

ECHONET: Using broadband telemedicine technology to support an ICU team in a regional hospital

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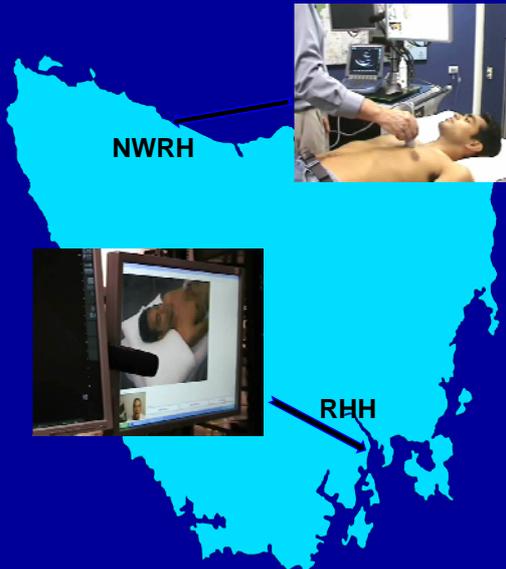
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AIM

The purpose of the ECHONET (EchoCardiographic Healthcare Online Networking Expertise in Tasmania) project was to use broadband telemedicine technology to support an ICU team in a regional hospital.

INTRODUCTION

ECHONET employs several channels of high quality video available on a mobile trolley to permit real-time transthoracic or trans-oesophageal echo viewing and face to face interaction. It was trialled between the ICU team at the North West Regional Hospital (NWRH) and specialist colleagues at the Cardiology and ICU departments of Tasmania's major tertiary referral hospital, the Royal Hobart Hospital (RHH).



METHOD

ECHONET was designed over 21 months from November 2005 through:

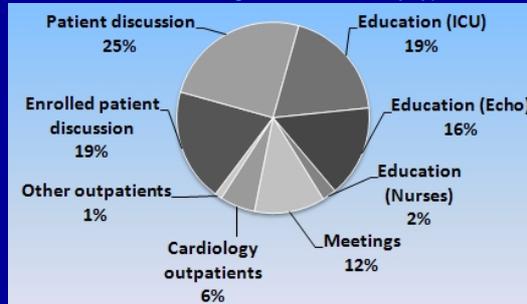
- focus groups
- Interviews
- design workshops
- baseline study
- staff training sessions

An action research-based clinical trial was conducted over 9 months commencing in August 2007. A comprehensive evaluation took place which utilised:

- interviews
- questionnaires
- observations
- informal feedback
- collection of clinical information



ECHONET usage: Breakdown by type



ECHONET's availability led to a number of unforeseen uses which greatly enhanced its value to the regional workforce.



RESULTS

All user groups (intensivists, registrars, echo technicians and nurses) indicated strong support for the usefulness of advanced telemedicine systems in ICU. Typical feedback included:

"Highly satisfied – now part of statewide ICU team, good access to great minds." – (Intensivist, NWRH)

"Very good to confirm clinical picture." – (Anaesthetist, NWRH)

"Terrific way of performing remote specialist reviews of patients" – (Cardiologist, RHH)

"I can see many uses in trauma. Should be in casualty!" – (Plastic Surgeon, RHH)

"Fantastic for back-up in remote areas." – (Senior Registrar, RHH)

"Huge value for teaching." – (Echo technician, RHH)

BENEFITS TO PATIENTS AND CLINICIANS:

- the ability to obtain real-time expert feedback particularly during echocardiography assessments
- eliminating delays
- allowing interactive modification of the examination
- provision of additional information about the patient
- improved communication & working relationships (especially between intensivists at the NWRH and RHH)
- improved confidence for NWRH clinicians
- valuable training opportunities to improve skills and clinical knowledge
- better outcomes for patients and their families including quicker, more accurate diagnoses & reduced travel inconvenience.

CONCLUSIONS

The application of this technology has demonstrated a wide range of benefits including its use as an effective tool to increase confidence and knowledge for regional ICU staff and their patients.

This case study supports how advanced telemedicine systems can play a valuable role in sustaining small ICUs in regional and rural hospitals.

