
Rhythmia HDx Mapping System

Initiative Type

Technology

Status

Deliver

Added

01 February 2018

Last updated

06 December 2019

URL

<https://cnxp3cuvtvrn68yjaibaht5ywrxspj7m.clinicalexcellence.qld.gov.au/improvement-exchange/rhythmia-mapping>

Summary

Rhythmia HDx is a 3-dimensional cardiac mapping and navigation system that allows heart rhythm specialists to accurately diagnose, define and treat complex cardiac arrhythmias (abnormal heart rhythms). Following comprehensive mapping of the patient's abnormal heart rhythm, a catheter (wire) is guided via real-time tracking (similar to a GPS) to the area where the rhythm can be treated

by radiofrequency ablation (similar to cautery). Complex arrhythmias often occur in patients with more advanced forms of heart disease and can result in severe symptoms, collapse or death. Existing mapping systems have limitations related to spatial resolution and speed of map acquisition and the Rhythmia system potentially addresses these concerns by using a mini-basket catheter with 64 micro electrodes to record signals.

Key dates

Jul 2016

Jun 2017

Implementation sites

The Prince Charles Hospital

Partnerships

Healthcare Improvement Unit

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Aim

Provides an opportunity to pilot and evaluate new technologies within 'real world' clinical settings in the Queensland context.

Benefits

Rhythmia allows high-resolution mapping and accurate identification of multiple complex varieties of arrhythmias and the catheter was very useful for some arrhythmias (especially in congenital heart disease). In addition, the mapping time (for complete circuit characterisation) was significantly reduced compared to conventional point-by-point mapping.

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

- Rhythmia has been utilised for complex atrial and ventricular arrhythmias, particularly in patients with congenital heart disease who are usually very difficult to treat.
- Rhythmia allows high-resolution mapping and accurate identification of multiple complex varieties of arrhythmias. This level of definition would not have been possible with conventional mapping systems.
- No complications occurred with the use of this mapping system. In addition, the disposable costs per case are comparable to other mapping systems.
- Mapping time (for complete circuit characterization) was significantly reduced compared to conventional point-by-point mapping.
- Patients and laboratory staff were exposed to very little radiation, as the Rhythmia system

uses magnetic/impedance based tracking and is fluoroscopy-independent.

- While found to be very useful for some arrhythmias (especially in congenital heart disease), the basket catheter did not perform as well for other types of arrhythmia. Rhythmia will not replace other systems at present.

Resources

[Technology evaluation summary](#)

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