A Detect, Protect, Perfect approach for Atrial Fibrillation in South East London: Standard Operating Procedure (SOP) for the AF detection project

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Health Innovation Network South London

South East London Integrated Care System

Contents

Aims and Objectives

NHS South East London Integrated Care Board (SEL ICB) and the Health Innovation Network (HIN) South London are delivering a programme to support the delivery of a Detect, Protect, Perfect approach for Atrial Fibrillation (AF)

The programme aims to:

- Increase rates of AF detection in South East London (from 72% to 85% by 2029)
- Provide and support the use of hand-held AF detection devices (MyDiagnostick- slide 7) in primary care and community settings
- The target is to have checked for AF in 2,964 patients across SEL by December 2024 (equates to 1 patient per device per week over the first 3 months)
- Support the development of pathways for AF detection, AF diagnosis and management and safe effective anticoagulation to protect patients from stroke (pathways/guidance developed by CESEL and approved by IMOC)
- Improve confidence and competence for health care professionals concerning the detection of AF, management of new AF cases, optimisation of treatment and anticoagulation for patients with AF
- Review of outcomes and shared learning to further improve delivery of AF detection and management within South East London populations and nationally

Provision of 247 hand-held AF detection devices, project management support and evaluation by the HIN and project engagement for PCNs is funded via a non-promotional grant with Daichii-Sankyo and NHS England

Why should we focus on Atrial Fibrillation (AF) detection?

- Common condition- affects about 1.4million people in the UK
- There is a gap between detected prevalence and expected prevalence in AF
- AF is frequently asymptomatic or few symptoms (see slide 23)
- If undetected:
  - Risk of thromboembolic disease e.g. stroke
  - Risk of tachycardia-induced cardiomyopathy
- Pulse checks are a simple and sensitive test for AF (but specificity is low) and may be performed alongside BP checks or vital 5 checks (as examples)
- AF detection devices can be used to identify people with possible AF (detection rates in studies approx. 4 in 100)
- Targeting patients most at risk of AF includes the older population and patients with other medical conditions such as hypertension and long- term conditions
- The AF detection device MyDiagnostick is acceptable, non-invasive and sensitive
- If a possible AF is detected- it is then diagnosed with a 12 lead electrocardiogram (ECG)
- Effective treatment/management is then available to reduce stroke risk and cardiomyopathy

Recommended approaches to detecting AF in SEL populations

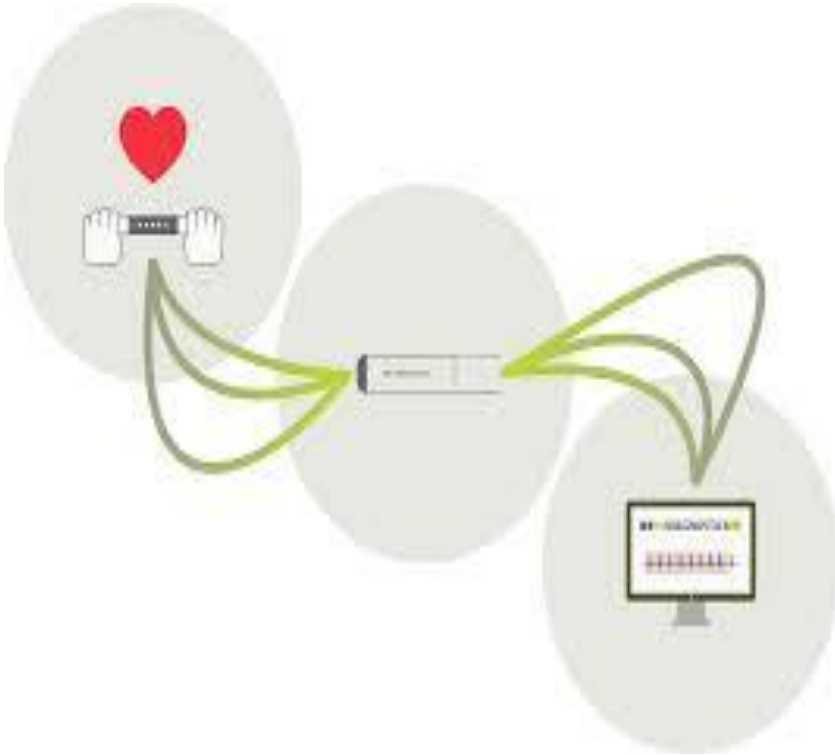
- CESEL AF management guide recommends:

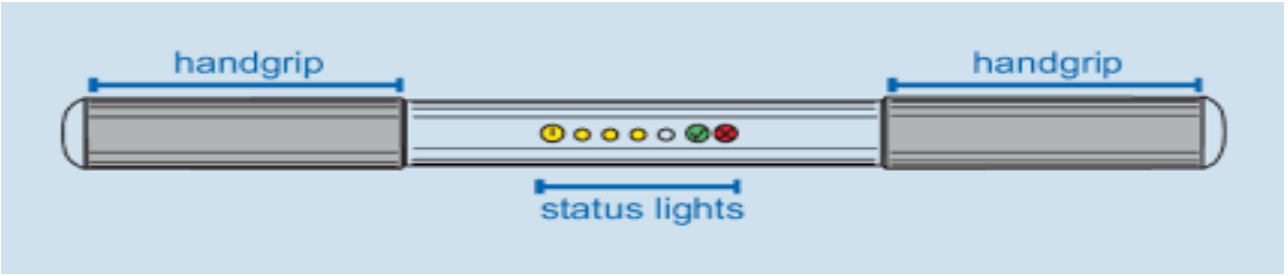
1. Perform opportunistic pulse checks in people aged over 65 who have long term conditions during a routine consultation
    - See NICE CKS and AF diagnosis and management for the main risk factors:
    - age ≥ 65 years, arterial hypertension, ischaemic heart disease, heart failure, valvular heart disease, diabetes
    - intercurrent illness, electrolyte disturbance, thyrotoxicosis and lifestyle including alcohol excess
2. Consider checking for possible AF in patients with symptoms such as:
    - Breathlessness
    - Fatigue
    - Palpitations
    - Chest discomfort
    - Syncope or dizziness
    - Stroke/TIA

Maximising the Success of AF Detection

- Case-finding must effectively detect AF and provide treatment to prevent stroke in a cost-effective fashion
- Case-finding should be undertaken
  - In populations with a high risk of AF (reducing the number needed to test to detect one case)
    - Patients aged ≥65 years (as recommended by the European Society of Cardiology (ESC) Guidelines 2012)
      - Prevalence of AF and stroke risk increase with age, particularly after 65 years
    - Patients aged ≥75 years
      - Prevalence of AF is even higher in patients ≥75 years, therefore testing in this population will detect a greater proportion of new AF cases
  - In a setting where it can be performed accurately and efficiently
    - E.g. community pharmacy or primary care settings to capitalize on existing healthcare infrastructure
  - Preferably combined with other case-finding programmes
    - Combination with other cardiovascular case-finding initiatives (e.g. hypertension, diabetes) can save time, increase patient acceptance and facilitate delivery of synergistic stroke-prevention therapies
- For this AF detection project, it is recommended that within each setting the MyDiagnostick device remains within a designated area and is supervised by a designated lead for AF detection within each practice to reduce the risk of the device being misplaced/not utilised efficiently

MyDiagnostick





About the My Diagnostick: https://www.mydiagnostick.com/about-the-mydiagnostick

Downloading the software

Primary care:

- SEL ICB or Bromley ICT Department will remotely deploy to each workstation.
- Any issues or application missing, please contact your SEL ICB or Bromley Service Desk team
  - SEL ICB ICT Team
    - Email: ICT@selondonics.nhs.uk
    - SEL ICT Tel: 020 8176 5400
    - Self Service Portal: https://nhssel.haloitsm.com/portal/home
  - Bromley GP IT (for all Bromley GP Practices only)
    - IT Service Desk Tel: 0208 315 8702
    - Self-Service Portal: BHC Self-Service Portal - Login (haloservicedesk.com)
    - IT Service Desk Email: BHC.ITHelpdesk@nhs.net

Community, outreach or other sites:

- Please contact hin.cvd@nhs.net who will provide a link which will enable you to install the software.
- You may need to speak with your IT team to do this.
- 'MyDiagnostick Software Installation Manual.pdf' provided for a step-by-step guide to download the software. https://irp.cdn-website.com/295ce316/files/uploaded/MyDiagnostickUserManual.pdf

MyDiagnostick Studio Management Software has had approval from SEL ICB IT

Preparing the device for first use

- **When you first get the device,** make sure the batteries are fully charged
  - Charge the device using the USB cable provided. Connect the device to a USB power source (for example a powered USB port of a computer)
  - The Power LED will blink during battery charging
  - Charging is complete when the Power LED is continuously ON 
  - Fully charge the batteries frequently, depending upon its use

- **Before making the first recording,** use the device with the software to ensure the clock is set correctly
  - Plug the USB cable provided into end of the device and into a computer (on which the software is installed)
  - Open the software

- **Watch the supporting webinars** for more information https://healthinnovationnetwork.com/resources/atrial-fibrillation-detection-devices-resources-2024/

Device and software manuals: https://www.mydiagnostick.com/software-request

LED signals

LED	Explanation
	**Power (yellow)** This LED is ON continuously during ECG recording. If the recording is completed successfully and hands released this LED is turned OFF. If the recording has failed, this LED will BLINK until the device is deactivated. When the device is connected to a computer and the batteries are being charged this LED will BLINK. When the device is connected to a computer and the batteries are fully charged this LED is ON continuously.
	**Progress (4x, yellow)** When recording an ECG these LEDs show the progress of the recording.
	**No AF Detected (green)** ECG recording was completed successfully and AF was not detected.
	**AF Detected (red)** ECG recording was completed successfully and AF was detected.

From: MyDiagnostick 1001R - Device Manual, DSF310003-001 en, Final, Revision 3, page 5

Using the device with a patient

Recording an electrocardiogram (ECG)

1. Ask patient to sit comfortably, relax and, where possible, to rest/support their forearms comfortably on a table
2. Ask patient to grab the MyDiagnostick device handles without squeezing.
3. The device will activate (1 short beep) and start recording. Yellow LEDs show progress.
4. Wait until the MyDiagnostick signals the end of the recording (2 short beeps)
5. The green LED or red LED will indicate the detection result
6. The patient can now let go of/put the device down
7. The device will deactivate when at least 5 seconds have passed since the end of ECG recording

Adapted from MyDiagnostick 1001R - Device Manual, DSF310003-001 en, Final, Revision 3, page 9

Results: Green light

- Green – no AF detected
- ECG recording was completed successfully, and AF was not detected.
- Inform the patient that AF was not detected
- Inform them that the test is normal today, however if they ever have any concerns about symptoms, they should contact the GP surgery
- Ask the patient if they have any questions
- Primary care
  - Use the Ardens template to record that the test has been done and is 'normal'
  - Complete all other fields requested in the template
- Community/outreach or other site:
  - Use the Excel spreadsheet to record a test has been done and the outcome is normal.
  - Complete all other fields requested
- No further action

See 'Talking about AF' document for suggested language and ways to approach these conversations

Results: Red light

- Red – possible AF detected
- ECG recording was completed successfully, and possible AF was detected
- Inform the patients that the device is showing they may have an irregular heartbeat/rhythm which could indicate possible AF
- This needs to be confirmed so you need to refer them for a 12 lead ECG (electrocardiogram) which can further test heart rhythm
- Explain what this will involve (you will send a referral to…, they will receive a letter/call…)
  - An ECG is a test that records the electrical activity of your heart, including the rate and rhythm. It's usually quick and painless
  - If AF is detected it may be treated with medicines to control the heart rate and the healthcare professional will help find the best medication for them
- Ask the patient if they have any questions
- Provide information on what to look out for and what to do whilst awaiting test- symptoms of AF on slide 21
- https://www.bhf.org.uk/informationsupport/conditions/atrial-fibrillation
- *Steps continue on next slide*

Results: Red light contd.

