



# Device home monitoring for pacemakers, defibrillators and loop recorders

A Fact Sheet by Dr Sue-Ling Liew

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## What is device home monitoring?

Implanted cardiac devices such as pacemakers, defibrillators and loop recorders always require follow-up after implant. Often this will take the form of in-office checks, however in addition to this, most devices are now capable of monitoring from home.

This allows the implanted cardiac device to communicate with the cardiologist or the clinic that is following up the device at additional intervals other than during an in office/face-to-face check.

In many situations, a supplementary home monitoring service may be offered to patients.

## What are examples of home monitors?

Home monitors for cardiac rhythm devices can take the form of:

1. Bedside monitor
2. Portable monitor (usually small and similar in size to a smartphone)
3. Utilise your own smartphone, and transmit data via an application (app)



**Heart Week**

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## What sort of information can be communicated via home monitoring?

- Information about the device – eg. lead performance, battery longevity.
- Information about the patient's clinical status – pacing percentages, heart rate profile, fluid status
- Information about rhythm disturbances – tachyarrhythmias eg. AF/flutter/atrial tachycardia, ventricular tachycardia
- Information about device therapies – eg. Anti-tachycardia pacing or shocks to terminate atrial/ventricular arrhythmias.

## What are the benefits to the patient?

- Early detection of issues – device issues (eg. Lead fracture, premature battery depletion), new arrhythmias (eg. Detection of atrial fibrillation may lead to change in management).
- Regular additional monitoring can offer better peace of mind.

## How does home monitoring work?

1. Schedule – usually full downloads are scheduled by the device home monitoring clinic (the frequency of these can be altered)
2. Send – Device information is sent automatically or manually
3. Transmit – the information travels from the remote monitor to the clinic
4. Review – the clinic/doctor reviews the information on a secure website

In addition, some devices are able to send automatic notifications if the situation is more critical, eg. Lead fracture/failure, sudden battery depletion, etc.



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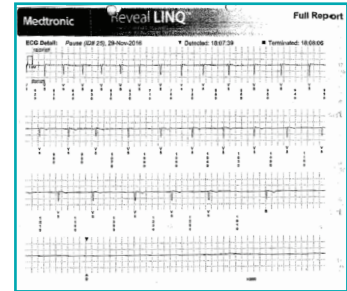
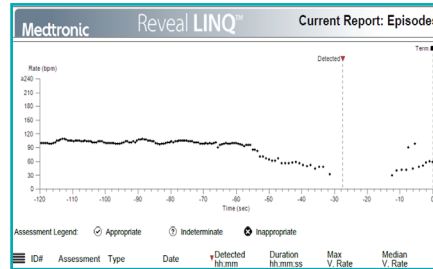
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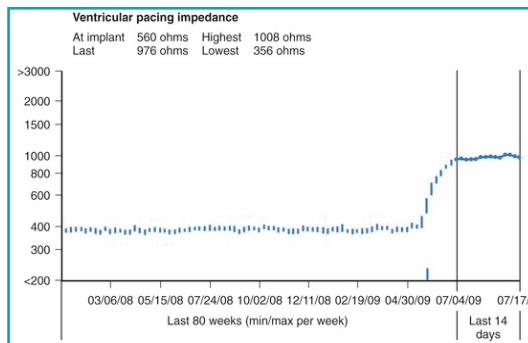
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## Examples of useful home monitoring information.

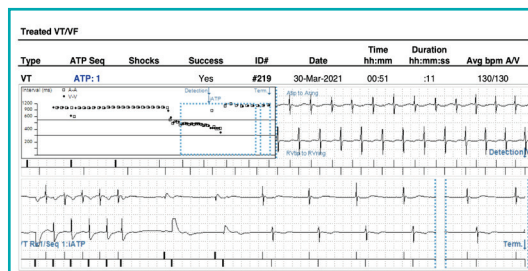
**Example 1:** 55 year old lady with recurrent syncope/blackouts. Multiple cardiac and neurological investigations negative. Loop recorder inserted. Home monitoring detected a 15 second sinus pause (traces below). Patient loop recorder explanted and pacemaker inserted.



**Example 2:** 70 year old man with cardiac defibrillator. Home monitoring alerts cardiologist to sudden rise in ventricular impedance and inappropriate shocks. Patient contacted (was aware of shocks but felt well). Patient admitted and new lead inserted.



**Example 3:** 65 year old lady with cardiac defibrillator. Due for check during COVID-19 and patient unable to leave home due to chest infection. Home monitoring demonstrates successful anti-tachycardia pacing in response to ventricular tachycardia. Patient reviewed for telehealth review and able to be reassured that therapy was effective and medications satisfactory.



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