

POSTGRADUATE DIPLOMA OF PERIOPERATIVE AND CRITICAL CARE ECHOCARDIOGRAPHY

1. Background

The use of ultrasound technology in the perioperative setting of anaesthesia and intensive care has expanded exponentially since the mid 1990s, in Australia and internationally. Educational opportunities for the use of this technology have been relatively deficient compared with the clinical utilisation. In the mid 1990s, there were virtually no educational opportunities, few textbooks, and no formalised teaching or examination process for the use of effective echocardiography, in particular, for the use of transoesophageal echocardiography. During the last five years, educational opportunities in the form of short didactic courses, and textbooks, has increased. There are no courses, however that are comprehensive enough to teach the knowledge required for expert use of ultrasound in the perioperative and critical care setting. Although there is a course available in diagnostic ultrasound, it is more generic to general ultrasound uses rather than for echocardiography, and particularly for the use of echocardiography in the perioperative setting. The diploma of diagnostic ultrasound (DDU), is primarily targeted for radiologists and radiology technicians, rather than for anaesthetists or intensive care physicians. There is currently no course in the world that offers both training and assessment for perioperative echocardiography. The Society of Cardiovascular Anaesthesiologists (SCA), conducts an examination in perioperative echocardiography, but does not conduct a suitable training course. The examination is restrictive, those candidates must travel to America to sit the examination. The need for this proposed course is driven by the expectation of our community that practitioners using ultrasound technology will be proficient in its use, and will have acquired sufficient knowledge to be considered competent by professional peers. In practice, the use of the technology has expanded well beyond the educational opportunities available. This course will allow current and future practitioners to study subjects related to echocardiography in a detailed and comprehensive manner, and to subject themselves to formal assessment.

The demand for this type of course is considerable. In the short courses that have been run over last five years, it has been typical for 80 to 100 candidates to attend. The initial adoption of ultrasound in perioperative setting has been by cardiac anaesthetists. There is continuing demand for education within this craft group, and in the last 12 to 24 months, a similar demand has occurred for non-cardiac anaesthetists and intensive care physicians. The current potential pool for candidates within Australia alone is between 200 and 500 practitioners. Within South Asia, the utilisation of echocardiography in the perioperative setting is similar to that in Australia in the late 1990s. The likely uptake of this technology should mirror what happened in Australia. The fundamental limitation to increased use of this technology in South Asia is not financial restraint, but rather the lack of educational opportunity. Within each institution, it is typical for one doctor to become an advocate for the new technology, and when its utility has been established, others follow. The difficulty for anaesthetists or intensive care physicians in countries from South Asia has been the ability for comprehensive training in this technology. The potential market for this course in South Asia exceeds its potential within Australia many times over. Our objective of providing distance based education and assessment will greatly assist the education of practitioners who are based in rural communities or overseas. Our target group are comprised of specialist medical practitioners, who are generally working in established practices and need the flexibility of distance based education in order to acquire this knowledge.

Strategic and operational goals

This course aims to provide quality education in perioperative echocardiography within Australia and South Asia. There is currently a collaborative group of practitioners within Australia who are prepared to help conduct this course under a "University of Melbourne" banner. This course will strengthen the allegiance between anaesthesia and intensive care craft groups within medicine, foster collaboration within Australia, and secure our role as educators within South Asia.

Specific demand for distance education

This course will be offered as a distance education model only. The mode of delivery will predominantly occur via postage of course materials, rather than by on-line delivery. We have chosen this approach for two reasons: firstly, echocardiography images are large computer files and unsuitable for Web based transfer, and secondly, there are difficulties for candidates in other countries to be a sure of reliable Internet access. Electronic media such as the World Wide Web will help candidates but will not be essential for the completion of this course.

There are no courses or examinations within Australia to certify competence in perioperative echocardiography. There are recommendations for the minimum requirements to achieve competence issued by the Society of Cardiovascular Anesthesiologists (SCA), and the Australian and New Zealand College of Anaesthetists. There are recommendations for training in echocardiography issued by the Australian and New Zealand Cardiac Society. There is currently only one certification examination in transoesophageal echocardiography conducted in America. This proposed course is aimed to provide the educational opportunity and assessment that will meet and, indeed exceed, the requirements for competence at a national and international level. The course does not aim to teach all aspects of echocardiography or ultrasound technology, but rather what pertains to the use of echocardiography, and in particular transoesophageal echocardiography, within perioperative clinical practice and in critical care environments.

2. Entry Requirements

Selection

1. In identifying those applicants most likely to undertake the course successfully, the selection committee may give preference to applicants who are practising as specialists in the areas of anaesthesia, intensive care, cardiology, radiology or surgery; or who are in specialist training programs in those areas.
2. Applicants must possess undergraduate qualifications sufficient to practice as a medical practitioner, such as MBBS or equivalent degrees, as a minimum requirement.
3. The selection committee may call for referees reports, employer references and/or certificates of good standing from the appropriate medical registration board to elucidate any of the matters referred to above.

3. Course Structure

There are eight semester length subjects:

1. Principles of echocardiography
2. Anatomy for echocardiography
3. Doppler and quantitative echocardiography
4. Ventricular systolic and diastolic function
5. Valvular and aortic pathology
6. Echo application in perioperative medicine
7. Transthoracic and epivascular imaging
8. Echocardiography interpretation and reporting

Students will progress through the subjects in a sequential manner. For full-time candidates, subjects 1 to 4 will be covered in the first semester, and subjects 5 to 8 in the second. For part-time students, subjects 1 and 2 will be covered in the first semester of year 1; subjects 3 and 4 will be covered in the second semester of year 1; subjects 5 and 6 will be covered in the first semester of year 2, and subjects 7 and 8 will be covered in the second semester of year 2.

4. EFTSU and Budgetary Consequences

There will be no transfer of EFTSU between faculties.