Joint Working

Executive Summary

Project title	Future Innovations in Novel Detection of Atrial Fibrillation (FIND-AF): A clinical implementation project
Project partners	Daiichi Sankyo UK Ltd Leeds Teaching Hospitals NHS Trust, Cardio-respiratory CSU
Start - Finish date	July 2022 – December 2023
Project support	Daiichi Sankyo UK Ltd financial contribution £56,950 Indirect contribution Leeds Teaching Hospitals NHS Trust, Cardio-respiratory CSU £55,999.84

This summary has been written by Daiichi Sankyo with consultation and approval from the Joint Working Group.

Project summary

At present there is no national recommendation for screening in the United Kingdom (UK) and it is not in NICE guidelines to opportunistically screen for AF in the absence of symptoms[1]. However the STROKESTOP study has shown that screening for AF in people of 75 and 76 years of age increases detection of AF, prescription of oral anticoagulation, and improves rates of a composite outcome of ischaemic or haemorrhagic stroke, systemic embolism, hospitalisation for bleeding and all-cause death.[2]
Nonetheless the yield of new AF diagnoses was low in this study and the benefit was not available to individuals younger and older than 75 or 76 years.

The aim of this project is to improve the detection rates of atrial fibrillation in the general population of ≥30 years of age.

The FIND-AF team have developed an AI algorithm using Clinical Practice Research Datalink (CPRD)-GOLD, a dataset of routinely collected primary care EHRs which is extremely large, with twenty years of follow-up, and representative of the UK (United Kingdom) population in terms of age, sex and ethnicity.[3] The algorithm comprises 87 variables including age, sex, comorbidities, and ethnicity. It includes all the components of CHA_2DS_2-VASc plus many more variables. The eligible population will be individuals aged ≥30 years without a preceding diagnosis of AF. The algorithm will be implemented through SystmOne and GP practices will be able to run the algorithm through SystmOne in their patient capita. This will create a list of people identified as higher risk of AF who will then be invited for remote targeted screening for AF with a handheld rhythm monitoring device (Zenicor-ECG). The implementation of an algorithm will define who is

potentially at higher risk of AF, allowing the targeted application of AF detection devices and therefore a higher yield of new AF diagnoses.

Initially the algorithm and targeted screening will be implemented in two general practice sites in two PCN's, Affinity Care Primary Care Network and GP Health Care First and then rolled out progressively on a local level. Upscaling to a regional then national scale will be proposed if initial implementation is successful.

Expected benefits to patients the NHS & Daiichi-Sankyo

Expected benefits for the Patient:

- Age is a powerful indicator of Stroke risk, and most population cohorts show that the risk rises from the age 65 years and upwards.[4] People with an elevated CHA_2DS_2-VASc are potentially eligible for oral anticoagulation for stroke prophylaxis in the context of AF. Thus improving detection of AF should improve prescription of oral anticoagulation.
- Amongst people who underwent screening in the STROKESTOP study, the hazard ratio for ischaemic stroke was 0.76 (24% reduction) compared to control.[5] Therefore we would hope that diagnosis and treatment of screen-detected AF in this joint working partnership would lead to a reduction in the individual-level risk for ischaemic stroke.

Expected benefits for NHS:

- Increasing the detection of undiagnosed AF is one of the three main cardiovascular objectives in the NHS long-term plan.[6] By improving detection of AF and prescription of guideline-directed oral anticoagulation we believe this will reduce the risk of future adverse events which will be beneficial both for secondary care services (such as Leeds Teaching Hospitals NHS Trust) and primary care services (such as the Affinity Care PCN).
- The STROKESTOP study above shows that screening for AF can improve outcomes for patients.[7] The use of an algorithm on a national scale in primary care records (which covers 98% of the UK population)[3] can target screening for AF to make it more efficient, effective and cost-effective. We estimate that a successful AF screening programme could prevent about 10% of strokes ~ 15,000 per year, which would save the NHS £35 million per year.[8]

Expected benefits for Daiichi Sankyo UK (DSUK):

- This project aligns with Daiichi Sankyo UK interests in the use of advanced analytics in the detection of atrial fibrillation.

- A population defined as high risk for the development of AF would then be suitable for screening with a wearable AF detection device, which is another active area of interest for the DSUK.

- This projects showcases a collaborative partnership with NHS and the harmonized innovation for desirable outcome measures including journal publication and associated publicity. There is little doubt that it will likely result in future collaborations and subsequently raise the profile of Daiichi Sankyo.

- It is anticipated as part of the project that more patients may be treated with a pharmaceutical product. This may include but is not exclusive to products manufactured by Daiichi Sankyo UK Ltd.

References

1. United Kingdom National Screening Committee. The UK NSC recommendation on Atrial Fibrillation screening in adults. 2014. https://view-health-screening-recommendations.service.gov.uk/atrial-fibrillation/ (accessed March 2022).
2. Svennberg E, Friberg L, Frykman V, Al-Khalili F, Engdahl J, Rosenqvist MJTL. Clinical outcomes in systematic screening for atrial fibrillation (STROKESTOP): a multicentre, parallel group, unmasked, randomised controlled trial. 2021.
3. Herrett E, Gallagher AM, Bhaskaran K, et al. Data resource profile: clinical practice research datalink (CPRD). 2015; 44(3): 827-36.Svennberg E, Engdahl J, Al-Khalili F, Friberg L, Frykman V, Rosenqvist M. Mass screening for untreated atrial fibrillation: the STROKESTOP study. Circulation 2015; 131(25): 2176-84.
4. ESC Guidelines for the diagnosis and management of atrial fibrillation developed in collaboration with the European Association for Cardio-Thoracic Surgery (EACTS) https://www.escardio.org/static-file/Escardio/Guidelines/Documents/ehaa612.pdf
5. Svennberg et al, 2022, Screening for atrial fibrillation: less is more? European Heart Journal Open (2021) 00, 1–3
6. NHS. NHS Long Term Plan - Chapter 3: Further progress on care quality and outcomes - Better care for major health conditions - Cardiovascular disease. 2019.
7. Svennberg E, Engdahl J, Al-Khalili F, Friberg L, Frykman V, Rosenqvist MJC. Mass screening for untreated atrial fibrillation: the STROKESTOP study. 2015; 131(25): 2176-84.
8. An RCT to determine if screening for atrial fibrillation reduces stroke and mortality: SAFER trial - Screening for Atrial Fibrillation with ECG to Reduce stroke. Royal College of General Practitioners; 2020 2020. – poster is added as pdf SAFER_DS – and referenced extract is bottom right corner