF-mHealth platform to streamline AF patient care. Project 3: Investigated hospital AF management and secondary stroke prevention opportunities.

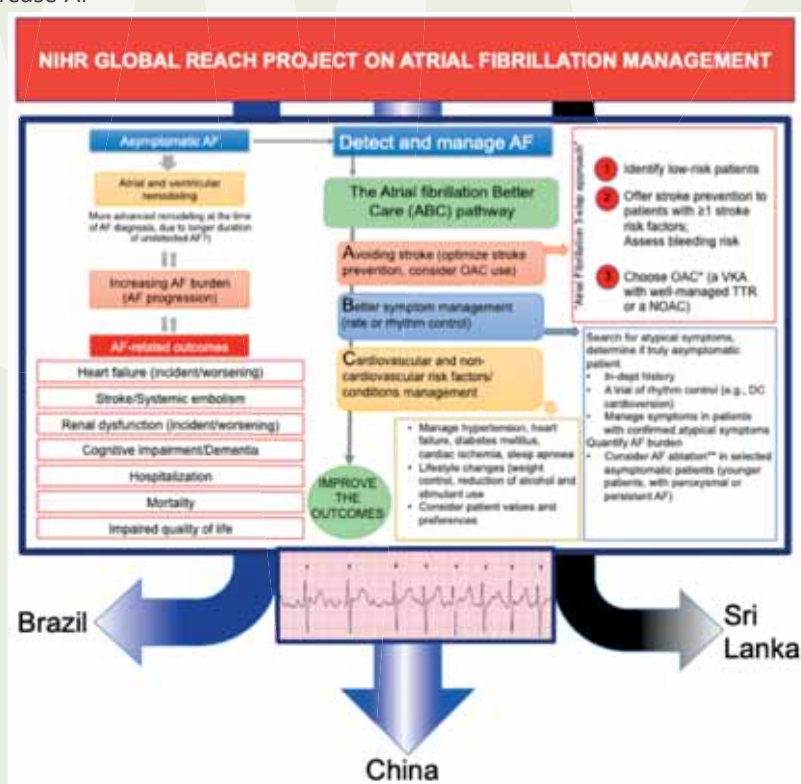
China: Project 1: Four focus groups with HCPs undertaken with iterative UK feedback. Project 2: Co-produced feasibility testing of mobile Health (mHealth) patient-orientated education and AF management algorithm.

Conclusion:

LMIC-partners in this three year funded NIHR programme are identifying keys aspects throughout the identification and management of AF pathway through research to bring about changes that will benefit patients and influence future methods of AF care. We have worked with partners/patients/carers to address country-specific training needs, defined co-developed key research questions to assess needs, and implement effective 'value for money' projects.

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- [1] Lip GYH. Nat Rev Cardiol. 14(11):627-628;2017.
- [2] Arnar D, et al. Europace. doi:10.1093/europace/euz046;2019



PROTECTION OF PATIENTS WITH ATRIAL FIBRILLATION (AF) IN PRIMARY CARE: OUTREACH EDUCATION THROUGH CLINICAL CONSULTATIONS TO DEVELOP ANTICOAGULANT CONSULTATION AND DECISION MAKING SKILLS

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CHARMAINE BRANDON**

WESSEX ACADEMIC HEALTH SCIENCE NETWORK, UK

The goal of this project, funded by a Pfizer grant, was to optimise anticoagulation in patients with AF in primary care, whilst increasing knowledge and skills of GPs and/or Practice Pharmacists in anticoagulation discussions.

Brief Outline of Service

In collaboration with Dorset CCG, practices were invited to join the project. At each practice, an introductory meeting was held with the project Pharmacy Technician (PT) and Anticoagulant Specialist Practitioner (ASP) to outline the project. A knowledge and confidence questionnaire was given to each clinician. The PT worked with each practice to audit caseloads using GRASP AF and Warfarin Patient Safety Tools to identify patients for review, focusing on patients not currently, or sub-optimally treated and at risk of stroke. The PT and ASP reviewed each patient's notes, and the ASP held a discussion on the findings with a GP or Practice Pharmacist. Patient Centered Decision Making approaches were used and anticoagulation was either initiated or not, as agreed with each patient. Follow up calls to patients were made by the PT as required to see how they were getting on and to reinforce safety messages around symptoms of bleeding.

