Mobile Anticoagulant TheRApy
Case Study of a Surgery in the NHS

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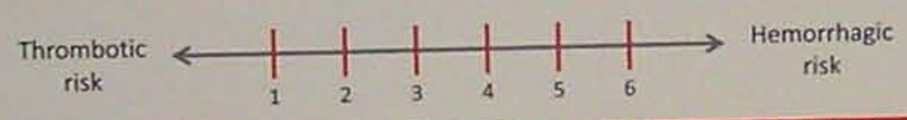
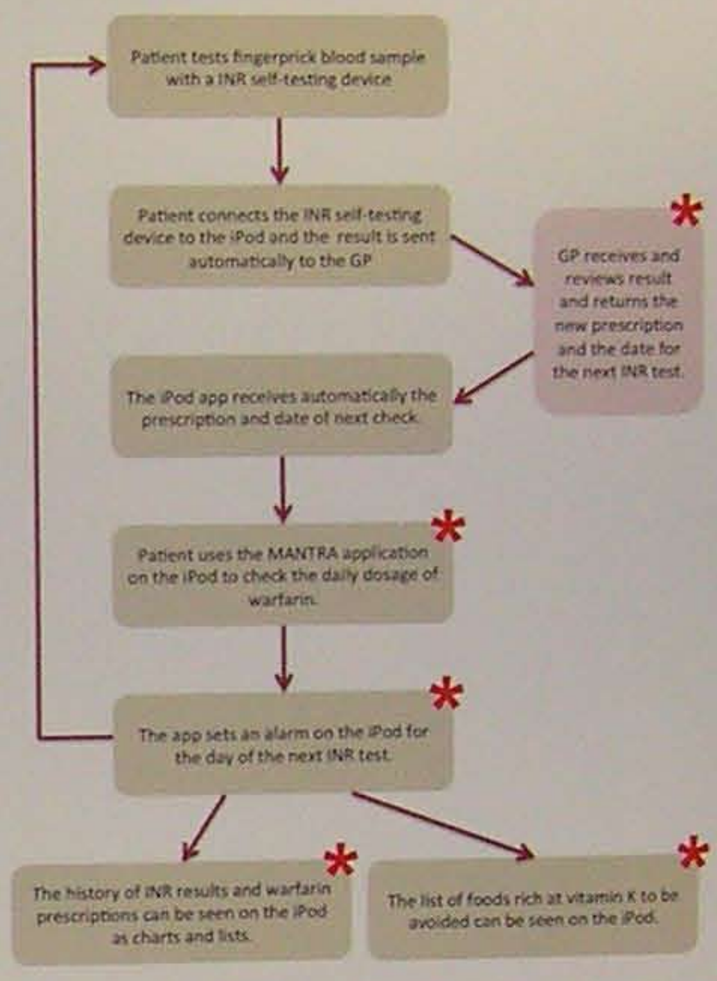
Abstract

The MANTRA Project aims to determine the **feasibility and acceptability of using mobile technology in the management of anticoagulant therapy** (ACT). **The goal is to enable patients to perform an INR test in their home, automatically transmit the result to the doctor and receive the prescribed dose.** This would not only reduce contacts with general practice but improve the quality of life of patients on ACT. The proof of concept study conducted in an NHS general practice surgery **proved that the MANTRA approach is feasible and well received by patients and healthcare practitioners (HCP). MANTRA could also be extended to remotely managing other therapies e.g. in nursing homes.**

Anticoagulant therapy

An estimated 1.4% of the UK population requires **anticoagulation therapy to reduce their risk of thromboembolism**. Warfarin is the most commonly used anticoagulant but requires monitoring to ensure safe blood levels are maintained. **Patients are required to attend the surgery frequently for an International Normalized Ratio (INR) test and prescription of the appropriate anticoagulant dosage.**



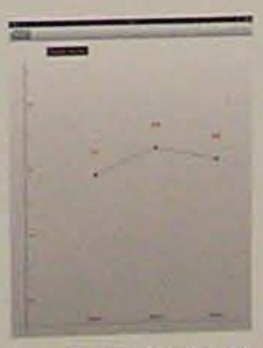


Methods and Evaluation

We designed and evaluated ***two interactive high-fidelity prototypes*** demonstrating the remote management system of ACT - one for healthcare practitioners (HCP) and one for patients at the a GP surgery in Ealing (West London).

We involved 6 HCP: and met them for individual usability tests during which we asked them to perform a task-based evaluation of the prototype. These tests identified aspects that we subsequently improved such as information about the patient, display of drug dose and visualisation of the vitamin K screen. ***The overall satisfaction of the use of the prototype was high.***






We involved 6 patients: in individual meetings where we interviewed them and we asked them to perform a task-based evaluation of the prototype.

The average age of the patients was 65 yrs: 2 did not use a mobile phone; 1 had no experience with touch devices, 3 used iPhones but mostly for calls/diary app.

They all lived close to the surgery but despite this, ***they all would positively consider having a INR self-testing device at home to communicate with the HCP as they felt it would be easier and faster.***

Patients with experience in using touch devices did not have any difficulties in interacting with the application and successfully performed all the tasks. The others needed some advice about how to tap on icons but after this they were able to use the app easily. ***All the patients demonstrated their understanding the entire process of sending the INR test result and receiving the prescription from the doctor.***





Future Research

The HCP discussed the potential of introducing of the MANTRA approach to a new scenario of use that would involve the HCP at the GP surgery and the nurses at the nursing homes: The remote communication among the two sites would reduce the need for personnel from the surgery to visit the nursing homes to collect the INR test results and would make the process easier and faster. **Our immediate goal is to develop the MANTRA approach in a larger scale to benefit more patients.**

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For more information on the MANTRA Project: