



Alliance grant application for improving the care of patients in the black country with atrial fibrillation

Main Collaborators

Both the Black Country Alliance Board and Clinical Reference Group have approved the mandate for this project. The main clinical collaborators from the three member Trusts are:

Sandwell and West Birmingham Hospitals NHS Trust (SWBH)	Professor Gregory YH Lip Professor Paulus Kirchhof Professor Deirdre Lane
The Dudley Group NHS Foundation Trust (DGFT)	Dr Joe Martins
Walsall Healthcare NHS Trust (WHC)	Mr Amir Khan, Medical Director

Additionally, this grant application has been endorsed by:

Dudley CCG	Joanne Gutteridge
Sandwell CCG	Dr Saj Sarwar
The West Midlands Academic Health Science Network	Dr Chris JR Parker CBE

Abstract

Our project incorporates evidence-based education and quality improvement in the diagnosis, treatment and management of patients with atrial fibrillation. The key components are: Targeted education support and upskilling for Primary Care clinicians, arrhythmia and community nurses, and patients, incorporating innovative new CATCH ME tools, which are based on the new ESC Clinical Practice Guidelines on AF; AF screening in GP practices through the use of cost-effective, innovative Kardia™ Mobile technology; system-wide pathway changes to introduce an evidence-based integrated model of AF care.

The overall approach to the project is to build on existing best practice and learning from the adoption of innovative technology both within the UK and internationally. Additionally the project is a collaboration via established networks across the Black Country, which will enable large-scale and standardised adoption of this innovation such that there is significant impact on the quality of care provided to AF patients and a reduction in the risk of stroke.

Evaluation will be undertaken in terms of clinical outcomes, patient experience and cost-effectiveness as well as contributing to wider learning and evaluation through both the WMAHSM and the European-wide CATCH ME consortium.

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Chapter 1: Proposal

Overall Goal and Objectives

Our project incorporates evidence-based education and quality improvement in the diagnosis, treatment and management of patients with atrial fibrillation (AF). We are requesting grant funding from Pfizer to the indicative value of £78,890.

The key components are:

1. Targeted education support and upskilling for Primary Care clinicians, arrhythmia and community nurses, and patients, incorporating new tools such as the innovative CATCH ME (Characterising Atrial Fibrillation by Translating its Causes into Health Modifiers in the Elderly, www.catch-me.info) tools. Based on the new ESC Clinical Practice Guidelines on AF, CATCH ME tools are designed to support clinical decision-making in line with best practice guidelines. They provide a first guidance accessible to all health care professionals (with and without specialist training or experience). Alignment with (and audit against) NICE guidelines on AF (2014), NICE QOF standards and NICE Quality Standards for AF (2015) would also be made. This will:
 - a. Enable, best-practice in diagnosis and initiation of management of AF patients in primary care, acute medicine, and by other health care professionals (e.g. nurse-led);
 - b. Increase the level of patient involvement in their own care;
 - c. Targeted referral to specialist services.
2. AF screening through the use of cost-effective, innovative Kardia™ Mobile technology in GP practices. This approach adopts best practice from previous work undertaken in the region, for example a user guide for GPs has already been developed and tested (Marszal and Chambers 2016).
3. System-wide pathway changes to introduce an evidence-based integrated model of AF care, incorporating the new CATCH ME tools.

The main collaborators on the project include the 3 acute Trusts (Sandwell and West Birmingham, The Dudley Group, and Walsall Healthcare) which comprise The Black Country Alliance (BCA). The BCA is a new model of acute care collaboration that sits at the heart of the Black Country Sustainability and Transformation Planning (STP) footprint. We are working together and with primary care colleagues to deliver high quality, sustainable services locally for the benefit of the Black Country with the triple aim of:

- Improving health outcomes for the million plus people we serve;
- Improving health care experience for those people and our own colleagues who deliver this service;
- Making the best use of the resources we have available.

