

# The intensive care medicine workforce in Australia and New Zealand: oversupplied or underdemanded?

Rob Bevan, Balasubramanian Venkatesh and Ross Freebairn

The College of Intensive Care Medicine (CICM) of Australia and New Zealand is the body responsible for training intensive care medicine (ICM) specialists in Australia and New Zealand. ICM training requirements have evolved, culminating in the new CICM curriculum introduced in 2014.<sup>1</sup>

The scope and practice of ICM have also evolved, as seen in the increased size of intensive care units, participation in rapid response teams (RRTs), creation of specialist portfolios in organ donation and an associated evolution of public and professional expectations of what can and should be clinically achieved in a growing and ageing population.<sup>1,2</sup>

Annual ICM trainee registrations have risen in recent years, possibly because of burgeoning medical graduate numbers and an increase in exposure of trainees to ICM. Concerns about the potential saturation of specialist employment opportunities and the prospect of new Fellows being unable to find appropriate employment has brought this workforce problem to the fore.<sup>2,3</sup> Here we will discuss the factors involved and the potential implications for future trainee selection.

## The current workforce

### Trainees and Fellows

Australian and New Zealand medical student numbers have doubled over the past 12 years.<sup>4,5</sup> Career progression for these graduates is uncertain, with more junior doctors seeking specialist training positions than are needed to meet projected growth in specialist services.<sup>6</sup> At the same time, annual CICM trainee registrations reached a peak of 334 in 2013 (Figure 1).

Although the CICM training program has a stated minimum of 6 years, the median time from registration to Fellowship is about 5 years (CICM, unpublished data), because of accreditation of prior learning by the CICM. Figure 2 shows the completion rate (graduation : registration ratio) of each annual cohort of CICM trainees, assuming they graduate as new Fellows 5 years later. For the 12 years of complete data up to 2013, the mean completion rate is only 40%.

### ICM specialist employment trends

The CICM and the Australian and New Zealand Intensive Care Society (ANZICS) each collected employment data in 2013.<sup>3,7</sup> The CICM survey indicated that 80% of new Fellows were employed as ICM specialists, with 70% practising full time. Twenty per cent of Fellows were not

employed in ICM, with one-third of those practising part time reporting an inability to obtain full-time employment.<sup>3</sup>

The ANZICS survey indicated that, although 94% of respondents were working in ICM, 13% were actively seeking employment and 29% were working part-time in another specialty (it is unclear whether this was because of necessity or by choice). Only 14% were working in a regional or rural ICU.<sup>7</sup>

Trends in ICM specialist employment in Australia and New Zealand have previously been published using full-time equivalent (FTE) positions and proportions of CICM Fellows to non-Fellows between 1999–2000 and 2005–06.<sup>8</sup> ICM specialist employment in public ICUs increased in number and proportion over the 6-year period in the 124 ICUs from which we received responses. Level 3 ICUs had the highest proportion of ICM specialist FTE positions (94%), Level 2 ICUs had 61%, and Level 1 comprised only 26% ICM specialists.<sup>8</sup> Although the ratio of CICM Fellows to non-Fellows was increasing, a relatively low proportion were practising in Level 1 and Level 2 ICUs.<sup>8</sup>

In 2009, ANZICS conveyed the concerns of the specialty (that ICM was an unpopular career choice among trainees and ICU specialist shortages would worsen, especially in rural areas) to the Australian government.<sup>9</sup> Two years later, ANZICS encapsulated the uncertainty of workforce planning by commenting that:

it is very hard to predict whether we will have a shortage of specialists, an excess, or perhaps an excess of demand, but not enough beds in which trained specialists can treat appropriate patients.<sup>2</sup>

