



Better Access

Electrocardiogram Protocol

Version	2
Date	1 April 2022
Approval date	1 April 2022
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RENEWAL DATE	May 2026



Electrocardiogram Protocol

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1 Introduction

1.1 Protocol statement

The electrocardiogram is an important diagnostic procedure and will be undertaken only by trained members of staff (Better Access). Effective recording can aid diagnosis and support clinicians in identifying the most appropriate treatment pathway.

1.2 Status

Heartbeat aims to design and implement policies and procedures that meet the diverse needs of our service and workforce, ensuring that none are placed at a disadvantage over others, in accordance with the Equality Act 2010. Consideration has been given to the impact this policy might have in regard to the individual protected characteristics of those to whom it applies.

This document and any procedures contained within it are non-contractual and may be modified or withdrawn at any time. For the avoidance of doubt, it does not form part of your contract of employment.

1.3 Training and support

Heartbeat will provide guidance and support to help those to whom it applies understand their rights and responsibilities under this policy. Additional support will be provided to managers and supervisors to enable them to deal more effectively with matters arising from this policy.

2 Scope

2.1 Who it applies to

This document applies to all staff who are responsible for requesting, undertaking and reviewing ECGs. Other staff performing functions in relation to the practice, such as agency workers, locums and contractors, are encouraged to use it.

2.2 Why and how it applies to them

This document has been produced to provide clinical staff with the necessary information to enable them to undertake resting 12-lead electrocardiograms effectively.

3 Definition of terms

3.1 Electrocardiogram

A 12-lead electrocardiogram (ECG) is a non-invasive procedure used to obtain information about the electrophysiology of the heart, including the heart rate and rhythm. It is a representation of the heart's electrical activity during depolarisation and repolarisation, recorded from electrodes placed on the body's surface, which enables pathology to be localised to particular regions of the heart.¹

4 Guidance

4.1 Sources of information

Information contained within this protocol has been taken from [Clinical Guidelines by Consensus: Recording a standard 12-lead electrocardiogram. An approved method by the Society for Cardiological Science and Technology \(SCST\) 2017](#). This guidance is recommended by NICE.

5 Process

5.1 Equipment checks

Prior to conducting an ECG, staff must ensure that the Heartbeat CIC ECG machine is fully functional, and all ancillaries are available. The correct date and time must be displayed on the machine, which must also conform to the requirements of International Electrotechnical Commission standards IEC 60601-2-25:2015.

The disposable tab electrodes must conform to the requirements of the American National Standards Institute / Association for the Advancement of Medical Instrumentation (ANSI/AAMI) EC12:2000(R)2015.

5.2 Staff training

Any member of staff undertaking an ECG must have completed the appropriate level of training as outlined in their individual training plan. In-house training will be provided as required and competencies to be signed off.

¹ [Mid Essex Hospital Services – Performance of an Adult 12 Lead ECG](#)

5.3 Patient identification

Staff must ensure that they identify the correct patient prior to undertaking the ECG. Where necessary, the use of carers is encouraged if the patient is unable to confirm their identity.

5.4 Consent

All staff must:

- Introduce themselves – name and role
- Explain the procedure – including level of undress, use of electrodes, etc.
- Provide reassurance
- Obtain informed consent from the patient or their carer.

5.5 Chaperones

All staff must adhere to the organisation's chaperone policy. Patients are to be offered a chaperone before the procedure commences. Detailed chaperone guidance can be found in the afore mentioned policy.

5.6 Level of undress

As stated at paragraph 5.4, the patient is to be briefed regarding the expected level of undress. Staff are to be mindful of the cultural sensitivities of their diverse patient population when asking a patient to prepare for an ECG.

The need to apply electrodes will usually require the patient to undress above the waist. Patients should be able to do so while maintaining as much privacy and dignity as possible. Once the electrodes are situated correctly, the patient is to be covered in order to maintain their modesty. Again, reassurance and compassion will place the patient at ease.

5.7 Positioning of the patient

The patient must be relaxed when recording the ECG; therefore, the patient should be placed in a semi-recumbent position of 45 degrees which is preferred by most patients. The limbs of the patient are to be supported on the examination couch, thereby reducing movement and muscle tension.

5.8 Preparation of patient's skin

It may be necessary to cleanse the patient's skin. In addition, there may be a requirement to remove chest hair from the patient using a single-use razor; this procedure requires verbal consent from the patient.

