Title:	Real-time measurement of cardiac output and other cardiac flow parameters (without concurrent cardiac imaging) using continuous wave Doppler techniques
Agency:	Medical Services Advisory Committee (MSAC) MDP 106 Commonwealth Department of Health and Ageing GPO Box 9849 Canberra ACT 2601 http://www.msac.gov.au
Reference:	MSAC 1117 Assessment report First printed August 2009 ISBN **1-74186-857-2** Online ISBN **1-74186-858-0**

Aim

To evaluate the safety, effectiveness and cost-effectiveness of real-time measurement of cardiac output and other cardiac flow parameters (without concurrent cardiac imaging) using continuous wave Doppler techniques.

Results and conclusions

Safety

Continuous wave Doppler ultrasound is a non-invasive test. This procedure is not considered to present safety issues for patients. The non-invasive nature of continuous wave Doppler ultrasound means that it is considered to be safer than the thermodilution technique via pulmonary artery catheterisation (PAC), which is known to be associated with several safety issues.

Effectiveness

Evidence comparing continuous wave Doppler ultrasound without imaging with the thermodilution technique in the adult intensive care setting is contradictory. No comparative evidence was identified to inform assessment of the effectiveness of continuous wave Doppler ultrasound technology in measuring cardiac output as a component of haemodynamic monitoring for patients in paediatric intensive care, coronary care, or emergency settings, or patients with biventricular pacemakers who require device optimisation. Determination of equivalence between the tests cannot be concluded.

Cost-effectiveness

The paucity of available clinical evidence meant that it was not possible to conduct a full economic evaluation in the assessment of continuous wave Doppler ultrasound. Cost-effectiveness cannot be properly determined without establishing clinical effectiveness and therefore remains speculative.

Methods

A systematic literature review, pertaining to real-time measurement of cardiac output and other cardiac flow parameters (without concurrent cardiac imaging) using continuous wave Doppler techniques, was conducted. Data bases searched included EMBASE com, Cochrane Library, Pre Medline as well as HTA Websites.