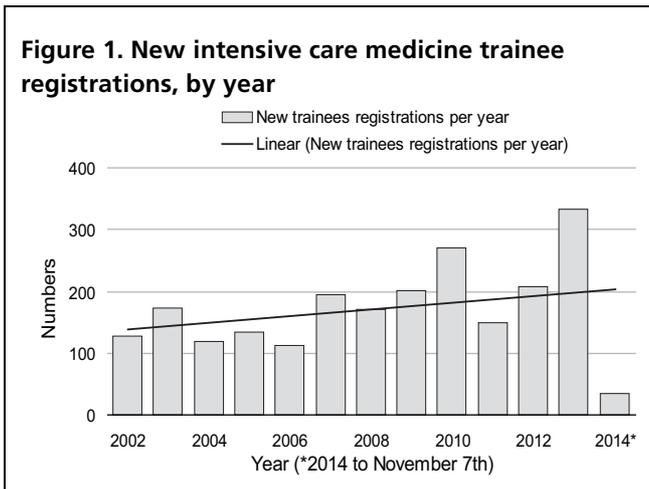
By 2012, CICM submissions to Health Workforce Australia (HWA) specified “an emerging mismatch between new Fellows’ expectations of employment in major metropolitan centres versus the availability of new positions”.<sup>10</sup> However, ICM was categorised as “minimal concern” by HWA because of the lack of a projected shortage of ICM specialists.<sup>10</sup> It could be argued that the perceptions of the workforce problems are discordant between HWA and the ICM community.

## Planning for the future

### Trainees and Fellows

By their nature, medical colleges determine the standards of practitioners who are admitted to practise in that specialty. When acting to select trainees, colleges are deemed to be acting to define how practitioners operate within a competi-

**Figure 1. New intensive care medicine trainee registrations, by year**



tive environment, and effectively have the potential to “restrict trade” in a way that could theoretically be to the public detriment.<sup>11,12</sup> Colleges are therefore governed by competition law; in Australia by the *Competition and Consumer Act 2010*, and in New Zealand by the *Commerce Act 1986*. The relevant regulatory bodies are the Australian Competition and Consumer Commission (ACCC) and the New Zealand Commerce Commission, who maintain that the role of colleges is in education and accreditation, not workforce planning,<sup>11</sup> which is the role of government.

There are legal precedents in which the medical profession has fallen foul of competition law.<sup>11</sup> In 1998, the Royal Australasian College of Surgeons was found by the ACCC

to be in potential breach of the law after perceived unfair training restrictions,<sup>10</sup> and in 2004, the Ophthalmological Society of New Zealand was fined its entire assets when it was deemed to be unfairly limiting “trade”.<sup>12</sup>

The current situation in Australia and New Zealand is that colleges can legally justify accrediting sites or positions based on the nature of the specialty. Colleges that accredit training posts do so based on trainee access to supervisors, equipment and cases. Colleges that accredit sites do so based on explicit criteria (eg, incorporating casemix). The CICM currently operates on the basis that if an ICU meets CICM training standards, all trainees meeting CICM selection criteria should be able to accredit training time.

**Predicting demand for Fellows**

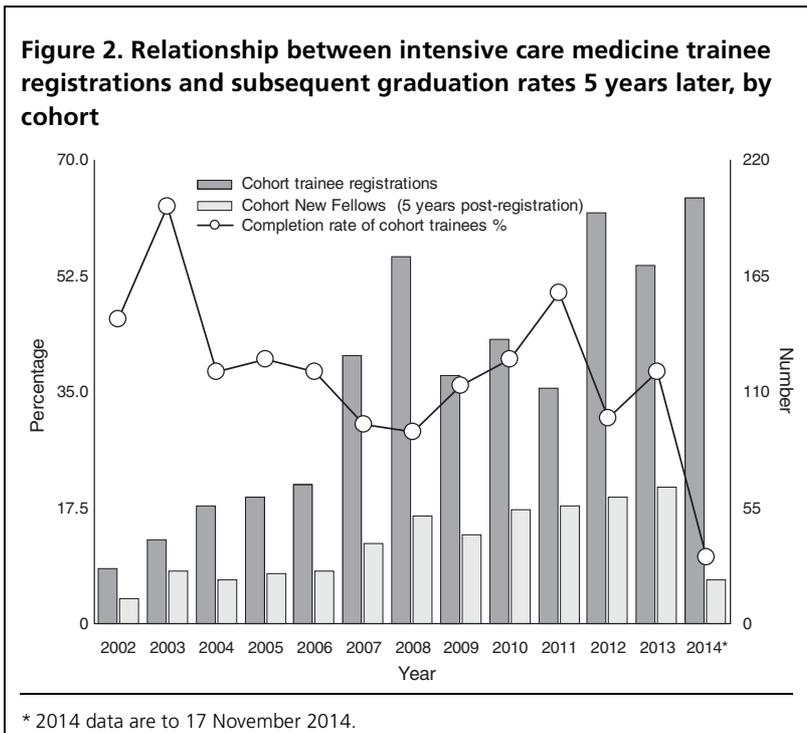
The ANZICS director survey showed a mean demand of 1.3 new positions per ICU over the next 5 years, from which we can predict 100–150 new full-time specialist positions.<sup>7</sup> It has been noted that ICU bed expansions have traditionally been “spasmodic, delayed and lagging demand”,<sup>2</sup> but the emergence of an ageing, population with co-morbidities coupled with increasing ICU admission rates may drive more funded ICU beds.

