Piloting the CardioMEMS Heart Failure System

Initiative Type

Technology

Status

Close

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URL

https://test.clinicalexcellence.qld.gov.au/improvement-exchange/cardiomems

Summary

Heart failure (HF) is a complex chronic condition where the heart is not able to pump sufficient blood. HF is a serious disease; 50 per cent of patients are dead within 3 years of diagnosis. Heart failure hospitalisations cost around $1 billion per year in Australia, they also increase the risk of death and impair the quality of life. Once symptoms develop it is usually too late to avoid hospitalisation. Early detection can be achieved by measuring the pulmonary artery (blood) pressure (PAP) using

CardioMEMS HF System; a small sensor implanted into the pulmonary artery. Patients are able to transmit sensor readings remotely to the Heart Failure Service for monitoring and therapy adjustments by staff as required.

Key dates

Sep 2015

Sep 2017

Implementation sites

Advanced Heart Failure and Cardiac Transplant Unit, The Prince Charles Hospital

Partnerships

Healthcare Improvement Unit

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Aim

This project aims to pilot and evaluate new technologies within 'real world' clinical settings in the Queensland context.

Benefits

Benefits of the CardioMEMS HF System include:

- The sensor information can detect changes before the patient notices symptoms allowing changes to medication and reducing the need to be hospitalised.
- It is simple and easy to use, with a home electronics unit that wirelessly sends data to your doctor.
- The sensor does not need a battery or replaceable parts.

Background

This technology was funded through the New Technology Funding and Evaluation Program (NTFEP). The NTFEP funds the introduction and evaluation of new technologies that:

- Are safe and effective
- Provide better health outcomes
- Provide value for money
- Provide greater access to care.

The evaluation findings will inform recommendations regarding the future use and/or investment of the technology within Queensland.

Evaluation and Results

- Patients were hospitalised 5 times less during the 6 months after the CardioMEMS implant, compared to the 6 months before, saving approximately $192,000.
- More targeted and optimised use of medications.
- Patient selection is complex and crucial to maximise outcomes. No patients with CardioMEMS died during the evaluation period due to their heart failure.
- Patients with CardioMEMS attend an outpatient clinic every 6 months compared to every 1 to 2 months without CardioMEMS.

- Restricting implantation to a single cardiologist who was not a heart failure specialist increased clinic requirements.
- CardioMEMS would be suitable for other heart failure services in Queensland with at least two experienced heart failure cardiologists and specialised heart failure nurses.

Resources

Technology evaluation summary

PDF saved 22/05/2025