The Black Country STP aims to shift the focus on some of the big challenges facing our local health economy. Since AF affects 2-3% of the UK population (mainly elderly persons ≥65 years) and management of AF-related complications expends 1-2% of the total NHS budget, this is a key element of our work in the coming months and years. Across the 3 BCA Trusts we spend approximately £1bn of NHS money. This infers that there is an opportunity to

improve the value associated with approximately £10m of spend on AF-related care. Furthermore, incidence and prevalence will likely double or even triple in the next 20 years requiring innovative solutions to be developed to get ahead of this problem and close the care & quality gap, the finance & efficiency gap and the health & wellbeing gap.

We believe there is an opportunity to implement an integrated AF service across the Black Country, bridging primary and secondary care, to establish co-ordinated and systematic AF patient pathways, streamlining the patient journey, and broadening the reach of the extant AF services, thus providing increased access to our established holistic care model.

The key objectives of our Project are:

- Education and upskilling of GPs, to support initiation of AF management within an integrated approach to care, and continuation of management of less complex AF patients within primary care;
- Increase patient involvement in their own care;
- Use of innovative technology to increase clinician adherence to guidelines on AF and to increase the uptake of best practice treatments (Hendricks *et al.* 2012) across primary and secondary care;
- Use of technological innovations to identify more people with AF e.g. patients waiting in GP practices;
- Improve outcomes for patients with AF across the Black Country by implementing an evidence-based nurse-led model of integrated care;
- Reduce variation in outcomes for patients with AF through collaborative implementation of the nurse-led model across the Black Country Alliance acute Trusts;
- Incorporate the use of risk stratification technology based on the 2016 ESC AF guidelines (reflecting the current NICE guidance) to more effectively identify patients with AF and to target proactive treatment interventions.

Current Assessment

National Context

In the Black Country, as across the country, AF is a major cause of stroke, heart failure, sudden death, and hospitalizations, with mortality approximately doubled in AF patients (due to stroke, heart failure, sudden death, etc.). 20-30% of all strokes are attributable to AF and 5% of strokes are a first presentation of untreated AF. AF-related strokes are often more severe and survivors face greater disability and less chance of returning to an independent existence, resulting in greater burden on healthcare resources, as well as significant societal and personal burden. With 20-40% of AF patients hospitalized every year; this places a large burden on in-patient beds and hospital flow.

Local Context

The Black Country has a total population of around 1.4 million patients, and almost half of these patients live in the most deprived areas of England as defined by the Index of Multiple Deprivation (2015). Data provided by NHS England for the Black Country STP data pack in 2016 shows that premature death from stroke in the Black Country is worse than the national average, as high as 19.7 deaths per 100,000 population compared to 13.5 nationally. With smoking, alcohol, inactivity and hypertension indicators also high, as to be expected with high areas of deprivation, the pressure on stroke rates is expected to continue to grow. Importantly, the Black Country also has a particularly broad multi-ethnic demography and therefore presents a valuable opportunity to better understand how ethnicity may or may not contribute to AF and risk of stroke.

We know that each locality within the Black Country is starting from a different position, has different operating models and different needs for 2016/17. Initially therefore, the requirement of the project is to reach a mutual understanding of the starting position, baseline outcomes and indicators, variation and an approach to AF management that represents an opportunity for improving the identification and treatment of AF. Table 1.1 shows the latest data from the SSNAP (Sentinel Stroke National Audit Programme) audit by Black Country CCG.

Table 1.1 – SSNAP Results Jan-Mar 16 for Black Country CCGs

<i>Item</i>	<i>Data type</i>	England	<i>Dudley CCG</i>	<i>Sandwell and West Birmingham CCG</i>	<i>Walsall CCG</i>	
Number of stroke patients	(d)	20373	126	142	78	
Case ascertainment		90%+	90%+	80-89%	70-79%	
Atrial Fibrillation (AF) before stroke	n	3983	19	17	12	
	d	20373	126	142	78	
	%	19.6	15.1	12	15.4	
If AF before stroke, on anticoagulant medication:	d	3983	19	17	12	
	Yes	n	1992	8	9	9
		%	50	42.1	52.9	75
	No	n	1528	11	5	1
		%	38.4	57.9	29.4	8.3
%		38.4	57.9	29.4	8.3	
No but*	n	463	0	3	2	
	%	11.6	0	17.6	16.7	

* 'No but' for the atrial fibrillation can only mean 'no - but for good reason' - which means the clinician judges that the individual patient risk of bleeding complication (related to anticoagulant or antiplatelet therapy) outweighs benefit in stroke risk reduction.

