

Delivering specialised expertise in anticoagulation initiation in the primary care setting; harnessing the skills of specialist pharmacists in the prevention of AF related stroke.

Final project report

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1. Structured abstract

1.1. Purpose

The aim of the project was to pilot and evaluate a novel method of service delivery for initiation of oral anticoagulation therapy in patients with atrial fibrillation (AF) using specialist anticoagulation pharmacists in the general practice setting.

1.2. Scope

In the UK the initiation of oral anticoagulation therapy is predominantly carried out by a GP. GP confidence in prescribing DOACs is variable and this piece of work aimed to evaluate how specialist pharmacists could support GPs.

1.3. Methods

Specialist anticoagulation pharmacists provided clinical sessions in 12 GP practices. The pharmacists took referrals from GPs but also reviewed the AF registers to identify patients who required review.

1.4. Results

Over 1000 patients received a desk-top review – e.g. a review by a specialist pharmacist to ensure their anticoagulation was optimised.

465 patients received a consultation by a specialist anticoagulation pharmacist. The average age of patients reviewed was 79 and the average CHA₂DS₂VASc score was 4.

- 176 patients were anticoagulation naïve at the time of consultation with 112 (64%) of these patients being initiated on anticoagulation
- 262 patients were on warfarin with poor TTR at the time of consultation, with 140 (53%) of these being transitioned onto a DOAC
- 178 patients on a DOAC were reviewed in order to check dosing was correct. 29 DOAC doses were found to be incorrect or contraindicated (19 too low a dose, 6 too high a dose, 4 contraindicated) and these were corrected.
- We estimate that up to 13 strokes per annum have been prevented as a result of the programme and that a further 10 patients have been protected from medication-related harm as a result of prescribing errors.

2. Purpose

Providing anticoagulation therapy to patients with AF is a role that has traditionally sat in General Practice. The introduction of 4 direct oral anticoagulants (DOAC) to the market, each with specific contraindications, side effects and dosing regimens has markedly

increased the complexity of this area of pharmacology placing a significant burden on the GP to communicate complex information on the risks and benefits of anticoagulation and each drug to patients within a traditional 10-minute appointment slot.

Oxford AHSN has developed a novel model of service delivery in order to improve the confidence and expertise in initiating anticoagulation and also the capacity for primary care to deliver high quality consultations with counselling around risks and benefits.

This novel model harnessed the specific expertise of specialist anticoagulation pharmacists to counsel patients, assess bleeding and stroke risk and use shared decision making techniques to decide on appropriate anticoagulation. The specialist pharmacists prescribed the first month's anticoagulation after which patients were managed through usual GP monitoring. Patients prescribed a DOAC were offered a follow-up appointment to discuss side effects. It was felt that this system based change project would establish a model that could be rapidly spread across the NHS.

3. Scope

3.1. Background

In UK the burden of anticoagulation initiation largely sits with General Practitioners. GPs have varying levels of expertise in prescribing DOACs and do not always have sufficient time to have a high quality discussion about the risks and benefits of anticoagulation with patients.

The overall aim of the project was to increase the number of patients with known AF who are prescribed appropriate oral anticoagulation therapy. The project aimed to do this through:

- Taking the burden of “decision to anticoagulate” away from the rushed setting of the GP consultation and into an environment where there is sufficient time for a structured conversation and shared decision making with the patient.
- Providing a secondary care level of expertise in a GP practice setting.
- Ensuring consistency in prescribing and adherence to NICE guidelines.

3.2. Context

The project was delivered in 12 practices across 2 CCG areas. The practices ranged in list size from 7,600 to 26,700 patients.

Phase	Practice	List size	AF register	CCG
Phase 1	Practice 1	16,615	278	Berkshire West
	Practice 2	9,584	108	Berkshire West

	Practice 3	14,358	231	Berkshire West
	Practice 4	11,855	165	Berkshire West
	Practice 5	21,375	360	Berkshire West
	Practice 6	19,656	340	East Berkshire
	Practice 7	18,558	395	East Berkshire
	Practice 8	13,296	149	East Berkshire
Phase 2	Practice 9	11,677	203	Berkshire West
	Practice 10	26,721	319	Berkshire West
	Practice 11	7,678	190	East Berkshire
	Practice 12	10,286	79	East Berkshire

Due to staffing constraints, the project was delivered in two phases with 8 practices participating in phase 1 and a further 4 in phase 2.

4. Methods

4.1. Study design

The service was led by a consultant pharmacist and delivered by specialist anticoagulation pharmacists. GPs were invited to refer:

- Treatment naïve patients
- Patients who should be considered transition from Warfarin to NOAC due to poor TTR
- Patients who should be considered for an alternative anticoagulant due to unacceptable side effects, new or resolved contraindications
- Patients who have previously declined treatment but are now willing to discuss treatment

As well as accepting referrals from GPs, the pharmacists also carried out case finding. In each practice they interrogated the clinical systems to identify patients who were treatment naïve and those who were poorly controlled on warfarin. Additionally, one practice asked the pharmacists to carry out an in-depth review of their DOAC patients.