- Primary care
  - Use the Ardens template to record that the test has been done and is 'abnormal'
  - Complete all other fields requested in the template
  - Download the ECG trace from the MyDiagnostick and attach to the patient notes*
  - Follow referral pathway according to local guidelines
  - Refer patient on for further testing, attaching the ECG trace
- Community/outreach or other site:
  - Use the Excel spreadsheet to record a test has been done and the outcome is suggesting possible AF.
  - Complete all other fields requested
  - (where possible) Download the ECG trace from the MyDiagnostick and securely send to patient's GP*
  - Follow referral pathway or signposting according to local service guidelines
- Be sure to inform the patient what the next steps are, what they should expect and if there is anything they need to do

*see slides 18 & 19 for more information about downloading an ECG trace

See 'Talking about AF' document for suggested language and ways to approach these conversations

SNOMED codes

Use of Ardens template will record appropriate SNOMED codes into the patient record.

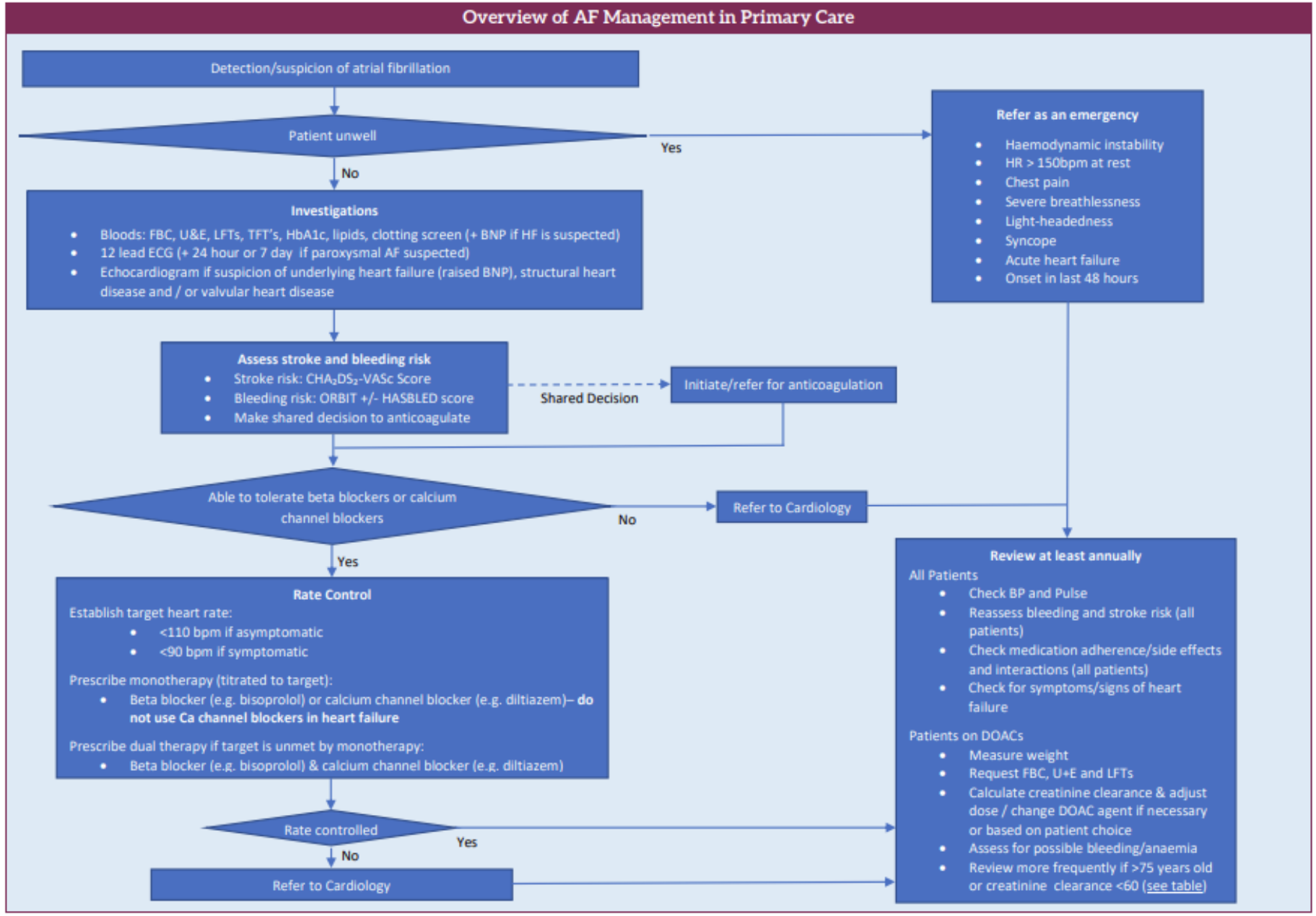
For information, SNOMED codes being used are:

Atrial fibrillation screen using BP monitor with AF detector.

Code	Concept ID	Description ID
Atrial fibrillation screen using BP monitor with AF detector	1978701000006108	1978701000006112
AF screen using BP monitor with AF detector abnormal	1978711000006106	1978711000006110
AF screen using BP monitor with AF detector normal	1978721000006103	1978721000006119

Referral to atrial fibrillation clinic

Code	Concept ID	Description ID
Referral to atrial fibrillation clinic	758600000	3620630016



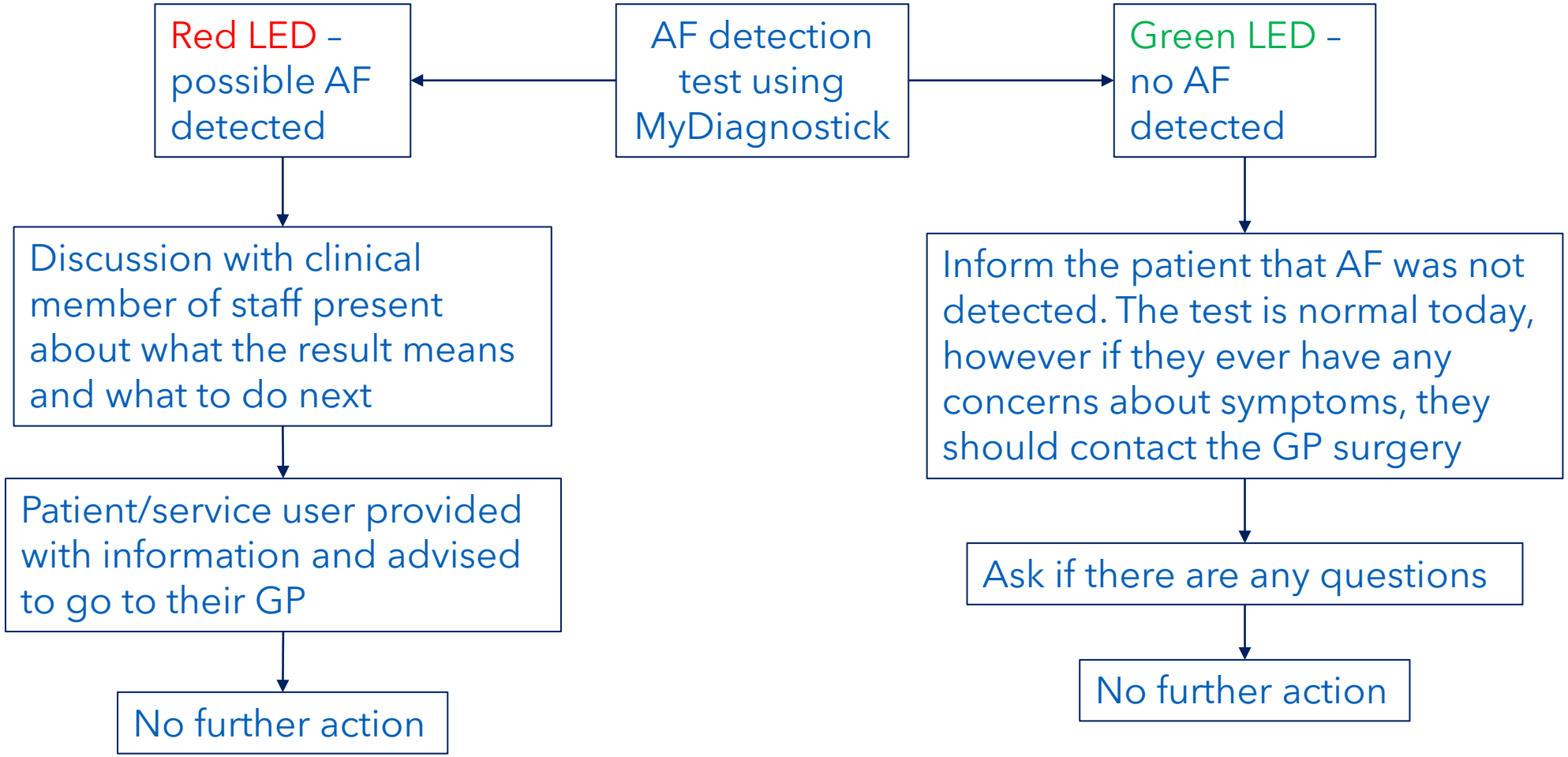
CESEL AF guide for primary care

https://www.selondonics.org/wp-content/uploads/dlm_uploads/CESEL-AF-guide-FINAL-1.1-April-2024.pdf

Diagram p.3 of CESEL guide

See page 8 of CESEL guide for borough specific diagnostic and referral pathways

Community or outreach settings example pathway



Using the software

- The device will store up to 140 ECG recordings and will then begin to overwrite
- The device does not store patient information
- Do not enter patient information into the software
- ECGs stored on the MyDiagnostick device are automatically transferred to the software when the device is connected
- Select preview to view the ECGs
- Each reading has a date/time stamp on it
- The readings appear in date order with the newest one first
- The Previous and Next buttons are used to view each of the ECGs, allowing you to scroll through the readings

- View supporting webinars here: https://healthinnovationnetwork.com/resources/atrial-fibrillation-detection-devices-resources-2024/
- 'MyDiagnostick Management Studio: User Manual' https://irp.cdn-website.com/295ce316/files/uploaded/DSF310010-001.1.pdf

Downloading the ECG trace

When using the Ardens template:

- If possible AF is detected (red light) connect the device to the computer at the end of the appointment