Adequate management of AF is often inhibited by lack of access to specialist care, especially amongst the frail and elderly, and patients with multiple co-morbidities. Insufficient access to specialist input leads to underuse of evidence-based therapies, unnecessary treatment, avoidable complications, including heart failure, stroke, and cardiovascular death and preventable hospitalisations. This is not only unacceptable for affected patients, but also puts avoidable burden on the health and social care system.

Currently detection of AF is low (1.1% for our CCG population compared to national averages of 1.8-3.0%) and 35% of eligible AF patients are not anticoagulated. The SSNAP data above shows that untreated AF is common in stroke patients in Dudley and Sandwell. CCGs have highlighted the importance of integrating AF care across sectors (ambulatory and in-patient, primary care and specialist input, nurse-led outreach services, etc.) with the need to develop, implement and audit integrated AF patient pathways. Streamlining the AF patient journey would help address deficiencies in current management approaches and optimise treatments, benefitting both patients and the NHS. Complex information needed by AF patients is limited by clinician availability and time constraints; this information may be better conveyed by specially trained nurses, other non-specialist healthcare professionals and dedicated IT. The IT tools developed by the CATCH ME consortium provide excellent support for such an integrated approach to AF care.

Target Audience

There are 3 key components to the Project that each targets a different audience:

1. Education and upskilling is aimed primarily at GPs but will also impact on other non-specialist primary and secondary care clinicians;
2. Opportunistic screening is aimed at both patients and primary care practitioners (GP surgeries);
3. The integrated care model and associated technology is targeted at arrhythmia and community nurses, GPs and other non-specialist clinicians (e.g. in acute medicine) involved in the treatment and management of patients with AF across secondary and primary care.

Commitment to the Project

Main Collaborators

Cardiology colleagues at all 3 BCA Trusts are committed to working together to improve outcomes for AF patients through the adoption of innovation to improve outcomes for people across the Black Country. The BCA Board has sanctioned the establishment of a formal project to take this forward and a letter of commitment is included in Chapter 6.

Recruitment will be required for the AF-specialist nurse. This is included in the Project work plan and deliverables section below.

Clinical Commissioners

Commissioners are keen to be involved and to ensure that Primary Care colleagues are closely connected to the spread of innovation and knowledge to help get ahead of this growing challenge. There are existing strong relationships with both Sandwell and Dudley CCGs, who have endorsed this application. In Sandwell, the collaboration is a long-standing one and much work has already been done on the primary-secondary care AF pathways. Additionally, some upskilling workshops with GPs have been undertaken and more are planned. In Dudley, AF prevalence is around 2.0% and there are high anticoagulation rates (very high NOAC use, with over 4,400 patients on a NOAC). Previously, work has been undertaken and is ongoing with primary care colleagues including:

- GRASP-AF programmes in GP surgeries;
- A series of AF educational lectures/ road shows;
- Development of an electronic Primary Care AF pathway, which every surgery has access to;
- Regular meetings with CCG colleagues/ Pharmacy representatives in an Anticoagulation Steering Group.

Both CCGs are committed to building on the existing educational work through the use of innovative technology in order to reach a much wider audience. They are also committed to implementing a standardised, integrated AF pathway across the Black Country.

WMAHSN

We have support from the West Midlands Academic Health Science Network (WMAHSN) and a letter of commitment is included in Chapter 6. This includes specific support from the LTC Network clinical lead, Dr Ruth Chambers, and an information governance expert, Neil Mortimer.

