

Consultation paper

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AMC competence-based medical education working group

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observers have noted that this tendency towards finely grained training can leave a student technically satisfied. VI\|LQJ DOO WKH UHTXLUHPHQWV IRU D TXDOLILFDWLRQ FRRUGLQDWHG¶ 7R LOOXVWUDWH WKLV FRQVLGHU WKH FDVH appendicitis in a patient with abdominal pain, shown later in this paper (see page 14).

In Australia, significant reports and reviews on the health sector over the last five years (Productivity Commission 2005; DPMC 2008; DoHA 2009; Preventative Health Taskforce 2009; NHHRC 2009) have described pressures for reform of the health care system stemming from factors such as consumer expectations for safe and high quality health care (particularly with the emergence of e-health), changes in the models of care, pressures for health care to be cost effective, increased rates of chronic disease, pressures on hospitals to reduce both the number of admissions and the time spent in hospitals, greater equity of access to primary health care, renewed focus on prevention, changes which technological advances impose on how care is delivered, the distribution of health care practitioners and closing the gap between the health of Indigenous Australians and non-Indigenous Australians.

A further key element is the ageing population in Australia and the ageing of the health workforce. In its report *Working the Ageing Workforce*, the Australian Institute of Health and Welfare (AIHW) notes that 13% of the Australian population is aged 65 years and over, compared to 8.4% in 1956. For the medical profession, the AIHW estimates that in 2006, there were 21% of general practitioners and 26% of medical specialists aged 55 and over. Concurrently, the working hours and patterns of work for doctors of all ages are changing (AIHW 2008), leading to a demand for more doctors to be trained and for training time to be reduced. Faced with greater consumer expectations for safe and high quality care, and increased government expenditure on health care, governments are also keen to increase accountability in the health care system.

A consistent theme in the response to these challenges is to explore the development of a more flexible, multi-disciplinary and team-based approach to health care either by developing new roles such as physician assistants or by expanding existing roles such as nurse practitioners (DPMC 2008). This in turn challenges traditional health roles, skills definitions and models of care and leads to increased blurring of the roles of health professionals. The nature of these boundaries and of this blurring varies somewhat due to demands of geography or specific service tasks.

All these pressures lead to increased demands on the health workforce to deliver safe, high quality cost effective care in a range of settings in urban, rural and remote areas of Australia, for clarity about how we know that this level of care is being delivered, and for an assurance that new graduates are equipped to perform in the health care environment on graduation and into the future. Increasingly, a competency-based approach is seen as a possible solution and one that might offer a reduced training time.

In health professional education, the concept of competency itself is complex and ill-defined because of varying contextual factors and philosophical approaches. An understanding of competency is further compounded by ad hoc use of terminology (Albanese et al. 2008). In

Competency: An observable ability of a health professional, integrating multiple components such as knowledge, skills, values, and attitudes. Since competencies are observable, they can be measured and assessed to ensure acquisition by a professional. Competencies can be assembled like building blocks to facilitate progressive development. (Frank et al. 2010)

Competence: The array of abilities across multiple domains or aspects of physician performance in a certain context. Statements about competence require descriptive qualifiers to define the relevant abilities, context, and stage of training. Competence is multidimensional, dynamic and changes with time, experience, and setting. (Frank et al. 2010)

Progression of competence: For each aspect or domain of competence, the spectrum of ability from novice to mastery. The goal of medical education is to facilitate the development of a physician to the level of ability required for optimal practice in each domain. At any given point in time, and in a given context, an individual physician will reflect greater or lesser ability in each domain. (Frank et al. 2010)

Competent: Possessing the required abilities in all domains in a certain context at a defined stage of medical education or practice. (Frank et al. 2010)

Incompetent: Lacking the required abilities in all domains in a certain context at a defined stage of medical education or practice. (Frank et al. 2010)

Performance: What a doctor actually does in practice.

In medical education

The creation of competencies may also be regarded as an effort by professions to define
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resources are limited and professions seek to demonstrate their unique roles in order to

This view is almost diametrically opposed to others from the USA (Huddle and Huedebert 2007) who rebut the insistence of the ACGME on competency frameworks and their assessment through rigorous observation because:

We will argue that the measurable bits of performance that follow from anatomizing clinical competence according to discrete learning objectives do not and cannot add back together to constitute the skill and ability of the competent physician. (p. 537)

The strategy of combining multiple competencies in any performance (e.g. work-based assessment) or outcome is suggested by ten Cate and Scheele (2007) to obviate the restrictions imposed by anatomising (micro-measurement of) competencies (Huddle and Huedebert 2007). This may be because this combination is readily seen by experienced professionals to add value to the information contained therein. It may be more than or different from the sum of its parts. And, even when those parts may evidence individual

(i) 8QGHUVWDQGLQJ WKH GRFWRU¶V UROH DQG WKH GHYH

Any recommendation on the place of a competence-based approach in medical education including a focus on what doctors do in practice. It should acknowledge the education, training and experience required to build the necessary breadth and depth of knowledge and expertise. The role of a medical or other health professional is complex and includes individual and societal responsibility, decision-making in ambiguous situations, dealing with uncertainty and the development of personal attributes required across the continuum of training.