Once patient reviews had been completed and actions undertaken, audits were rerun to compare data, and a feedback meeting was held at which post project knowledge and confidence questionnaires were distributed. Audits were repeated six months post project.

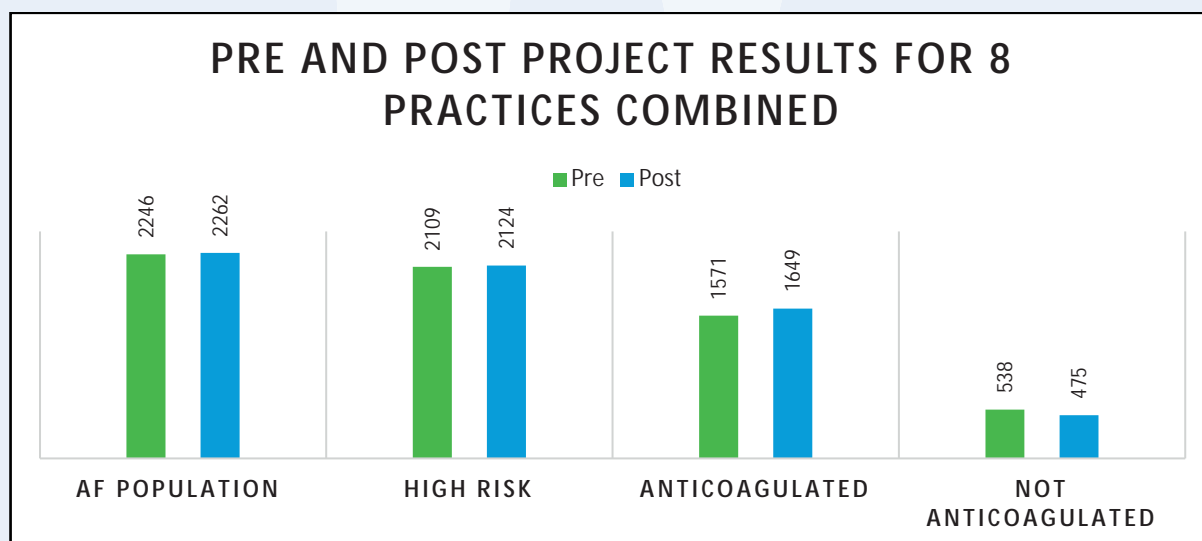
Results and conclusions

878 patients were reviewed across eight practices. Approaches to undertaking patient reviews varied between practices. Practices where GPs reviewed their own patients, rather than allocate one lead, seemed to have better rates of change.

The audits showed an average of 26% of patients were coded as AF resolved. It was often difficult to find the reason for this coding and limited processes were in place for reviewing these high-risk patients. Anticoagulation rates increased in all practices (range 1.48% - 5.72%). Other general findings were:

- Significant numbers of patients on aspirin monotherapy with no clarity on the history. Lack of pathway to review patients as they age, or their overall health declines.
- Improvements in prescribing were sustained after six months. Warfarin prescribing decreased.
- Clinicians knowledge increased in 16/19 areas and confidence in 11/15 areas. Links with Secondary Care Anticoagulation Services also improved.

We are exploring a model of Primary Care Network (PCN) Pharmacists and PTs leading regular medicines audits and managing discussions with more complex patients.



COMMUNITY NURSES PREVENTING AF-RELATED STROKE IN HIGH RISK CARDIAC PATIENTS

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THE ACADEMIC HEALTH SCIENCE NETWORK,
NORTH EAST AND NORTH CUMBRIA, UK

Introduction: The North East and North Cumbria region has approximately 17,661 people with undetected AF (QOF 2018/19 data). The AHSN NENC, were allocated 370 hand-held pulse-checking devices, AliveCor Kardia, by NHS England with the aim of detecting AF in asymptomatic, high-risk patients. Devices were allocated to different healthcare professional groups including community nurses such as heart failure nurses, cardiology nurses and physiotherapists within the Cardiac Rehabilitation team, Community Stroke & Rehabilitation team and Community Nursing team. They work with patients who have existing cardiology conditions or who have suffered a previous stroke and likely to be at higher risk of developing AF. The nurses were located in Northumbria, County Durham and Darlington, and North Tees and Hartlepool.

