

Assessment of Undiagnosed Atrial Fibrillation in the At Risk Population: a qualitative assessment for the Prevention of Stroke.

Atrial fibrillation (AF) is the most common form of abnormal heart rhythm and is a major cause of stroke. An individual suffering from AF is five times more likely to have a stroke. Symptoms of AF can include palpitations, shortness of breath, feeling faint or tiredness. Some individuals experience only mild symptoms whilst others have no symptoms at all. High blood pressure, heart valve disease, cardiomyopathy and thyrotoxicosis are few conditions which are known to cause AF. Certain factors such as alcohol, caffeine and obesity can trigger temporary but reversible AF. It affects around 800,000 people in the UK, mostly aged 55 and over. It has been estimated that AF accounts for 14% of first time stroke (there are around 110,000 each year in the UK)

With the appropriate management, the risk can be reduced significantly. The use of anticoagulant therapy is the most effective treatment of reducing at risk patients with AF. Warfarin is the most commonly used medication and has been reported to reduce the risk of stroke by 68%.

Sources:

www.bhf.org.uk; Scarborough et al (2009) 'Stroke Statistics 2009' BHF and The Stroke Association; Arch Intern Med. 1994 Jul 11;154(13):1449-57. Risk factors for stroke and efficacy of antithrombotic therapy in Atrial fibrillation. Analysis of pooled data from five randomized controlled trials.

Cherrymead Surgery

This surgery has been providing health care to local residents for nearly fifty years. The local demographics indicate that there is an increasing ageing population with significant patients over 65 years of age who have no known diagnosis of Atrial Fibrillation.

The approach

Each autumn the practice informs all qualifying patients of the availability to attend the surgery's 'flu' clinics held on consecutive Saturday mornings in October.

It was proposed to provide an additional service to assess patients for increased risk of stroke at these clinics. The practice approached the CCG commissioning group to fund the addition of a stroke prevention programme to be run concurrently with the 'Flu' clinic.

The configuration and format for assessing these patients was specified and the DOC@HOME digital health system was adapted to accommodate clinic based assessment.

The project was approved mid-September 2012 by the CCG to assess patients in the 'at risk group' for Atrial Fibrillation.

The method and participants

Three assessment stations, each comprising CARE-PORTAL telehealth monitors, blood pressure monitors and SpO2 recorders were set up in the waiting room and a linked consulting room. Patients who attended the surgery for their flu injections were invited to take part in the assessment. 862 patients were assessed over 3 Saturday morning clinics. Each station was attended support personnel alongside three students planning to enter the biomedical sciences. Their role was to interact with the patients and guide them through the process. This allowed the practice clinicians and nurses to concentrate on the 'Flu' vaccination programme.

All personnel were provided with a short training session on the use of each monitor and were familiarized with blood pressure and SpO2 recording methodology.

A register of first name, last name, date of birth and NHS number was fully encrypted and loaded on each of the monitors and a printed version, under the control of Cherrymead practice, was provided at each station for the duration of each clinic.

evidence based telehealth

The patient experience

Each patient was advised about the process and an explanation of the importance of assessment for Atrial fibrillation was given.

The patients' name was loaded onto the monitor using a barcode reader. The monitor screen displayed the patients name and a date of birth and NHS number. The patient was asked to enter / confirm their date of birth. This involved adjusting the field on the screen and confirming the date of birth by pressing a key marked OK. Each patient was then asked to follow the questions and instructions on the screen.

Each monitor was able to confirm a patient's identity, captured the presence of symptomatic data; record a 20 second rhythm strip of lead 1 ECG and blood flow across the aortic arch; and store heart rate and passive respiration rate. A 20 second record of heart rate variability was also recorded. Blood Pressure and SpO2 was also measured and recorded together with the associated Pulse rate.

This was followed by capturing the presence of symptomatic data through simple confirmation responses to four questions That asked patient to confirm whether they had experienced any ...

- **breathlessness**
- **light headiness of dizziness**
- **tightness in the chest**
- **palpitations I**

.... in the last month?

At the end of the assessment the OK button on the monitor was activated and the data stored against the NHS number. The whole sequence lasted between 2-3 minutes per patient.

Data triage

For this pilot system the monitor was connected to a secure server using the NHS N3 network and the data uploaded and stored against the secure Cherrymead Surgery partition on the server.

Each data set was then individually triaged offline and an AF Screening report was generated for all patients

with irregular rhythm and suspected Atrial Fibrillation.

A print out was made of all records that exhibited an irregular rhythm in the form of a standard PDF report that could be stored electronically in the patient notes. All patient records with identified Atrial Fibrillation were updated with the appropriate coding.

Following triage patients identified with potential Atrial Fibrillation were recalled to the surgery for further qualification and if required a 12 lead ECG was obtained. Patients with high blood pressure were also recalled to discuss there blood pressure management.

Results

The purpose of this study was to identify the presence (if any) of Atrial Fibrillation in the undiagnosed at risk population of the 65 and over age group.

As well as identifying patients with Atrial fibrillation, a number of other conditions were identified including:

Monitored Patients	Female	Male	Total
Monitored	446	405	651
Irregular rhythm	54	85	139
% Total	12%	21%	16%
Atrial Fibrillation	12	18	30
% Total	3%	4%	4%

- **Premature Ventricular Contraction (PVC)**
- **Complete heart block**
- **First degree heart block**
- **Ventricular Bigeminy and Trigeminy**
- **Ventricular couplets**
- **Left and Right Bundle Branch Blocks**
- **Atrial ectopic**
- **Premature Atrial Contractions**
- **wolf Parkinson white syndrome**

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