Patients referred into the service were given a 30-minute structured consultation including information about stroke risk and bleeding risks. Shared decision making techniques were used to ensure that patients are offered the most appropriate anticoagulant for their clinical condition and preference. All Specialist Pharmacists employed within the service were non-medical prescribers and were issued the first-month prescription. Communication was sent to the GP detailing the drug that was been prescribed and what is required in terms of ongoing monitoring – e.g. blood tests.

Patients initiated on warfarin were referred to their usual anticoagulation clinic for on-going monitoring. Patients initiated on DOAC received a telephone follow-up after 2-3 weeks where any side-effects, anxieties or concerns were discussed.

At the start of the service in each practice, the specialist anticoagulation pharmacists provided a short introductory educational session to explain the purpose and context of the service and how GPs could engage with them. GPs and practice based pharmacists were invited to be involved in the review process. A further session was provided at the end of the process to share the findings, discuss interesting case studies and share learning points with the practice.

4.2. Data sources/collection

QoF data was used to track anticoagulation rates in high risk patients. This is published once per annum.

Local audit data was also collected by the pharmacists. This included:

- patient age
- patient CHA₂DS₂VASc score
- treatment pre-consultation (if any)
- TTR if on warfarin
- dose if on DOAC
- treatment post-consultation
- contraindications or comments

5. Results

5.1. Principal findings

Over 1000 patients received a desk-top review – e.g. a review by a specialist pharmacist to ensure their anticoagulation was optimised.

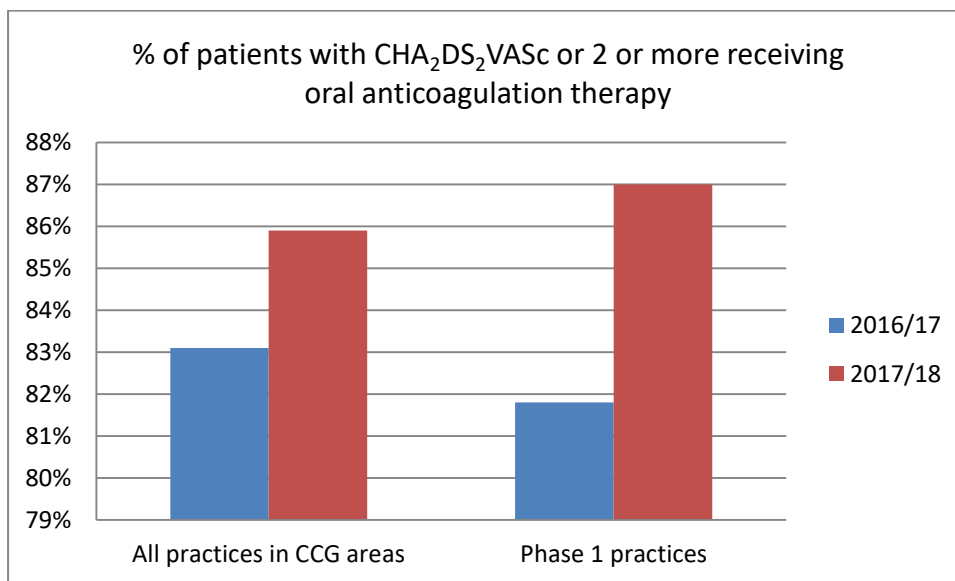
465 patients received a consultation by a specialist anticoagulation pharmacist. The average age of patients reviewed was 79 and the average CHA₂DS₂VASc score was 4.

- 176 patients were anticoagulation naïve at the time of review with **112** (64%) of these patients being initiated on anticoagulation
- 262 patients on warfarin were reviewed with **140** (53%) of these being transitioned onto a DOAC. The remaining warfarin patients were counselled on adherence.
- 178 patients on a DOAC were reviewed in order to check dosing was correct. **29** DOAC doses were found to be incorrect or contraindicated (19 too low a dose, 6 too high a dose, 4 contraindicated)

We were able to compare the improvement in QoF (Quality outcomes framework) data for the 8 practices included in phase 1 with the overall improvement for the two CCG areas.