De Cossart and Fish (2005), in considering professionalism within the discipline of surgery, describes two views of professionalism: the Technical Rational view and the Professional Artistry view. The latter view emphasises that professionals exercise their own judgement about their actions and are then morally accountable for those actions. This view aligns with the Aristotelian view of medicine as neither an art, nor a science, but a combination of these

- ‡ the intellectual skills and grasp of scientific concepts required;
- ‡ the ability to make decisions in the face of ambiguity and uncertainty and take responsibility for those decisions; and
- ‡ work effectively as members of health care teams.

Doctors respond to societal needs. The BMA Health Policy and Economic Research Unit (2008, p. 5) stated on the role of the doctor:

The role of the doctor is intimately linked to social attitudes and norms. The professional status of doctors carries with it a recognition that doctors have a contract with society. As their practice in response to societal expectations as well as the advance of science. Most recently, this evolving relationship with society has been driven by a number of particular social trends which in combination have determined a significant shift in expectations, behaviour and practice amongst sizeable sections of the population.

To meet the demands of their role in the health care team, doctors must excel in a broad range of skills including cognitive and affective domains (Rikers and Verkoeijen 2007). Dhaliwal (2009), in discussing the complexity of defining expertise in medicine, suggested:

Each highly regarded doctor excels to different degrees in knowledge, diagnostic skills, procedural competency, management decisions, communication skills, bedside manner and ethical conduct.

Expertise develops with education and training and evolves and changes in an individual in different contexts and environments. Considerable research has been conducted on how expertise develops from a novice to an expert and this research provides insight into the appropriate educational model for medicine.

It is recognised that doctors use different forms of reasoning at different stages of their signs and symptoms and to then formulate hypotheses. Here, reasoning occurs from evidence identified forward to a diagnosis. With the progression to being expert, a doctor can reason through a case by comparing the observed symptoms with cases encountered in the past (Norman et al. 2007; Eva 2004). This progression from novice to expert takes time, experience and the understanding and assimilation of numerous exemplars (Moulton et al. 2007).

Learning to support the development of any professional expertise involves learning in the workplace, either as a student in a placement or, in the example of medicine, continuing during vocational training as an employee. A number of theories exist about how people learn, many of which are based on a notion of learning as an active rather than a passive process, which requires both time and experience. Situated Learning Theory proposes that knowledge needs to be presented to learners in authentic contexts and that social engagement and collaboration are important aspects to learning. This theory proposes that

