

AliveCor 6L ECG Monitor – Operating Manual

*This device must only be used for the purpose of QT monitoring only. On review of the ECG, any abnormalities of arrhythmias must be followed up via a 12 lead ECG and specialist advice sought as necessary.

*Do not use this device on service users under the age of 18 and/or service users with a bodily implant/pacemaker. Do not use this device on service users with a swallowing risk.

Watch the video for instructions
<https://vimeo.com/335613884>

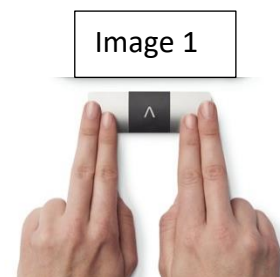
Decide who will be conducting the ECG's, who will receive the PDF and how you are going to store the PDF, e.g. print and keep a hard copy, screenshot the PDF and put into Paris or keep an electronic copy on your shared drive.

Step 1: Switch on the KardiaApp on your Trust approved smartphone or tablet



Step 2: Ensure the KardiaMobile device close to the Trust approved phone (60cm range) and press record EKG

Step 3:



Before using the KardiaMobile device with the patient

- Complete risk assessment prior to using this device with a patient
- Do not use this device with patients who have a risk of swallowing
- Before using the device with the patient, it is important to have verbal consent from the patient, and to record this consent on Paris

TEWV Infection Prevention Control Guidance 2021

Step 1: Patients and staff should clean their hands and the areas of their body in contact with the device with soap and water or alcohol gel before and after use. Staff should wear gloves when handling the device.

Step 2: Staff to use detergent wipes (Clinell – only yellow package) to clean the device before and after use.

Step 3: Thoroughly dry the device with paper after using the detergent wipes, and the equipment must be thoroughly dry before storing

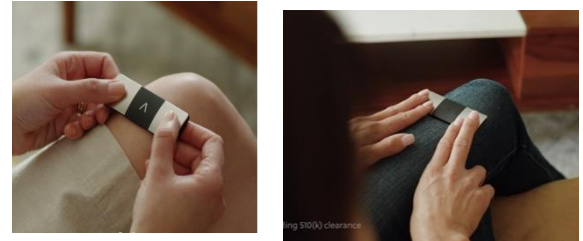
With the A facing away from the patient, ask the patient to lightly place their fingers on the electrodes (two fingers on the right electrode and two fingers on the left electrode as per image 1).



If over clothing: apply small amount of water to clothing on left knee or ankle and touch the bottom electrode to this area.

If ankle or knee is bare skin, no water is required.

Image 2



Step 4: Ask the patient to keep as still as possible. Give the trace a few minutes to settle. The ECG results should be available after 30 seconds of recording



Step 5:

- The patient's ECG results will be sent securely to the NHS email address associated with the device when set up. No PII is reported.
- This can be sent as a PDF to the doctor's encrypted NHS email address for them to read the ECG results.



Step 6: Update patient electronic care record and provide details of who the results were forwarded to for review.

- To ensure we follow a standardised recording process, please follow the below reporting procedure:
- Report on the Paris that a risk assessment has been conducted and the patient does not have a risk of swallowing
- Report staff member's name, that verbal consent has been given by the patient, the ECG has been recorded, and the outcome.
- Print screen the ECG PDF by simultaneously pressing the 'Ctrl' and 'PrtScr' keys. Then, go to the letters section in the patient notes and 'paste'. This should paste the picture of the ECG. Save.

Step 7: The doctor reviewing the ECG should record QTC interval results in the patient's electronic care records.

According to the Minimum Standards for Clinical Record Keeping Policy regarding storage, the ECG PDF must also be printed:

- **item 4.1.7** File blood, urine and other biochemistry or laboratory results and medical investigations on a mount sheet in the appropriate section in the paper record.
- **Item 4.1.8** A responsible clinician must sign, print their name and date test results to signify they have been looked at and understood and any necessary action taken.

