Optimising the Anticoagulation Pathway in Newcastle

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Background and Context

- A 12 month project to optimise the Atrial Fibrillation anticoagulation pathway in Newcastle
- Two areas of innovation: warfarin sensitivity testing prior to choice of anticoagulant and introduction of INR self-monitoring for patients choosing warfarin
- Evaluate and disseminate lessons learnt

An estimated 2 people from each GP practice in the UK will suffer an AF related stroke per year

2. BMA General Practitioners - briefing paper 2010.
Project rationale

• Around 3% of the population with north European ancestry carry three genetic variants which make them exquisitely sensitive to warfarin

• Self-monitoring has been shown to increase TTR and been statistically significantly associated with fewer adverse events

By adopting both of these innovations, Newcastle will adopt a "multiple win" approach for both newly diagnosed and existing AF patients
Our Partners

- **Newcastle Gateshead CCG** who commission INR services, and are committed to improving the quality and experience of services for people living in the Newcastle area;

- **Newcastle upon Tyne Hospitals NHS Foundation Trust** whose teams have the sole responsibility for deploying and managing the anticoagulation programme for the population of the city through hospital based and outreach facilities;

- **County Durham & Darlington Foundation Trust** who have successfully delivered self-testing to 300 patients, and over a 24 month period have observed an increase in average TTR from 60% to above 75%;

- **The Institute of Health & Society, Newcastle University** who have extensive experience in health economic evaluation and health technology assessment;

- **The Institute of Genetic Medicine, Newcastle University** who bring expertise in genotype guided anticoagulation policy; and

- **Four commercial partners**: Inhealthcare Ltd, NewGene Ltd, LGC Ltd, and QuantuMDx Ltd.
What is now…

• AF prevalence and its associated service pressures are increasing due to growing proportion of over 65s in the population and undiagnosed AF.
• The AHSN NENC is currently delivering a comprehensive AF programme to drive up rates of AF detection and increase GPs awareness of symptomatic control and appropriate referral
• Anticoagulation choice; but DOACs cost a lot more.
• In February 2016 27,002 anticoagulation based prescriptions were issued in the Newcastle area. 64% of prescriptions were for warfarin costing £25,945; 36% were for DOACs costing £358,858. Even factoring costs of warfarin monitoring, DOACs are 4x more expensive.
• Clinicians use a wide variety of tools, dosing regimes and stratification to either DOACs or warfarin. Unclear why...
• Despite evidence that self-monitoring is cost effective, brings patient benefits and higher TTR, this is not widely available in England.
Steps in the optimised pathway

• Patients requiring anticoagulation will be offered warfarin sensitivity testing prior anticoagulant choice.
• Warfarin sensitivity and shared decision-making reviewing clinical and lifestyle factors, will inform anticoagulation choice.
• Patients with 3 warfarin sensitivity variants and no other contraindications, will be advised they may be best suited to a direct oral anticoagulant (DOAC).
• Patients currently attending Newcastle warfarin clinics who are demonstrating unstable INR will be offered warfarin sensitivity testing. Highly sensitive/sensitive patients will referred back to their GP for an anticoagulation review.
• Patients with stable INR whose lifestyles make clinic attendance problematic will be offered self-monitoring.
What do we hope to achieve?

• **OBSERVE:** Work alongside key stakeholders to evaluate barriers to pathway redesign in a high performing Foundation Trust.

• **EDUCATE:** Deliver online and face-to-face information and training sessions for clinic staff, biomedical scientists, GPs and hospital clinicians to secure the adoption of the new pathway.

• **STRATIFY:** Offer an estimated 650 anticoagulation naive patients either warfarin or DOAC treatment following sensitivity testing and shared decision-making.

• **EMPOWER:** Offer warfarin patients self-monitoring using telehealth to connect to INR clinic dosing programmes.

• **EVALUATE:** Prospectively map patient journeys through the new anticoagulation pathway as it is operationalised, capturing resource use and patient outcomes.

• **PREDICT:** Configure publicly available health and prescription data into an open source model that forecasts cost and benefits of implementing an optimised anticoagulation pathway in the wider NHS.

• **DISSEMINATE:** Share training and education materials with other trusts/CCGs and organisations in England. Newcastle will be a vanguard for widespread uptake of the pathway across the NHS.
Benefits

• **Patients benefits include**: shared decision-making and transparency in the choice of anticoagulation therapy, personalisation and medicine optimisation, reduced burden of attending clinic appointments, increased TTR and lower associated risk of stroke and potentially fewer treatment related adverse events.

• **Clinician benefits include**: able to provide an enhanced anticoagulation, delivering higher TTRs, creating clinic capacity for new referrals and ability to spend more time with complex patients.

• **Health Economy benefits include**: commissioners able to demonstrate improvements in clinical effectiveness, good INR control, reduced stroke risk, more efficient use of public money/resources, and increased take up of telehealth.

    **All of these benefits could be replicated in other areas across England**
Expected change

The project is expected to deliver change to three key metrics:

- Increase by 10% the percentage of patients who have an INR within 0.5 of target of 2.5
- Decrease by 20% the percentage of patients with INR above 6
- For the new cohort of patients starting anticoagulation therapy in 2016/17 bring prescribing trends more in line with the England average
Timescale

Project Timescale Jan 2017 – September 2018

• Stage 1  Initiation
• Stage 2  Project delivery
• Stage 3  Evaluation & Dissemination

Each AF related stroke costs the NHS £11,900 in the first year alone
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