Outline of Service: Between January 2018 and March 2019, a project lead trained the community nurses on a face-to-face basis in small groups (less than ten people). They were given a protocol along with supporting resources. To ensure engagement remained high, they received a series of seven automated emails for three months after training. These consisted of case studies and infographics. Device usage was monitored and feedback to the nurses and their organisations. Motivation was maintained with reward and recognition at team meetings for those with high usage.

Care pathway and/or treatment: Any patients detected with an irregular pulse were referred for a 12-lead ECG to confirm or rule-out AF.

Results: Over 14 months, the AliveCors were used 1,086 times, detecting 251 abnormal rhythms and potentially saving ten strokes. This was a detection rate of one in four. These teams reported the hand-held device helped with work efficiencies, detecting new AF cases more quickly, reducing impact on hospital services with less of a requirement for 12-Lead ECGs and instant transfer of readings to a cardiologist for real-time advice. Patients responded positively to the immediate reassurance which could be provided, along with the reduced need for hospital 12-lead ECG appointments.

Conclusion: Locating AliveCors to community cardiology nurses proved to be beneficial in detecting people with undiagnosed AF. They generated the highest detection rate of all settings used at 23%. There was also an unexpected, reported benefit around improving service efficiencies with increased remote monitoring, demonstrating that new technology can positively impact work processes along with improving effective clinical care and benefits for patients.



SCREENING FOR ATRIAL FIBRILLATION WITHIN A SOUTH ASIAN COMMUNITY SETTING USING A SINGLE-LEAD ECG

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INTRODUCTION: Timely detection and treatment of AF is amongst the Government's cardiovascular priorities. Several initiatives have demonstrated the potential of AF detection using single-lead electrocardiogram (SL-ECG) technology in primary care settings, such as general practitioners' (GP) surgeries. Unfortunately, some AF patients, including those from ethnic minorities, may not routinely engage with main-stream healthcare and may go undetected. Compared to White British, South Asians have a higher prevalence of cardiovascular risk factors, however fewer are diagnosed with AF. This study aimed to ascertain the feasibility of opportunistic AF screening within a South Asian community delivered by supervised pharmacy undergraduates using SL-ECG devices.

OUTLINE OF SERVICE: This was a collaboration between the Universities of Greenwich and Kent, the AF Association and two Sikh temples (Gurdwaras) in Gravesend and Sheffield. Six pharmacy students of British Indian ethnicity were trained by a clinical pharmacist to record SL-ECG using AliveCor Kardia Mobile® devices. Individuals aged ≥ 18 years were invited to participate at the Gurdwara in Gravesend during the Global AF Aware Week (November 2019) and at the Gurdwara in Sheffield during a public health event in March 2020. Researchers provided eligible participants with information about the study and obtained written consent. All participants underwent a 30-second SL-ECG test with a student under supervision by a clinical pharmacist and were given a provisional diagnosis. They were also asked to complete an optional feedback questionnaire. Participants with 'Possible AF' or inconclusive diagnoses were referred to their GP. SL-ECG



traces were retrospectively over-read by a cardiologist to determine diagnostic accuracy. The economic impact was also evaluated.

RESULTS: 608 participants (average age 60.0, 96.1% British Indian, 53.5% female) were screened at the two Gurdwaras and ten (1.6%) were given 'Possible AF' diagnoses. The cardiologist approved five out of ten 'Possible AF' cases (0.8%) and three (0.5%) qualified for oral anticoagulants (average CHA₂DS₂VASc of 3.8). 324 participants (53.3%) completed a feedback questionnaire. More than 60% were unaware of AF or associated risks but 97.8% felt the screening was important. Respondents valued the accessible and informative service at their local Gurdwara and 98.4% were happy to engage the following year. AF screening was cost-effective at £2,437 per quality-adjusted life year gained.

CONCLUSIONS: Trained pharmacy undergraduates can successfully use SL-ECG devices to screen a large cohort of individuals for AF within a South Asian community setting over a short period of time. This helps identify at-risk patients and produces economic benefits.