CATCH ME Consortium

Our consultant cardiologists have working relationships and involvement with the CATCH ME consortium. The consortium is particularly interested in the following aspects of our project and is therefore committed to supporting our work:

- Beta testing of both the clinician and patient facing CATCH ME apps;
- Evaluation of the first version CATCH ME app in clinical settings (interest from the App Committee and the EU Commission);
- Evaluation of the governance implications and ethical considerations associated with interfacing the CATCH ME apps with hospital clinical systems;
- Evaluation of the patient-facing app in terms of uptake, particularly within the over 65s population.

Scope to Impact: the evidence base

Education and Upskilling

This aspect of the project forms part of ongoing work with primary care, public health and Birmingham University colleagues. It also presents an opportunity to incorporate novel approaches to increasing the uptake of anticoagulants.

Alongside use of the CATCH ME app, the project incorporates education and upskilling of primary care clinicians and patients using ECHO (Extension for Community Healthcare Outcomes), a multimedia information sharing platform aimed at moving knowledge and information from specialists to generalists:

“The ECHO model™ does not actually ‘provide’ care to patients. Instead, it dramatically increases access to specialty treatment ... by providing front-line clinicians with the knowledge and support they need to manage patients with complex conditions ... It does this by engaging clinicians in a continuous learning system and partnering them with specialist mentors at an academic medical centre or hub.

As the ECHO model expands, it is helping to address some of the health care system’s most intractable problems, including inadequate or disparities in access to care, rising costs, systemic inefficiencies, and unequal or slow diffusion of best practices. Globally, policymakers are recognizing the potential of ECHO to exponentially expand workforce capacity to treat more patients sooner, using existing resources. At a time when the health care system is under mounting pressure to do more without spending more, this is critical” (Project ECHO 2016).

This multi-media platform facilitates the transfer of information without the need for printed material and/ or physical learning space. For example, we have patient videos for the NOACs in development, and we are developing a series of ‘talking heads’ from AF experts, primary care colleagues and patients. Building on previous educational and upskilling work across the patch, the flexibility of online learning environments, electronic resources, etc. will facilitate a greater number of people being able to access the information than would otherwise be the case with more traditional learning methods (e.g. attendance at workshops and events). This increases the potential for our project to impact on larger populations.

AF Screening

Technological innovations are available to support the identification of people with undiagnosed AF in a more simple and cost-effective manner than via traditional outpatient clinics. AliveCor is a provider of this technology and is part of the NHS Innovation Accelerator, with endorsement from senior management within NHS England.

“The Kardia™ Mobile device includes automated software that instantly confirms normal sinus rhythm or the detection of atrial fibrillation (AF). With the option to attach to a smartphone, it is ideal for capturing arrhythmia during normal activities,

without the need for wires and patches. The free Kardia™ app can securely store and upload traces that can be printed, emailed or accessed remotely by health professionals. Kardia™ Mobile is not linked to a particular device or patient so can be easily transferred between practice staff or family members. It can be used in several clinical settings including routine appointments/ patient registration, health screening events, investigation of symptomatic patients and monitoring of patients with known conditions” (AliveCor, 2016).

As part of the project, we will trial use of the AliveCor technology (Kardia™ Mobile) in GP practices based on the work that has already been undertaken by primary care colleagues in Stoke and North Staffordshire CCGs (Marszal and Chambers, 2016). Within this model, patients are screened using a smart phone or tablet to produce an ECG reading. Any abnormal readings are followed up with a subsequent 12-lead ECG to confirm new diagnoses.

Integrated AF Care

The project aims to champion implementation of an evidence-based model of care, originally developed in Maastricht, Netherlands (Hendricks *et al.* 2012; Berti *et al.* 2013). The integrated (formerly called ‘nurse-led’) model of care is proven to produce better outcomes in terms of cardiovascular hospitalisation and cardiovascular mortality compared to usual models of AF care:

“Nurse-led care consisted of guidelines based, software supported integrated chronic care supervised by a cardiologist. The primary endpoint was a composite of cardiovascular hospitalization and cardiovascular death. Duration of follow-up was at least 12 months. Adherence to guideline recommendations was significantly better in the nurse-led care group. After a mean of 22 months, the primary endpoint occurred in 14.3% of 356 patients of the nurse-led care group compared with 20.8% of 356 patients receiving usual care [hazard ratio: 0.65; 95% confidence interval (CI) 0.45–0.93; P ¼ 0.017]. Cardiovascular death occurred in 1.1% in the nurse-led care vs. 3.9% in the usual care group (hazard ratio: 0.28; 95% CI: 0.09–0.85; P=0.025). Cardiovascular hospitalization amounted (13.5 vs. 19.1%, respectively, hazard ratio: 0.66; 95% CI: 0.46–0.96, P=0.029)” (Hendricks *et al.* 2012, p.2692).