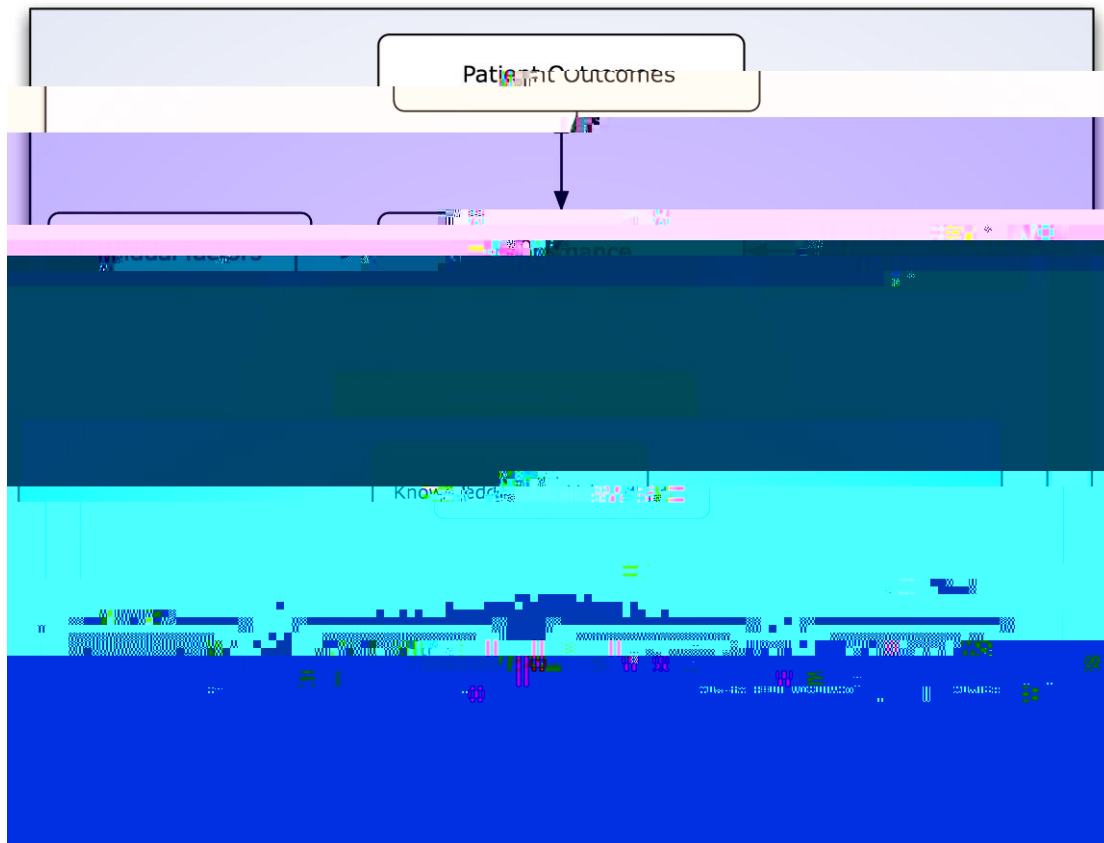
HQJDJLQJ ZLWKLQ D μFRPPXQLW Learning (UdF and Vrhger 1990B) YshQTW2 (D)

proposed by Dreyfus and Dreyfus (1986) describes the path from novice to expert as involving the intermediate stages of advanced beginner, competent and proficient. At the start of this progression, a learner may initially depend on taught rules. Through the progression to expert, situational understanding develops and intuitive decision-making

dealing with uncertainty. Time is an important element here, as the multiple experiences and the reflection required to build tacit knowledge cannot occur without the time dimension.

The final framework, including all of the elements, is shown in Figure 2 below. This figure is designed to show the basic relationship between the conceptual elements and is not all of the elements shown in the figure is recognised and it does not attempt to show all of these interactions.

Figure 2: Conceptual Framework for Competence-Based Medical Education



Key concepts of this framework are:

- ‡ Overall competence is built on the accumulation of both codified and tacit knowledge;
- ‡ The development of tacit knowledge is dependent on the quality of the learning; experience and on the opportunities for feedback and reflection;
- ‡ Observed performance reflects underlying competence;
- ‡ Observed performance goes beyond preparedness and takes into account case specifics;
- ‡ Individual circumstances and system factors can, and do, influence performance; and
- ‡ Over time, tacit knowledge can lead to performance improvement, subject to the influence of individual circumstances and system factors, and eventually lead to the development of more codified knowledge.

For more experienced practitioners, therefore, observed performance reflects more than just a complex clinical problem (de Cossart and Fish 2005, p. 137). The actions taken reflect a

professional judgement of what is best, given the specific circumstance of the case. Performance can also be influenced by system factors, and individual practitioner factors that are overlaid on underlying competence (de Cossart and Fish 2005, p 137). For example, a doctor may perform differently when sleep deprived than when well rested.

A broad competency-based approach to medical education has been in operation in Australia since 2000 in a number of Specialist Colleges who have adopted and modified the CanMEDS model to underpin their training programs. To date these models have followed a high-level, coarse-grained approach to defining competencies and have avoided the descent into the tick-box approach to the assessment of competencies that have characterised a number of the previous attempts to implement competency based training and assessment in medical education.

A number of models of the competency based training that have been developed overseas, such as the 2003 Modernising Medical Careers approach in the UK (Tooke 2008) and the Accreditation Council for Graduate Medical Education competencies project in the US, have

individuals learn at different rates and that, within a model of education based solely on

gained in the time available. Time invested specifically to facilitate wide exposure to, and experience with, complexity is likely to show a good rate of return.

As indicated in this paper, defined competencies clearly have an important role to play in medical education, especially in training for procedural areas such as endoscopy, maternity services and surgery. However, conceptualising medical education as based entirely on obtaining competencies will at best be partial. There

AIHW ² see Australian Institute of Health and Welfare.

AMC ² see Australian Medical Council.

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DoHA ² see Department of Health and Ageing.

DPMC ² see Department of the Prime Minister and Cabinet.

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