# Determining the optimum capacity to train: a challenge for the College of Intensive Care Medicine of Australia and New Zealand

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The College of Intensive Care Medicine (CICM) of Australia and New Zealand was established in 2008 and assumed responsibility for the training and certification of intensive care specialists, from the Joint Faculty of Intensive Care Medicine, on 1 January 2010. Although formal intensive care units (ICUs) were established in Australasia in the 1950s and 1960s, vocational training in intensive care only commenced in the 1970s. Over the past 40 years, there has been a steady expansion in the scope and practice of intensive care medicine. Commensurate with this expansion has been an increase in the number of fellows of the CICM over the past two decades, which was predominantly achieved by increasing the intake of trainees into the CICM. To date, the CICM has accredited hospitals for training, but never set a limit on the number of trainees employed by the accredited hospital — a model very similar to that of the Royal Australasian College of Physicians. At the time of writing, there are 1110 fellows and 316 trainees of the CICM. Over the past 10 years, there have been significant changes in the number of medical school graduates, pre-vocational trainees and vocational training positions in both intensive care and other colleges. High trainee numbers have implications for supervision, clinical experience, procedural experience, availability of anaesthesia and medicine rotations, and assessment capacity. Concerns have, therefore, been raised by both fellows and trainees as to whether we are reaching saturation capacity for training.

## Background

One of the early publications on the intensive care workforce in Australia was the AMWAC (Australian Medical Advisory Workforce Committee) report published in 1999.[1] Based on existing ICU demand and projected growth, the AMWAC then recommended an increase in trainee numbers from 24 to 28 per annum. Over the next decade, there was an increase in demand for ICU trainees, consequent to the development of mega-units, and a broadening of our scope of practice into other areas (eg, rapid response, patient transport and organ donation). The then newly formed Joint Faculty of Intensive Care Medicine, as part of a review of its various training regulations, introduced changes such as recognition of prior learning for overseas trainees and exemption of appropriately qualified overseas trainees from the primary exam, thus facilitating dual training and the introduction of the Overseas Trained Specialist Scheme entry.

These changes successfully resulted in a marked increase in the number of trainees and graduating specialists therefore meeting the increased demand for ICU staff. Between 1979 and April 2006, there were 588 presentations to the final fellowship examination, and between September 2006 and April 2012 there were 656 presentations — an increase of 500% per year. However, not all those junior staff currently working in ICUs are trainees. A survey conducted by the CICM in 2016 revealed that the proportions of CICM trainees, non-CICM trainees and non-trainees were 38%, 28% and 34%, respectively.

A recent review of medical workforce trends across all medical specialties identified intensive care as one of the high growth specialties (defined by a > 100% increase in the number of advanced trainees between 2001–2011).[2] In its recent workforce review, the CICM identified that the trainee–fellow ratio of 0.4 in intensive care is the second highest among all specialties (the ratio is about 0.2 for most specialties).[3]

Historically, trainee numbers have been boosted by the recruitment of overseas trainees and specialists in addition to local graduates. However, currently and into the future, the main driver to trainee numbers will be from a marked increase in the domestic medical student throughput. Medical school graduates per annum have increased nearly threefold from 1300 in 2000 to 3500 in 2012.[2] This increase will continue to have a marked impact on the pre-vocational workforce for the CICM and other medical colleges.

## Expanding curriculum of intensive care training

The CICM introduced major changes to the curriculum in 2014, which have resulted in an extended curriculum (an expansion in all domains of training and introduction of new requirements), with a need for more regular and rigorous assessments. However, the number of C6, C12 and C24 units (old classification) or the G6 and G12 and unrestricted units (new classification), where training is provided, has largely remained the same over the past 5 years, raising

the possibility of a mismatch between the limited resources available for training, on the one hand, and the increasing demand, on the other. It is in this context that the CICM is undertaking a detailed review of its capacity to train and has formed a working group to further explore and attempt to quantify this very important issue.

## Determining capacity to train

This process is complex and will involve:

- widespread stakeholder consultation;
- evaluation of the factors that have an impact on training capacity;
- developing an understanding of what is the minimal experience in all domains a trainee has to obtain, which may require introduction of a trainee logbook; and
- assessment of the demand and growth in ICU services in the future.

## Process and timelines

To assist in an accurate assessment of training capacity, the CICM will consult all stakeholders, including directors of accredited training sites, supervisors of training, trainees, fellows, medical schools, medical colleges and the general public. To commence this process, over the upcoming months, the CICM will conduct a number of surveys of key stakeholders. In addition, we will continue to review other relevant data from the Australian and New Zealand Intensive Care Society and other sources, including sourcing detailed workforce assessments and prediction models. The board of the CICM will collate results and liaise with fellows, trainees, supervisors of training, and regional committees at various fora; a process that is expected to take 18–24 months. The CICM invites all trainees and fellows to be actively involved in this very important and fundamental role of the college.

Overall, we seek to establish what is the capacity to train in the Australian and New Zealand systems, that is, what is the maximum of trainees that will allow adequate or acceptable:

- trainee exposure to quality training time (via assessment of current rostering and staffing structures);
- supervision;
- clinical casemix exposure and volume of practice;
- training resources and rotation availability;
- procedural exposure;
- opportunities to develop communication skills and training in important domains (eg, end of life conversations and organ donation); and
- standardised and rigorous workplace-based and formal assessments.

We are also looking to define and explore:

- the skills and experience expected of current graduates, and whether graduates are meeting the skills required for the practice of specialist intensive care (ie, is the current course meeting expectations or does it require further expansion?);
- potential limits or bottlenecks for trainees (experienced or foreseen in the provision of the new curriculum);
- impressions of the current capacity of units for CICM trainees; and
- impressions of what changes or developments in the specialty might be predicted to limit training capacity in the future.

## Conclusion

The ability of the CICM to maintain a quality, comprehensive and sustainable training program is vital for both current specialists and trainees. The board thanks trainees and fellows in advance for their participation in this process and invites comments and feedback from interested stakeholders. The opinion of our trainees and fellowship on the issue of "capacity to train" is valued by the board and will be integral to any college action to deal with the issue in the future.

## Competing interests

None declared.

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