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The skills of our New Zealand junior doctors—what are these skills and how do they get them?

Mike Ardagh

In this issue of the *Journal*, Andrew Old, Gill Naden, and Stephen Child present data suggesting first-year postgraduate doctors at Auckland District Health Board do not have the skills expected of them.[1] Are they right? Are first-year postgraduate doctors deficient in their skills, or do we expect too much of them?

Although their paper has limitations, which they concede, most would agree they are correct stating that first-year postgraduate doctors do not have the skills expected of them. Furthermore, as their well-referenced discussion attests, this observation is being made throughout the Western World. Indeed, further evidence from New Zealand, recently published,[2,3] suggests that the resuscitation skills of our new graduates are below that expected. Of concern, some of these new graduates were in positions in New Zealand hospitals where they were the only doctor responding to patients in need of resuscitation.

So, are our new graduates deficient or do we expect too much or them? Perhaps, as Old, Naden, and Child suggest, both are contributing. If this is so, then two further questions arise. First, how do we define what skills are expected of our new graduates? And, second, how do we ensure they achieve these expectations?

Skill acquisition is a continuum, with steps variously described—but usually including an initial gaining of appropriate knowledge of the skill; and including its context, purpose, indications, and so on. Steps of psychomotor mastering of the skill then follow. Often (although perhaps less than in the past) these steps consist of seeing it done in a real clinical context, doing it with or without supervision, and then helping junior colleagues through the same experience—the infamous ‘see one, do one, teach one’ approach.

Most recognise that using the patient as the substrate in this somewhat serendipitous, poorly structured, and variably supervised approach is bad medicine. Instead, we should add the steps of ‘seeing’ and ‘doing’ in a simulated context, with mastery in this environment before attempts begin on patients. Then, with decreasing supervision and greater independence, the skill is practised in the clinical environment, culminating in independent mastery and a genuine ability to be a teacher. To complete this process, formal credentialling of the doctor should be recognised as essential, with the implication that those who are not credentialled in the skill should not be doing it.

In the context of a continuum, the indicative skills list published by the Medical Council of New Zealand (MCNZ) cannot be considered to be a curriculum for the first postgraduate year (indeed the handbook in which the list is published explains that many will not be acquired until after the first year), but instead it might suffice as a list of the sort of armamentarium of skills junior doctors may carry as they go to perform their duties. The acquisition of this armamentarium, with each of its

components following a continuum of mastery, extends through the undergraduate medical curriculum and beyond the first postgraduate year.

Old, Naden, and Child recommend that MCNZ revise the list of skills expected of new doctors. Any such revision should include:

- The level of mastery expected (know the skill, mastered in the skills lab, credentialled to do it with patients under supervision, credentialled for independent performance, and so on);
- When (in the continuum) each stage of mastery is expected to be acquired;
- How the continuum of skills acquisition is integrated across at least three different education jurisdictions (undergraduate, first two postgraduate years, and vocational training); and
- How junior doctors and their patients are protected from expectations exceeding ability.

Many may respond to this suggestion by saying that the deficiency of skills of junior doctors is a recent phenomenon and is a consequence of senior medical students and junior doctors not seeing enough patients, and, in particular, not seeing them early and taking a significant role in their management.

There may be some truth in this, although those with both insight and sound recollection would recognise that there has always been at least a covert deficiency of skills. However, it is true that skills labs and protected teaching time cannot replace real clinical experience. This is true for at least a couple of reasons.

First, expert performance of a skill requires an expert appreciation of how it fits into the context of a patient's care. For example, endotracheal intubation in a resuscitation requires an appreciation of when it is needed, when it shouldn't be done, what are the characteristics of this patient which might influence likelihood of success, what else needs to be done to make it happen, what the patient wants, what might happen as a complication of the procedure, how these might be dealt with, what happens afterwards, and so on. (This more complete acquisition of the skill might not be attained, however, if acquisition is a consequence of training on a manikin and then as part of an elective general anaesthetic list.)

Second, real clinical experience is important as perhaps the most important skills the junior doctor should have in their armamentarium are interpretation and decision-making skills.

Let's take endotracheal intubation again as an example. This is a skill that:

- A reasonably evolved primate can be trained to do;
- Is usually obviously needed when it is needed; and
- If needed, help is usually mobilised quickly to perform it.

As far as can be ascertained, newly graduated doctors have never had to explain themselves to a coroner for not being able to intubate a patient, get a drip in, or suture a wound. However, there are many instances of junior doctors having to explain why they did not recognise the early signs of significant illness and did not make the decisions required to protect the patient from harm.

While it is usually apparent when an intravenous cannula is not being successfully inserted, it is less apparent to the junior doctor when their interpretation or decision-making skills are letting them down. These skills are less reliably acquired by the structured continuum suggested above. Instead, they are traditionally (and probably best) acquired by seeing patients with undifferentiated presentations; exercising interpretation of signs, symptoms and investigations; and exercising decision-making regarding further investigations, treatment, referral, or discharge. All this while under direct supervision and with real-time feedback.

Unfortunately, undergraduate clinical education is still largely reliant on ward-based exposure to a selected group of differentiated patients where the sort of experience suggested above is uncommon. Furthermore, our newly graduated doctors seldom see patients in their early undifferentiated state. Even when they do have a chance to use their interpretation and decision-making skills, formative feedback often is divorced from the experience due to service demands of the more senior members of the team, or due to rostering constraints fragmenting the relationships of the junior doctors with their potential mentors.

So it is probably true that first-year postgraduate doctors do not have the skills expected of them, and it is probably true that this is a consequence of both skills deficiency and of expectations which are too high. But does it matter? The most obvious and most concerning consequence is that patients will suffer. A second likely consequence is impaired efficiency in the performance of the task.

So, closing the gap between ability and expectations should improve patient safety and efficiency. However there are likely to be other, perhaps less tangible, consequences. Indeed, for the junior doctors, any degree of awareness of the gap between their abilities and the expectations of them must provoke anxiety and impair confidence. Finally, if this gap is not declared to the patient, then deception taints the doctor-patient relationship. Therefore, having junior doctors who do not have the skills expected of them is unsafe, inefficient, destructive, and unethical.

So how do we ensure our newly graduated doctor has the appropriate armamentarium of skills?

- First, the list of skills and the level of mastery of them should be defined. Furthermore, the list needs to be integrated through medical undergraduate and postgraduate education. In this country, the MCNZ, and specifically its education committee, is the body most appropriate to do this.
- Second, resources need to be allocated for the early stages of acquisition of skills (skills labs, equipment, people and time) as well as the structure for acquisition and credentialling. This should be a priority for the two medical schools (Auckland and Otago) and our District Health Boards.
- Third, medical students and junior doctors need experience of patient management, and particularly of undifferentiated patients, so that they can exercise interpretation and decision-making skills. However, they need this experience under supervision, so that they and their patients are protected, and with real-time feedback so that the experience is genuinely formative. This is achievable by taking advantage of the rich educational potential of emergency

departments, and the enthusiasm of our many young emergency medicine specialists.

For students and newly graduated doctors to access this type of experience requires commitment from the medical schools, MCNZ, and District Health Boards.

Author information: Mike Ardagh, Professor of Emergency Medicine, Christchurch School of Medicine and Health Sciences, University of Otago, Christchurch

Correspondence: Professor Michael Ardagh, Emergency Department, Christchurch Hospital, Private Bag 4710, Christchurch. Fax: (03) 364 0286; email: michael.ardagh@cdhb.govt.nz

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