The trend of increasing CICM Fellow numbers in Level 1 and Level 2 ICUs has been noted.<sup>8</sup> Some have advocated that all Australian and New Zealand ICUs be staffed by CICM Fellows (in-confidence personal communication, CICM Annual Scientific Meeting [ASM], Brisbane, 13–15 June 2014). The CICM has no authority to mandate such employment of its Fellows by employers, and attempts to do so could prove controversial due to the potential for conflict resulting from the overlap in representation between the CICM and ANZICS, and for the potential to compromise rural ICU staffing.

An expansion of RRTs has been advocated and may provide a source of specialist jobs.<sup>2</sup> Judging by the response to the RRT debate at the 2014 CICM ASM, such expansions are not a universally popular development. ICM specialist FTE positions may theoretically be increased by modifying ICU work practices (eg, using “in-house 24/7 intensive care specialist cover”<sup>2</sup> and/or hospital night shift systems<sup>7</sup>); these are also controversial topics.

Finally, there may be an expansion of opportunities overseas, as CICM training is highly regarded internationally.<sup>3</sup> The CICM has established links with international training programs, which could lead to employment opportunities for new Fellows who are able to travel.

**Figure 2. Relationship between intensive care medicine trainee registrations and subsequent graduation rates 5 years later, by cohort**



\* 2014 data are to 17 November 2014.

Notwithstanding the potential for new positions, questions remain about finding adequate employment as ICM specialists for the predicted 200–300 new CICM Fellows created over the next 5 years. Trainees spend years undertaking a demanding training program and often become Fellows after developing strong associations in metropolitan centres. Anxiety and frustration about disruption to a partner's career and children's schooling is understandable. Conversely, new Fellows seeking employment in rural ICUs, only to be told they are less employable than an anaesthetist (in-confidence personal communication), may feel justifiably aggrieved.

### Optimising trainee selection

Although the CICM cannot lawfully directly limit trainee numbers, the result of changing standards may indirectly influence the supply of trainees (Figure 1). Using new trainee registration numbers to estimate the supply stream may be an oversimplification, and the low completion rates and new Fellow numbers arguably give a more informative estimate of supply trends (Figure 2).

### Summary

The wider factors relating to matching the supply and demand for ICM specialists will need ongoing discussion and consultation with other medical and political bodies. A combined CICM–ANZICS Workforce Summit took place in November 2014, with both bodies committed to addressing the problem.

It is envisaged that the role of the CICM will be to:

- continue to mandate the highest standards of training, assessment and site accreditation to produce well trained ICM specialists
- work with ANZICS, specialist colleges and government to advocate for a realistic balance between supply and demand
- collect quality data to quantify the effects of the curriculum changes on trainee registrations and completion rates
- work with ANZICS to quantify the patterns of new Fellow employment
- communicate openly with our Fellows and trainees as these difficult discussions evolve.

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### Competing interests

None declared.

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