5.9 Positioning electrodes

Electrodes are to be positioned as detailed in the table below.

Lead	Colour	Code	Position
Right arm	Red	RA	Right forearm, proximal to wrist
Left arm	Yellow	LA	Left forearm, proximal to wrist
Right leg	Black	RL	Right lower leg, proximal to ankle
Chest	Red	V1 (C1)	Fourth intercostal space at the right sternal edge
Chest	Yellow	V2 (C2)	Fourth intercostal space at the left sternal edge
Chest	Green	V3 (C3)	Midway between V2 and V4
Chest	Brown	V4 (C4)	Fifth intercostal space in the mid-clavicular line
Chest	Black	V5 (C5)	Left anterior axillary line at the same horizontal level as V4
Chest	Purple	V6 (C6)	Left mid-axillary line at the same horizontal level as V4 & V5

The image overleaf illustrates the standard electrode positions.

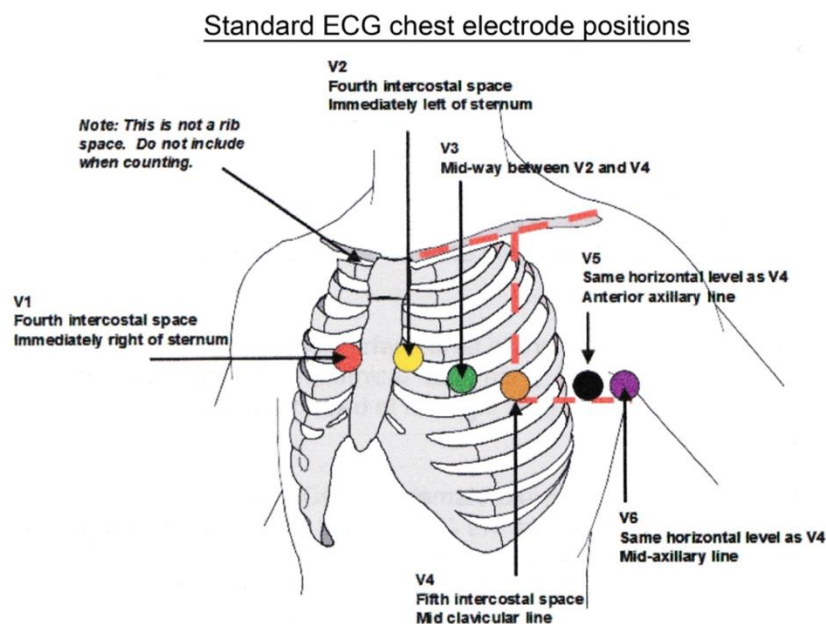


Image source: scst.org.uk

5.10 Locating electrode positions

Detailed guidance for finding the correct position to place the electrodes can be found on page 11 of the document hyperlinked at paragraph 4.1. Once an acceptable recording has

been obtained, the electrodes are to be removed from the patient and disposed of in the clinical waste bin.

5.11 Best practice considerations

To ensure that the ECG is of the best possible standard, staff should use the auto function which will initiate a standard ECG recording. The filter function should remain off.

Encourage the patient to remain as relaxed as possible and to remain still during the recording. If, however, there is muscle interference showing, the filter may be switched on and the recording repeated.

Once the ECG has been recorded, the staff member should ensure the ECG is saved to the notes correctly. Staff to complete Arden's template ECG and document clearly if any pain or discomfort whilst having the ECG and history of any pain.

For routine ECGS task to be sent to the patient's practice.

5.12 Clinical concerns

Should the patient show any signs or symptoms of cardiac origin, the person recording the ECG should request immediate support. If the recording shows abnormalities, the appropriate level of clinical support is to be requested straight away.

5.13 Documentation

All documentation is to be correctly annotated with the patient's details and uploaded into the patient's healthcare record. It is recommended that the ECG recording is documented on Arden's ECG template

5.14 ECGs on children

The standard recording method for children mirrors that of adult patients. Further guidance and advice can be found on page 18 of the document hyperlinked at paragraph 4.1.

6 Summary

ECG recording is an everyday occurrence in general practice. However, for the recording to be accurate and for the patient to have an optimal experience, adherence to the guidance given in this protocol and referenced material is essential. Using appropriately trained and competent staff will ensure that a high level of patient-centric care is delivered at all times.