



Healthcare
Improvement
Scotland

SHTG
Advice on health
technologies

KardiaMobile® for detecting atrial fibrillation

Plain language summary | July 2022

What is atrial fibrillation?

Atrial fibrillation is a condition that causes an irregular heart rate and rhythm. When someone has atrial fibrillation, their heart rate can sometimes be very fast and irregular. It is estimated that 2.6% of the Scottish population, which is around 143,000 people, have atrial fibrillation. It is more common in people over 65 years.

People with atrial fibrillation may have symptoms such as breathlessness, heart palpitations, dizziness, tiredness or fainting. Many people with atrial fibrillation have no symptoms.

Some people have intermittent episodes of atrial fibrillation that come and go. Each episode comes on suddenly but will also stop suddenly, with the heartbeat going back to a normal rate and rhythm.

What is KardiaMobile®?

KardiaMobile® is heart rhythm monitoring device. It is the size of a credit card and is used to record the electrical signals generated by the heart as it beats. This type of test is known as an electrocardiogram (ECG). The KardiaMobile® device has two electrodes that you place your fingers on for 30 seconds when you want to record your ECG.

KardiaMobile® can be used to record an ECG anywhere, at any time. It could reduce the number of hospital appointments that someone needs to attend. The device links to an app that is downloaded to a smart phone. The app classifies ECG readings as normal, possible atrial fibrillation, tachycardia (fast heart rate), bradycardia (slow heart rate) or unclassified. The ECG reading can be made available to a healthcare professional as soon as it is taken. A healthcare professional must review the ECG traces before any decisions on treatment are made.

Why is this important?

Atrial fibrillation can increase someone's chances of having a stroke or transient ischaemic attack (sometimes called a mini-stroke). This is because atrial fibrillation can cause blood clots to form in the heart. These blood clots can travel to the brain and cause a stroke. If doctors

diagnose atrial fibrillation, they will normally offer a patient medicine to stop blood clots from forming.

Intermittent episodes of atrial fibrillation are harder for doctors to detect. If a doctor cannot detect atrial fibrillation during an examination, but suspects that a person might have it based on the symptoms they describe, they may offer them an 'ambulatory' heart rhythm monitor. Patients are asked to wear these monitors for a period of time (for example, a week), and continue their lives as normal. KardiaMobile® is an alternative to these other types of monitor, but it is not suitable for everyone. KardiaMobile® would be most useful for people who have symptoms that come and go. The device could then be used by someone to record their heart rhythm whenever they are experiencing symptoms.

The ECG produced by KardiaMobile® does not provide as much detail as an ECG carried out in hospital. KardiaMobile® cannot detect heart attacks. The ECGs produced by KardiaMobile® must be reviewed by a trained healthcare provider.

What we did

An English organisation called the National Institute for Health and Care Excellence (NICE) published guidance on KardiaMobile® in January 2022. We used the work that NICE did to produce recommendations for people in Scotland. We used an internationally-recognised adaptation process to do this.

What we found

The NICE guideline said that KardiaMobile can be used for detecting suspected intermittent atrial fibrillation in people who have symptoms such as palpitations. Following our Adaptation process, we came up with recommendations for NHSScotland that are very similar to the recommendations produced by NICE.

What SHTG considered when developing our recommendation for NHSScotland

We considered whether the NICE guidance was good quality, and whether it was applicable to Scotland. We also considered the tests that are currently available for detecting atrial fibrillation, and the current diagnostic pathways, in Scotland.

We thought about any barriers there may be to implementing the recommendations in Scotland. For example, we recognised that not everybody has access to a smart phone or is comfortable with using one, but this shouldn't prevent KardiaMobile being a possible option for them.

What is our recommendation to NHSScotland?

KardiaMobile can be used for detecting suspected intermittent atrial fibrillation in people who have symptoms such as palpitations. KardiaMobile® does not replace existing technologies, but should be an additional option within the current standard of care in NHSScotland.

This plain language summary is based on the SHTG Adaptation KardiaMobile® for detecting atrial fibrillation