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OPPORTUNISTIC SCREENING FOR ATRIAL FIBRILLATION AMONG CULTURALLY AND LINGUISTICALLY DIVERSE COMMUNITIES IN AUSTRALIA

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Aim: To determine whether community events provide useful opportunities to screen and therefore provide potential early interventions in the Sri Lankan community for Stroke risk factors, such as: paroxysmal Atrial Fibrillation (pAF) in people aged >65 years; Type two Diabetes Mellitus; and Migraine (first such study ever to be conducted in Australia).

Background: Stroke is a leading cause of disability and mortality in Australians. pAF, Diabetes and Migraines are known associated risk factors but are frequently underdiagnosed and often suboptimally controlled. To address this, we can utilise previously validated devices, such as the single lead non-invasive electrode for AF, and validated questionnaires, such as the AUSDRISK questionnaire for Diabetes and ID-Migraine screening tool, for early identification and thus referral to appropriate healthcare professionals for further management. This may reduce the overall disability of Stroke and improve quality of life significantly.

Methods: Sri Lankan Australians were invited to participate in community health screening programs where baseline information such as demographics and CHA₂DS₂VASc score was collected. T2DM risk was determined using the AUSDRISK questionnaire, BMI calculation and lifestyle questionnaire. Results were then discussed with participants with provision of lifestyle advice. Random blood glucose testing was offered to "high risk" participants based on AUSDRISK, and those testing ≥ 7.0 mmol/L were advised to check their HbA_{1c} with their General Practitioner. Re-assessment of the same participants will be conducted in one year with the same method as described. Cardiac rhythm for pAF was conducted with a one lead non-invasive device recording with two fingers on the electrodes for 30 seconds. If an "unclassified" or "irregular" rhythm was detected, these participants were referred for a 24 hour Holter test to diagnose AF. The ID-migraine questionnaire screened participants for their risk of migraine with those scoring ≥ 2 being directed to appropriate management services.



Results: 24% (11/45) had "unclassified" rhythms and 63% (7/11) of these participants were female. 11% (5/45) of participants had a positive ID-Migraine score with 60% (3/5) of these with no previous diagnosis of Migraine. Preliminary results of AUSDRISK assessment indicate that a high proportion of participants in "high risk" category had relative low healthy lifestyle and dietary knowledge.

Conclusion: Our preliminary results indicate that community based screening programs are feasible and safe and addresses important Stroke risk factors such as pAF, Migraine; and glycemic control. Early detection and management with pharmacological agents or lifestyle modification may mitigate Stroke disability and mortality outcomes. We hope to continue to expand this project to other culturally and linguistically diverse communities in the future.

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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

NOTES



A large, light blue graphic of a hand with fingers spread, holding a white pulse line that runs across the page. The pulse line has several peaks and valleys, resembling a heartbeat. The background is a light blue gradient.

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

- AF fact file
- Ablation for AF
- Accessing appropriate treatment options
- AF and you
- Atrial flutter
- FAQ
- Living with AF and atrial flutter
- Mindfulness and healthy living with AF
- Oral anticoagulant therapy
- Preventing AF-related stroke
- The heart, the pulse and the ECG
- Atrial fibrillation patient information
- Cardioversion of AF
- Drugs
- Treatment options for AF
- AF and heart failure
- Bereavement - Life following the loss of a loved one

Checklists

- AF
- Patient & primary care

Factsheets

- AF and heart failure
- AF-related stroke
- Amiodarone
- Anticoagulant alert card
- Anticoagulation and AF
- Anticoagulation and self-monitoring
- Apixaban
- AF and aspirin: Frequently asked questions
- Atrial fibrillation (AF)
- Atrial flutter
- Being a NICE patient expert
- Beta blockers
- Cardioversion
- Cognitive behavioural therapy (CBT)
- Dabigatran
- Digoxin
- Dronedarone
- Ectopic heartbeats
- Edoxaban
- Flecainide
- Heparin
- Miniature insertable cardiac monitor (ICM)
- Pacemaker and AV-node ablation
- 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?

GLOSSARY

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

CHA₂DS₂VAS_c

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

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AF Association Global AF Aware Week

15-21 November 2021

www.gafaw.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.heartrhythm-specialists.org



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