Between the 2016/17 and 2017/18 QoF data extractions we found that:

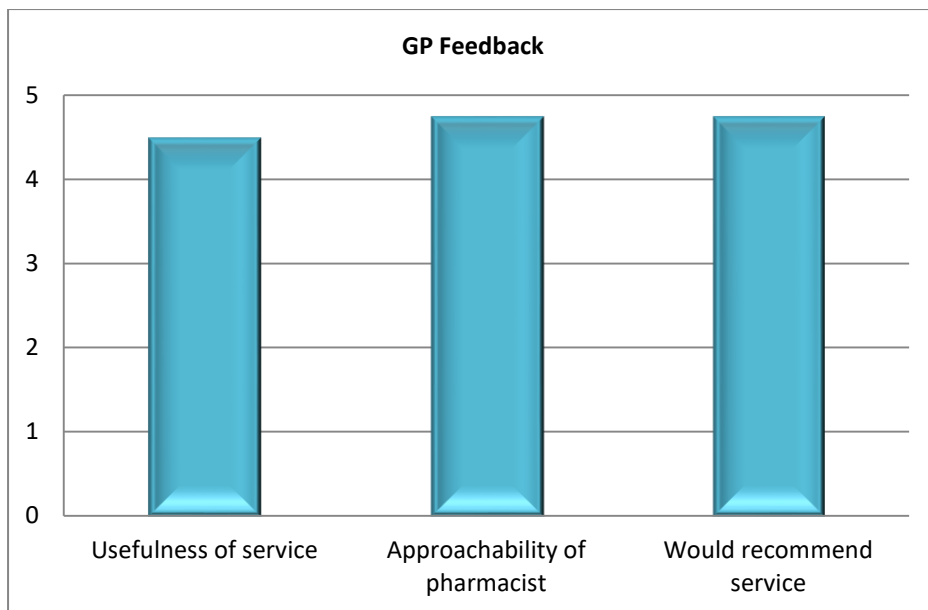
- Overall, across the two CCGs the percentage of high risk AF patients receiving an oral anticoagulant increased by 2.8 percentage points (83.1% to 85.9%).
- Across the practices involved in phase 1 of the project the percentage of high risk AF patients receiving an oral anticoagulant increased by 5.2 percentage points (81.8% to 87%)



- Interestingly there was also a higher increase in AF prevalence in the participating practices (0.11 percentage points) compared to CCG average (0.09 percentage points). Whilst the project did not focus on AF detection there was an increased awareness of AF and its relation to stroke in participating practices and this may well have had an impact on detection rates.

Feedback from GPs was extremely positive. GPs valued the input that the pharmacists made to the practice and also the learning that they were able to share. Comments included:

- much more informed on which DOAC to choose, side effects and how to manage”
- “starting to relax on using DOAC if appropriate”
- “Fab service”



5.2. Outcomes

112 treatment naïve patients were initiated on an anticoagulant and 140 patients with TTR<65% or labile INR were transitioned from warfarin onto a DOAC. This equates to 252 patients being initiated or optimised on anticoagulation. Based on an 8% average risk of stroke per annum¹ and effective oral anticoagulation therapy reducing the risk of stroke by two thirds we estimate that this has the potential to reduce the risk of stroke by 13 strokes per annum.

A further 29 patients had their DOAC dose adjusted – reducing the risk of medication related harm in those who were prescribed too high a dose, and reducing risk of stroke in those who were prescribed too low a dose.

Patients on warfarin with poor TTR who were not transitioned to a DOAC were counselled extensively on the importance of adherence to their treatment regimen. This will also have had an impact on stroke reduction though this has not been quantified.

5.3. Discussion

This project has demonstrated that specialist anticoagulation pharmacists can add value in the primary care setting. During the project, 465 patients received a review from a pharmacist with 252 of these being initiated on an anticoagulant or transitioned from warfarin to DOAC. This has the potential to prevent 13 strokes per annum in this patient group.

An in-depth review of DOAC dosing at one practice revealed that 29 out of 178 (16%) DOAC patients were prescribed the wrong dose – with implications both in terms of stroke prevention and also medication related harm. It was also noted that in many cases DOAC patients were not receiving regular reviews of their renal function.

All practices involved in the project gave positive feedback with GPs and practice pharmacists appreciating the support and education offered. QoF data was compared between 2016/17 and 2017/18 and practices that were involved in phase 1 of the project showed a greater improvement in anticoagulation rate than other practices across the two CCGs. It has not been possible to compare practices in phase 2 until QoF data for 2018/19 is published.

The model is being taken forward by one of the CCGs involved in the project and will be rolled out across all practices in 2019/20.

5.4. Conclusions

This project has demonstrated a clear role for specialist anticoagulation pharmacists to support staff in general practice to improve the rate and quality of oral anticoagulation therapy.

The scalability of this service is limited by a reliance on a relatively small number of specialist anticoagulation pharmacists. However there are clear elements that can be built on and scaled nationally across the UK.

A pragmatic recommendation would be:

- Practice-based pharmacists are supported and educated to undertake reviews of patients who have an indication for, or who are already prescribed anticoagulation therapy.
- Specialist anticoagulation pharmacists are commissioned to provide specialist support to networks of general practices through a hub and spoke service.

6. References

¹ Olsen JB et al. Validation of risk stratification schemes for predicting stroke and thromboembolism in patients with atrial fibrillation: a nationwide cohort study, *BMJ* 2011;342:d124