Coupled with the use of the CATCH ME app, the model will support a number of non-specialist clinicians to provide best practice treatment and management of patients with AF, thereby significantly increasing the number of patients receiving proven interventions. The integrated pathway will also ensure more streamlined referrals into specialist Cardiologists where necessary thereby improving the patient experience and reducing delays to treatment. A dedicated AF nurse would improve understanding of the use of the app by GPs and patients, and would follow-up patients in the community, thereby reducing the need for secondary care attendance.

A first version of the CATCH ME app for health care professionals, including limited access to the novel ‘Overall Treatment Manager’ allows non-specialist health care professionals to give general advice on AF therapy (management of underlying conditions, anticoagulation,

rate control, consideration of rhythm control). It was released as part of the European Society of Cardiology (ESC) pocket guidelines on 27 August 2016. The full version of the new standalone app will be released in Q4 2016, including an updated app for healthcare professionals and a database in the background that stores patient-level AF therapy data and symptoms. Figure 1.2 provides an illustration of the Overall Treatment Manager within the app.

Figure 1.2 – Illustration of Overall Treatment Manager within CATCH ME App

We are considering anti-coagulation for stroke prevention in patients with AF in the broadest terms as opposed to focussing on the newest anticoagulant drugs as 100% is not realistic (considering some of the approved uses e.g. non-valvular AF, not end stage renal disease, etc.) nor affordable. Also, some anticoagulation clinic services achieve very good control of anticoagulation, with average time in therapeutic range (TTR) >70%. Hence, the priorities are two-fold: identifying those with AF and once AF is identified ensuring that eligible patients are anticoagulated; and also rate and rhythm control as well as overall AF management will be optimised in a holistic manner.

Later in 2017, CATCH ME will launch a patient-facing app that will be incorporated into our project, which will facilitate increased involvement of patients in their own care. To date, uptake has been mixed across other European countries and there is a risk that patients will not want to use the technology. In the Netherlands, uptake has been excellent and it is

believed that this population are more tech savvy. In contrast, patients in Germany have been much more reluctant to use the technology. As such, the project will exploit an upcoming opportunity to support beta testing of both the clinician and patient facing apps and will incorporate lessons learned to date to ensure patient uptake is maximised for our population. This version will also have an option to link to hospital information systems (e.g. for SWBH: by including a field for the “rxk number” and an HL7 interface to the HIS).

Benefits

Direct Benefits

Table 1.3 provides an overview of the direct benefits anticipated from the project, aligned to the support required. The Black Country Health economy will benefit as we see over time improved identification and treatment of AF patients leading to reduced rates of stroke, admissions for heart failure, and demand for hospital clinics. This will materially reduce burden on the local health economy.

Table 1.3 – Direct Project Benefits

Objective	Direct Benefits	Component/ Support Required
Education and upskilling of GPs, to support initiation of AF management within an integrated approach to care, and continuation of management of less complex AF patients within primary care	<ul style="list-style-type: none"> • Reduced delays to treatment pathways • Reduced secondary care attendance/ need for hospital specialist intervention (financial) • Easier access to improved care closer to home 	<u>Education & Upskilling</u> <ul style="list-style-type: none"> • ECHO platform • Talking Head
Increase patient involvement in their own care	<ul style="list-style-type: none"> • Reduced delays to treatment pathways • Increased self-help and patient engagement in own healthcare • Reduced secondary care attendance/ need for hospital specialist intervention (financial) • Improved patient satisfaction 	<u>Education & Upskilling</u> <ul style="list-style-type: none"> • ECHO platform <u>Integrated AF Care</u> <ul style="list-style-type: none"> • CATCH ME patient-facing app (no cost) • Marketing and engagement • Project Management
Use of innovative technology to increase clinician adherence to guidelines on AF and to increase the uptake of best	<ul style="list-style-type: none"> • Improved health outcomes through reduced risk of stroke and other consequences of untreated AF 	<u>Education & Upskilling</u> <ul style="list-style-type: none"> • ECHO platform • Talking Head <u>Integrated AF Care</u>