- Select preview and identify the ECG reading you want (most recent reading will be shown first)
- Save the PDF to a secure location
- Attach pdf to the correct patient notes (or send to GP if existing secure transfer is in place)
- Refer / task to refer with the ECG trace attached

If this is not possible:

- At each appointment/every time the device is used, you will need to record the date and time with a patient identifier (this can be done using the AF programme data monitoring spreadsheet)
- At the end of the clinic/day, connect the device to the computer and preview the ECG readings
- Use the time and date recorded (on the spreadsheet) to match with the time and date stamp on the ECG and identify the ECG trace(s) that need to be saved (possible AF detected, red light).
- Save the PDF to a secure location and attach to the correct patient notes
- Refer / task to refer with the ECG trace attached

Evaluating the project

To help us to understand the impact of the project we are asking everyone using the MyDiagnostick devices provided to record data for the purposes of an evaluation

The evaluation is being undertaken by the Health Innovation Network

There are two ways to record data depending on your site and preference:

- A data monitoring spreadsheet
- An Ardens template in EMIS

(see slides 21 & 22 for more information about these methods)

We are asking for data on:

1. Ethnicity, age and gender
2. Number of AF detection tests performed
3. Number of possible AF results detected
4. Number of AF diagnoses confirmed
5. Number of people starting anticoagulation medication
6. Mode of use e.g. assigned to a clinic/room/HCP
7. For positive results what was the referral process/wait time for diagnosis

We may also ask to speak with you directly about your experience of using the device

