

**NHS England - TECS CASE STUDY 001: Health Call International Normalisation Ratio (INR) Monitoring, Patient Self-Testing for patients on warfarin**

**Location and commissioners: County Durham and Darlington FT**

**Provider: Inhealthcare using Roche CoaguChek XS**

**Ambition level: 1**

**Background**

As part of their treatment, warfarin patients, comprising all health conditions that arise from the thickening of the blood, such as: strokes, heart attacks, deep vein thrombosis and pulmonary embolism - need to attend clinic for blood tests regularly on average 14 times per year. This service allows patients to test at home instead of attending clinic – while being closely monitored by their clinician.

**How does it work?**

Patients who are assessed appropriate for the service are given a self-testing device and training on how to use it and access the service. On their next scheduled INR test date, they self-test at home. They receive a pre-agreed telephone call, which asks them about their readings and current warfarin dose. They are also asked safety questions about bleeding, medication changes and missed doses. Any adverse answers trigger a clinical alert to the clinic.

Their data is sent securely to the clinic and assessed by a clinician and a dosage calculated. The patient then receives another automated call with their new warfarin dose and a date for their next INR test.

**What was achieved?**

County Durham and Darlington FT provide warfarin services across County Durham:

- 200 patients were referred from 2,648 registered warfarin patients

Self-testing is (at worst) cost neutral when all costs included, and in most circumstances significantly cheaper

	Outpatient	Satellite	Self-Testing	Home Care	NOAC
<b>Clinic</b>					
Staff	£101.75	£ 137.84	£28.70	£220.18	N/A
Consumables	£50.65	£ 52.65	£40.18	£47.45	N/A
Self-Testing	£ -	£ -	£119.80	£ -	N/A
<b>Variable costs</b>	<b>£152.39</b>	<b>£190.48</b>	<b>£188.68</b>	<b>£333.68</b>	N/A
<b>CCG</b>					
Adverse events	£106.65	£106.65	£54.39	Not estimated	Not estimated
Test consumables prescribing	£ -	£ -	£-		
Anticoagulant prescribing	£18.72	£18.72	£18.72	£18.72	£790
<b>Total NHS Cost</b>	<b>£278</b>	<b>£316</b>	<b>£262</b>	<b>&gt; £352</b>	<b>&gt; £790</b>

Patients also reported:

- Reduced time wasted attending clinics
- Less impact on work disruption and money lost from taking holiday or no pay to attend clinic
- Money saved from travel costs and parking
- Able to test whilst working away from home or on holiday
- Flexible around the needs of the patient

**Operationally:** It increases capacity of existing clinics

Avoids future costs of extra clinics needed to address growing need

Integration with 4S-DAWN reduces clinician time needed per telehealth patient

**Clinically:** It improves clinical outcomes

Self-testing improves time in therapeutic range (TTR) by 20% for 70% of patients

**Financial:** It is cost neutral when all CCG costs are included

Savings from a reduction in adverse events

Avoids large capital spend by using the Roche CoaguChek XS rental scheme

Potential for cash release when targeted at the most expensive patients (i.e. house-bound & satellite clinics)

**Strategic:** It supports Department of Health & NHS England objectives

Improves quality of life for people with long term conditions

Patient satisfaction for INR self-testing is close to 100%