practice treatments across primary and secondary care	(particularly heart failure)	<ul style="list-style-type: none"> • CATCH ME apps (no cost)
Use of technological innovations to identify more people with AF e.g. patients waiting in GP practices	<ul style="list-style-type: none"> • Reduced delays to treatment pathways • Reduced secondary care attendance/ need for hospital specialist intervention (financial) • Improved patient satisfaction • Easier access to improved care closer to home 	<u>AF Screening</u> <ul style="list-style-type: none"> • Kardia™ Mobile devices • 12-lead ECGs • Project Management
Improve outcomes for patients with AF across the Black Country by implementing an evidence-based nurse-led model of integrated care	<ul style="list-style-type: none"> • Improved health outcomes through reduced risk of stroke and other consequences of untreated AF (particularly heart failure) • Reduced delays to treatment pathways • Reduced secondary care attendance/ need for hospital specialist intervention (financial) • Improved patient satisfaction • Easier access to improved care closer to home 	<u>Integrated AF Care</u> <ul style="list-style-type: none"> • AF Nurse • Mobile devices/ tablets • CATCH ME app (no cost) • Project Management
Reduce variation in outcomes for patients with AF through collaborative implementation of the nurse-led model across the Black Country Alliance acute Trusts	<ul style="list-style-type: none"> • Reduce variation in outcomes for patients with AF across the Black Country 	<u>Integrated AF Care</u> <ul style="list-style-type: none"> • Marketing and engagement • Informatics technical support • Project Management
Incorporate the use of risk stratification technology to more effectively identify patients with AF and to target proactive treatment interventions	<ul style="list-style-type: none"> • Improved health outcomes through reduced risk of stroke and other consequences of untreated AF (particularly heart failure) 	Not requested as part of this grant application (phase 3)

Additional Benefits

Longer-term, the model of care will need to involve the broad range of services that impact on AF management, for example anti-coagulant monitoring. Indeed, if successful, the bid presents an opportunity to trial an approach that can subsequently be disseminated out to other areas where AF patients may present (e.g. AMU) thereby reducing the wait time for cardiology appointments and preventing unnecessary delays to the treatment pathway.

Improved treatment of AF and adherence to management guidelines will reduce the incidence of Stroke and therefore reduce the burden of expensive, acute hospital episodes. Management of AF would also address the identified risk factors (smoking, alcohol, inactivity and hypertension) and therefore has the potential for greater overall benefit.

Finally, we expect to be able to bundle these innovations into a repeatable, scalable model of care that can be adopted across England to further benefit the wider health economy and improve outcomes and experience for the population nationally.

Project Design and Methods

Overall Strategy

The overall approach to the project is two-fold:

- To build on existing best practice and learning from the adoption of innovative technology both within the UK and internationally;
- To collaborate via established networks across the Black Country to enable large-scale and standardised adoption of this innovation such that there is significant impact on the quality of care provided to AF patients and a reduction in the risk of stroke.

Figure 1.4 provides an illustration of the overall project design and strategy. There is an expectation that we will make the case for sustaining the project if proof of concept is achieved within Phase 1.

This bid and the funding requested is to enable Phase 1.

Availability of Tools

All of the apps for use by clinicians and patients, as well as any information available via the ECHO platform, will be available publically at no cost. Investment is required to establish the platform and for integration of the technology required for use by clinicians.