Completing the AF programme data monitoring spreadsheet

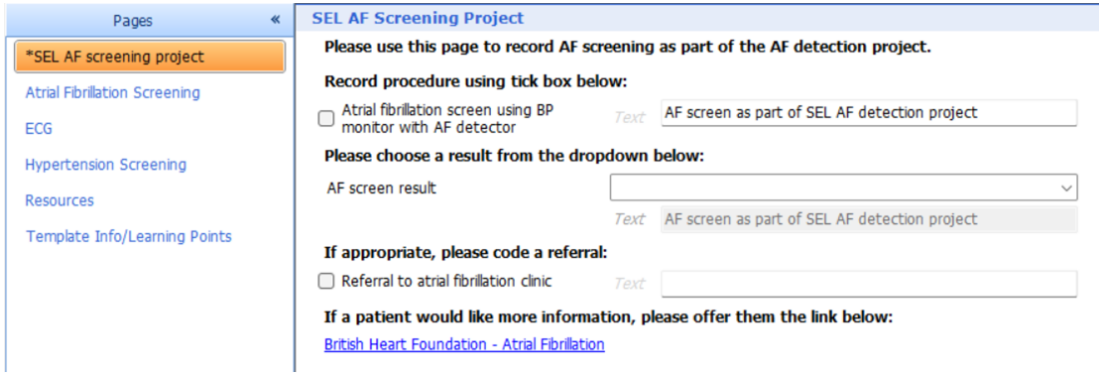
- If you do not have access to the Ardens template or prefer to use the spreadsheet, please use the AF programme data monitoring spreadsheet (alongside your electronic patient records where applicable) to help you track and match the ECG traces stored on the MyDiagnostick device

Please ensure spreadsheet is only used on a work approved device and is PASSWORD PROTECTED.									Practice/ organisation name:	ENTER NAME HERE								
Admin		Please delete these columns before returning to the HIN / ICB				Patient Demographics			Results and actions					Comments				
Reading Number	Date of reading	Time of reading	Patient ID - EMIS Number	Patient Initials	Staff member taking reading	Age Group	Gender	Ethnicity	Reading result	Patient notes coded and updated	Action taken (as a result of reading)	AF confirmed? (following referral)	Anticoagulation medication started?	Any further comments or observations? Please use this column to add any further context around the AF checks undertaken or any observations about using MyDiagnostick				
	DD/MM/YYYY	These fields are for your own use so please enter information in the most useful format to you				Select from drop down menu	Select from drop down menu	Select from drop down menu	Select from drop down menu	Select from drop down menu	Select from drop down menu	Select from drop down menu	Select from drop down menu	Free text				
1																		
2																		
3																		
4																		
5																		

- Record all tests done in the spreadsheet
- We will also use this spreadsheet to evaluate the programme to try to find out what has worked well and what could be improved, and to monitor health inequalities. You will only be asked to submit this for the evaluation once (following 3 months of data collection)
- Before sending, please ensure the requested columns are deleted (No patient identifiable data should be shared)
- Once the spreadsheet has been shared for the purpose of the evaluation, we advise that the data is cleared from the spreadsheet
- The spreadsheet can be found here under Programme Resources: Procedures and pathways

Using the Ardens template

- There is an Ardens template for use in primary care to record AF detection activity
- The template can be accessed via the F12 launcher or via a page in the 'ECG + AF screening' template
  - Instructions for use of the F12 launcher are available via THIS LINK
  - Or navigate to the ECG + AF screening template
- If using the template
  - Fully complete the **'SEL AF screening project'** page
  - If possible AF is detected (red light) you will need to download the ECG trace from the MyDiagnostick device at the end of each appointment to save to the correct patient record



Data will be collected on the number of AF detections performed and the results per practice

You may be asked to do a one-off search of the clinical system (full instructions will be provided) and share non-identifiable data with the Health Innovation Network for the purposes of evaluation

If you do not wish to use the Ardens templates, you may use the data monitoring spreadsheet as described

Symptoms of AF

The symptoms of atrial fibrillation can include:

- palpitations (the feeling that your heart is racing, pounding, fluttering or like you have missed heartbeats)
- chest pain
- finding it harder to exercise
- tiredness
- shortness of breath
- dizziness or feeling faint.

Patients are advised to speak to a healthcare professional if they have any of these symptoms.

https://www.bhf.org.uk/informationsupport/conditions/atrial-fibrillation

Information for patients/public

- AF
  - https://www.nhs.uk/conditions/atrial-fibrillation/
  - https://www.bhf.org.uk/informationsupport/conditions/atrial-fibrillation
- Checking your pulse
  - https://heartrhythmalliance.org/programs/know-your-pulse
  - https://www.bhf.org.uk/informationsupport/tests/checking-your-pulse
- Arrhythmias
  - https://www.bhf.org.uk/informationsupport/conditions/arrhythmias
- Atrial flutter
  - https://www.bhf.org.uk/informationsupport/conditions/arrhythmias/atrial-flutter

Where can I get support?