- **Item 4.1.11** *Bind documents directly into the folder; there must be no loose pages. Paper 'Stora' envelopes may be used for keeping items unspoiled and secure, for example: • Children's artwork • Paper traces from machine recordings (EEG and ECG traces) • Notes and letters written by service users There is space provided on the front of the 'Stora' envelope to catalogue its contents; please ensure you do this.*

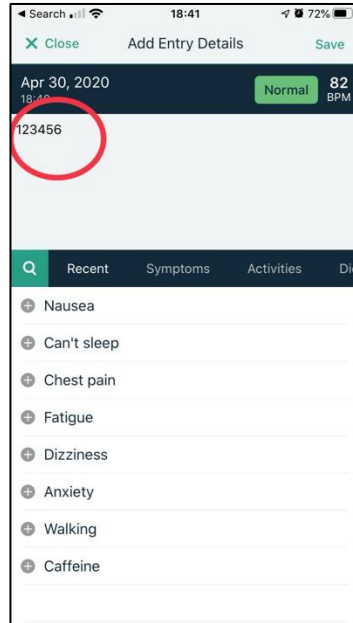
****This policy is subject to change due to upcoming policy amendments**

Abnormal ECG

- If an abnormal ECG is obtained, a second reading will be required. A 12L ECG should be conducted.
- If the 12L ECG is also abnormal, please follow the usual guidance and refer to a cardiologist.

How to add unique number and send ECG

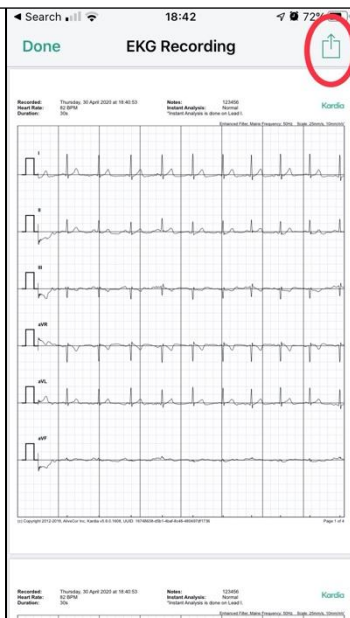
1. Press add note (*add unique patient number*)



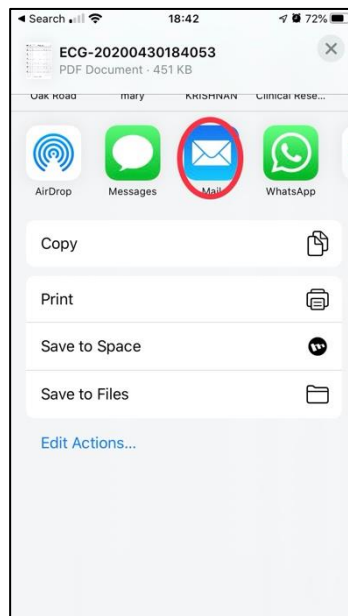
2. Press share PDF



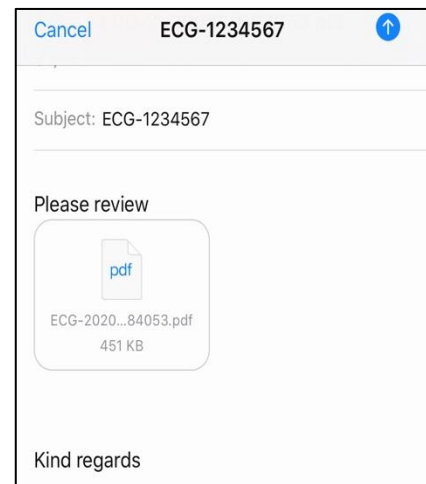
3. Press share button (iOS example image)



4. Press email



5. Send ECG to @nhs.net email address



QTc Calculation:

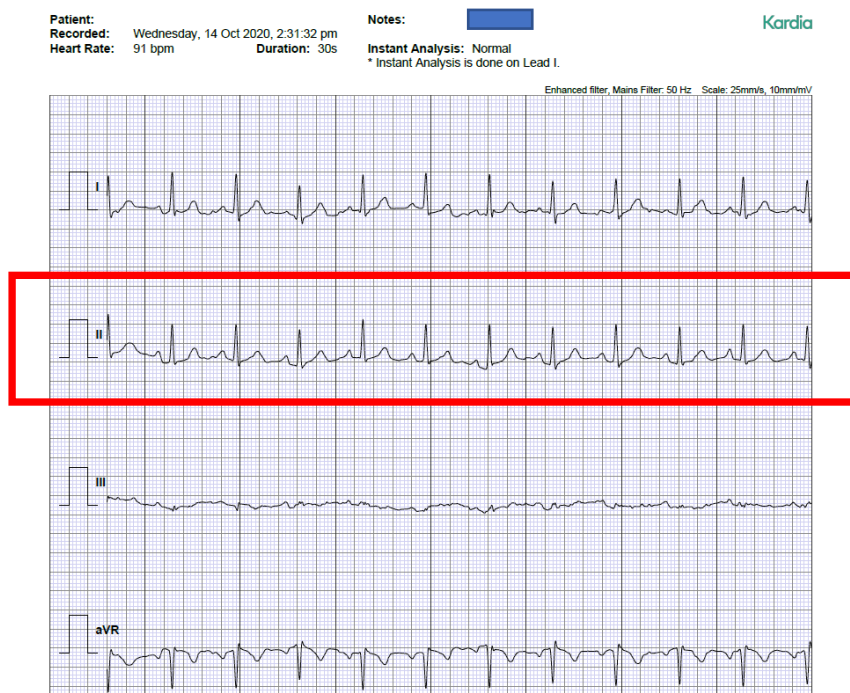
There are several formulas available to calculate QTc. There is no current consensus on which is preferable. However we recommend that you use Fridericia's measurement for a number of reasons:

- 1) This is the most common measurement used as automated calculations by ECG machines, making comparison to previous readings easier.
- 2) It is more reliable at higher heart rates.
- 3) It is the measurement used to monitor other QTc-prolonging medications
- 4) Studies have shown it is a more accurate measure of all-cause mortality.

Please see "Which QT Correction Formulae to Use for QT Monitoring?" Bert Vandenberg, MD et al; J Am Heart Assoc. 2016 Jun; 5(6): e003264.

How to measure the QT and obtain a QTc value:

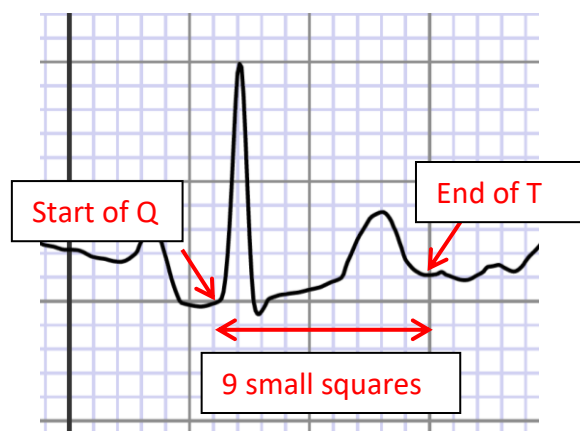
1. Measuring the QT: This is most commonly performed in lead II or aVR but please select the lead in which the QT interval is clearest/longest.



2. Select a QRS complex where the start of the QRS complex and end of the T wave is clear.
3. Enlarge the image so the QRS complex can be viewed easily.



4. Count the number of small squares from the start of the Q wave to the end of the T wave, please see examples below. If you are unsure you can take a few readings and record an average.



5. The QT interval is number of small squares x 40ms

Calculate the QTc:

This can be done using the following online calculator (also available in the app store) <https://www.mdcalc.com/corrected-qt-interval-qt-c>

Corrected QT Interval (QTc) ☆

Corrects the QT interval for heart rate extremes (choose from Bazett, Fridericia, Framingham, or Hodges formulas).

Formula


Bazett
Fridericia
Framingham
Hodges

Heart rate/pulse 91 beats/min

Paper speed, mm/sec 25 50

QT interval
Toggle unit to use msec or small boxes, 1 small box = 40 msec (see below for example where QT interval = 4 small boxes)

9 small boxes



Amplitude

One large box
*One large box = 200 msec (if paper speed = 25 mm/sec); one large box = 100 msec (if paper speed = 50 mm/sec)

One small box
*One small box = 40 msec (if paper speed = 25 mm/sec); one small box = 20 msec (if paper speed = 50 mm/sec)

414 msec
Corrected QT Interval (QTc)

Ensure you have selected Fridericia formula

Put the pulse from the recording

Ensure you have selected correct paper speed. 25mm/sec is standard

You can swap between measuring in ms or small squares here

The QTc will be calculated and please record this in the notes

Use the Trust Guidance for antipsychotic monitoring and QT prolongation management <https://www.england.nhs.uk/north/wp-content/uploads/sites/5/2018/12/QTc-flow-diagram-with-medications-final-Dec-17-A3-with-logos.pdf>

Scan the QR code for some more Resources



Few Key Do's and Don'ts

Recording

Please record only the PARIS number and the date of recording. No other information.

Do not record name, DOB or any other patient identifiable details.

COVID Precautions

Always follow IPC guidelines when doing this procedure.

Clean the device with yellow packaged Clinell wipes and thoroughly dry with a paper towel before and after use, as per IPC advice.

Ask the patient to wash their hands before using the device.

Storage

Store between 0°C to +40°C. Only store once cleaned with yellow packaged clinell wipe and thoroughly dried with a paper towel.

Battery

The Home Screen on the app will prompt when battery is low and needs changing.

Battery can be replaced it takes a CR2016 coin cell battery (watch battery) .