Figure 1.4 – Outline Project Plan

Project Component	Phase 1 Proof of Concept	Phase 2 Expansion	Phase 3 Embed as BAU
Education and Upskilling	<ul style="list-style-type: none"> • Standardisation of existing education and upskilling programmes across BCA localities • Creation of content and launch of ECHO platform • Evaluate use of ECHO (clinicians) 	<ul style="list-style-type: none"> • Further promotion and content development within ECHO platform including patient-facing material • Evaluate use of ECHO (patients) 	<ul style="list-style-type: none"> • Establish ECHO platform SOPs and maintenance programme • Ongoing evaluation of ECHO including level of behavioural change (Moore's model) • Spread of learning and innovation
AF Screening	<ul style="list-style-type: none"> • Pilot Kardia™ Mobile technology in up to 10 GP practices • Evaluate use of mobile ECG and impact on outpatient appointments 	<ul style="list-style-type: none"> • Rollout of Kardia™ Mobile in all local GP practices • Review evidence-based for use of opportunistic community screening events • Evaluate screening programme 	<ul style="list-style-type: none"> • Embed screening programme within Integrated AF pathway • Spread of learning and innovation • Risk stratification technology to support targeted identification of potential AF patients
Integrated AF Care	<ul style="list-style-type: none"> • AF nurse recruitment and training • Implement nurse-led follow-up care in acute settings • Implement clinician-facing CATCH ME app across primary and secondary care • Beta testing of clinician and patient-facing CATCH ME apps • Evaluation of nurse-led follow-up care 	<ul style="list-style-type: none"> • Implement nurse-led community care • Involve other specialities (stroke medicine, haem/ anticoagulation) • Link to sub-specialties (AF ablation and cardiac surgery) • Roll out of CATCH ME patient-facing app • Evaluation of uptake within patient population • Evaluation of nurse-led community care • Testing of governance and ethical implications for CATCH ME app interfaces with NHS clinical IT systems 	<ul style="list-style-type: none"> • Agreement of sustained funding source for AF specialist nurses (following proof of concept) • Fully integrated CATCH ME tools and hospital IT i.e. patient data input-clinical review-hospital systems • Ongoing evaluation of outcomes and spread of innovation

Communication and Engagement Strategy

The project will utilise established communication channels and networks wherever possible. A detailed communications and engagement strategy will be developed by the Project Steering Group as part of the mobilisation phase (see Deliverables Schedule, Fig. 1.5).

We will involve colleagues from the BCA Trusts' Communications and Engagement teams, who will specifically support the creation of content design for the ECHO component as well as to design and distribute educational and promotional materials for all aspects of the project.

The population of patients with AF is predominantly aged 65 years and over. It is acknowledged that many of these will not have smart phones and so will require access to alternative methods of using the AF data (e.g. booklets, DVDs, etc.). In our multi-ethnic community, appropriate education materials in non-English versions will also be facilitated.

We will use surveys with Trusts, GPs and patients along with qualitative interviews with key stakeholders to determine whether the target audiences have been fully engaged in the project.

Originality

This project has been developed through discussions with AF experts across the BCA acute Trusts and with local CCGs.

There is ongoing engagement and collaboration with local CCGs in respect of GP upskilling and patient pathways. The AF screening component will also build on learning from previous implementation of this technology within Stoke and North Staffordshire CCGs.

The integrated care component is based on the Dutch model and we are not aware of other ongoing projects. This element will utilise existing and newly developed innovative technologies. For example, the CATCH ME clinician-facing app is already in use by approximately 65,000 users across Europe. This project builds on the existing work in the sense that it incorporates a structured approach to implementation within an integrated pathway and includes evaluation of its use within the clinical setting.

Evaluation Design

It is our intention to fully define the evaluation metrics and Key Performance Indicators (KPIs) as part of the mobilisation phase of the project. We will work with the WMAHSN to fully evaluate the project and to ensure that the learning is disseminated through all relevant networks.