SEL programme support: for supporting webinars and resources visit https://healthinnovationnetwork.com/resources/atrial-fibrillation-detection-devices-resources-2024/

ECG recording error

- ECG recording is not possible if the device is connected to a computer
- The device will only start an ECG recording if the device is in the deactivated state when the patient grabs the device handles
- If a measurement does not start, or stops during a measurement because of an error message, this may be due to insufficiently good contact between the user and the electrodes (handles). Causes can be:
  - Hands and/or electrodes "too clean" (e.g. by disinfection which make surfaces too clean/dry);
  - The contact surface may also not be sufficiently clean

If an error occurs the device emits 1 long beep and the power LED flashes
Release the device handles until the device deactivates and try again

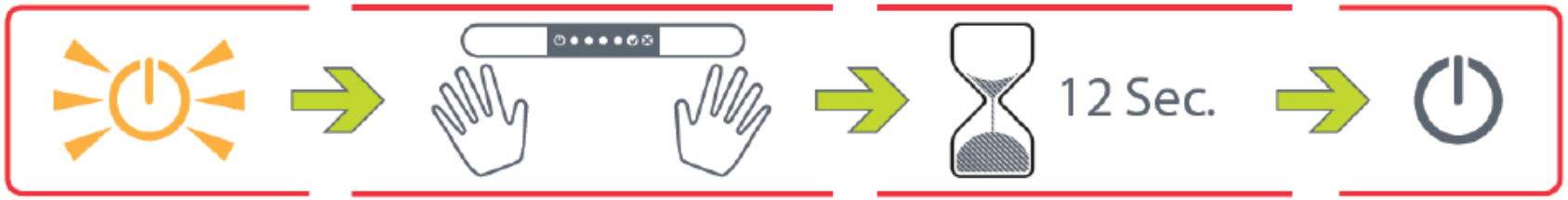


Image from: MyDiagnostick 1001R - Device Manual, DSF310003-001 en, Final, Revision 3, page 9. See also page 7.

Where can I get support?

90-day Mediserve support. During this time, support with using the device can be obtained by calling the Numed Technical Support team on 0114 3990010.
Support is available 8am – 5.30pm Monday – Friday (excluding public holidays in England).

Following the initial 90 days period, Practices can obtain basic support for their MyDiagnostick devices by viewing videos on the website, or by contacting our support team by email at support@numed.co.uk.

MyDiagnostick website https://www.mydiagnostick.com

Frequently asked questions https://irp.cdn-website.com/295ce316/files/uploaded/F.A.Q%20and%20Tips%20-%20Tricks%20MyDiagnostick%201001R.pdf

More detailed support requests should be directed to the Manufacturer at info@mydiagnostick.com

Device Ownership and Information Governance

- Responsibility for the AF detection devices is transferred to the recipient organisation on supply by the ICB/Numed. This includes responsibility for the storage and maintenance of the devices, including:
  - Storing the MyDiagnostick device in a secure place and charging it regularly
  - Downloading and installing the MyDiagnostick Studio Management Software to the appropriate GP practice computers for use with the MyDiagnostick, and updating it as required
  - Contacting Numed distributors should the device become faulty within the warranty period
- Recipient organisations and / or providers acting on their behalf are responsible for the clinical use of these devices
- On receipt of the AF detection devices, the recipient organisation acknowledges their responsibility to ensure that national and local information governance requirements are adhered to, along with the procedures around the security of patient identifiable data
  - Ardens will be publishing reports from the EMIS template data and the ICB will be supported by the BI team to produce a dashboard for data collection following 3 months of AF detection
  - There will be regular community of practice meetings to share learning
  - At the end of 3 months of data collection, an evaluation will be produced by the HIN to share with NHSE- local input/experiences will be valued for this

Thank you for your support and commitment to this AF detection project to benefit our local population

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