In respect of clinical outcomes, the following metrics will be used (before and after measurements), which incorporate those already in use by SSNAP, NICE and the GP QOF:

- Proportion of known AF patients;
- proportion of eligible patients anticoagulated (and what OAC is used - VKA or NOAC);
- number of AF patients seen in primary and secondary care;
- The level of shared care;
- AF-related stroke rates;
- hospitalisations related to AF;
- CV death/ACM in AF patients;
- cost-effectiveness in terms of hospital attendances at outpatient clinics;
- Cost-effectiveness to be estimated based on outcome and resource use.
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In respect of engagement and participation in the project, the following metrics will be used:

- Availability of integrated AF care in the three BCA Trusts (DGFT, SWBH, WHC);
- Knowledge about the service within catchment area (e.g. surveys);
- Number of patients managed by the integrated AF service (audit);
- Use of IT tools in the Trust;
- Questionnaires with key stakeholders (patients, nurses, GPs, CCG etc.) about 'new' service and patient/ stakeholder satisfaction;
- Behavioural change following education and upskilling as per Moore's model of outcomes assessment

There are also specific aspects of the project that will be evaluation to support the CATCH ME consortium:

- Use of the clinician-facing app in clinical settings (clinician feedback);
- Uptake of the patient-facing app within the patient population (by age and ethnicity);
- Stakeholder review and feedback in respect of both the information governance and ethical implications of the CATCH ME apps interface with hospital clinical systems.

Detailed Work Plan and Deliverables Schedule

The project will last 12 months from January 2017, during which time it is anticipated that Phase 1 will be fully completed. From September to December 2016, further mobilisation of the project will be undertaken by the existing project team to ensure implementation of the nurse-led service can occur in January 2017. Figure 1.5 provides an illustration of the indicative deliverables schedule, including some elements of Phase 2 and 3, where relevant (note that detailed project planning will be undertake during the mobilisation phase).

Figure 1.5 – Indicative Deliverables Schedule

Deliverable	Calendar Months: September 2016 to December 2017														
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mobilisation Phase															
Establishment of Steering Group															
Detailed project planning (phase 1)															
Evaluation metrics (baseline assessment and agreement of target benefits/ KPIs)															
Identification of role holders (C&E, analytics, IT technical support)															
Identification of pilot GP sites (AF screening)															
Confirmation of budget e.g. breakdown of ECHO component															
Detailed C&E Plan															
AF Nurse recruitment and training															
ECHO Train the Trainer															
Beta testing of clinician and patient facing CATCH ME apps															
Phase 1: Education & Upskilling															
Creation of ECHO content															

Deliverable	Calendar Months: September 2016 to December 2017														
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ECHO: launch, roadshow with participating GP practices and other NHS outlets in our catchment area															
Access ECHO content by local clinicians															
Evaluation of ECHO (clinicians)															
Phase 1: AF Screening															
Consultation on GP user guide for mobile ECG															
Training of GP staff on Kardia™ Mobile devices															
Pilot phase (including audit)															
Evaluation of pilot															
Phase 1: Integrated AF Care															
Training on CATCH ME clinician facing app (acute settings)															
Integrated AF clinics at SWBH, DGFT and WHC outpatient clinics															
Evaluation of CATCH ME app in clinical settings															
Development of integrated and standardised primary-secondary AF pathways															

Deliverable	Calendar Months: September 2016 to December 2017														
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Evaluation of nurse-led clinics															
Phase 2: Education & Upskilling Further promotion of ECHO and content development including patient-facing material															
Phase 2: AF Screening Decision point/ consultation re rollout of Kardia™ Mobile, review evidence base for opportunistic screening, decision point re community screening events															
Phase 2: Integrated AF Care Start of integrated AF clinics in participating GP practices, involvement of other specialties and sub-specialties, implement patient facing app (and evaluate), interface with hospital clinical systems (IG and ethical implications)															
Phase 3: Education & Upskilling Establishment of SOPs and maintenance programme, ongoing evaluation, and spread of learning															

Deliverable	Calendar Months: September 2016 to December 2017														
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Phase 3: AF Screening Embed BCA-wide screening programme including population risk stratification, and spread of learning															

It is not expected that phase 3 of the 'Integrated AF Care' component will be implemented until early 2018.

Chapter 2: References

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