

PREHOSPITAL CARE

Competence in prehospital care: evolving concepts

R Clements, R Mackenzie



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Competence based training and assessment has become central to education and training for healthcare professionals. There continues to be uncertainty about the meaning of competence and how the principles underpinning competence based training and assessment can be applied to evolving subspecialty and multidisciplinary areas such as prehospital care. Considerable development work has been undertaken on a national level with the creation of a Competence Framework for Emergency Care. This article explores the concepts of competence, defines the terminology, and describes the role of a competence framework in education and training.

Competence based training and assessment has become central to education and training for healthcare professionals.^{1–3} There is, however, some uncertainty about the concept of competence and how the principles underpinning competence based training and assessment can be applied to evolving subspecialty and multidisciplinary areas such as prehospital and retrieval medicine.⁴

DEFINITION OF COMPETENCE

Competence can be simply defined as the ability to operate to an adequate, safe standard. Synonymous terms include sufficient, suitable, capable, legally qualified and fit for purpose. In the UK, organisations involved in vocational or work based training have historically led the development of occupational standards to describe what competent staff are expected to be able to do. They define competence as the ability to apply knowledge, understanding, and skills in performing to the standards required by an employer.⁵ This link between competence and employment does not sit comfortably with many healthcare professionals. Doctors are often dismissive of the view that competence in work tasks or roles should be at least as important as academic knowledge and understanding—despite the recognition that traditional academic training often fails to bridge the gap between assimilation of knowledge and its practical application. More holistic definitions of competence applied to medical practice have therefore been developed. One characterises professional competence as: “the habitual and judicious use of knowledge, technical skills, attitudes and reflection in the context of everyday practice”.⁶ Whichever definition is chosen, competence remains fundamentally related to occupational roles and the operational level of expertise expected of the individual practitioner.

Achievement of competence requires demonstration of a defined range of underpinning knowledge, psychomotor skills, and behavioural attributes. The British Medical Association, Department of Health, and the General Medical Council (GMC) have widely embraced these concepts. As a result, the evolving curricula for undergraduate and postgraduate education now reflect the need to develop and demonstrate competence.^{1–7–10}

GENERIC AND ROLE SPECIFIC COMPETENCE

The GMC, Health Professionals Council, and the Nursing and Midwifery Council are the regulatory bodies responsible for setting and maintaining standards of professional training, performance and conduct for doctors, paramedics, and nurses. They share common values,^{8–11–13} and these values are perhaps most clearly summarised by the GMC’s seven attributes of professional competence.⁸ Competent practitioners are described as those who demonstrate *good clinical care*, *maintain good medical practice*, are professional in their *relationships with patients and colleagues*, apply themselves properly to *teaching and training*, are *honest*, are aware of their own *health needs* and responsibilities, and have high standards of *probity*. These attributes of professional competence can all be described as “generic”—they are expected of all medical practitioners regardless of their working environment.

Specialist practitioners are expected to demonstrate a range of additional competences which are specific to their role. In many ways, it may appear easier to define the specific knowledge, skills, and attitudes related to a specialist role or function. However it is clear that there is considerable work to be done to create competences that comfortably span both the generic and role specific attributes of specialist practice. For many specialties, including emergency medicine, role specific competences which reflect a clear understanding of the activities and expertise required of the practitioner remain to be fully defined.¹⁴ Once they are defined, questions concerning how the generic and role specific competences can be developed into a competence based training and assessment programme remain.

COMPETENCE BASED CURRICULA AND FRAMEWORKS

A curriculum generally refers to an educational plan or way in which subject areas within a syllabus are taught over a period of time. In recent guidance,¹⁵ the Post Graduate Medical Education and Training Board (PMETB) broadly defined a curriculum as a

statement of the intended aims and objectives, content, experiences, outcomes and processes of an educational programme which includes a description of the training structure and the intended methods of learning, teaching, assessment, feedback and supervision.

This type of curriculum defines the entire educational programme and clearly differs from the traditional syllabus style list of things to know.

Competence frameworks describe the range of work activities needed to deliver a service. They represent a set of

Abbreviations: CFEC, Competence Framework for Emergency Care; GMC, General Medical Council; IBTICM, Intercollegiate Board for Training in Intensive Care Medicine; PMETB, Post Graduate Medical Education and Training Board; RCA, Royal College of Anaesthetists

Box 1: Applications of competence frameworks

- Designing training programmes and qualifications
- Undertaking appraisal and personal development planning
- Defining and redesigning roles
- Undertaking skills audits and skill mix reviews
- Commissioning education and training
- Workforce and team development

statements defining what practitioners or teams need to know and be able to do to deliver that service. The framework also defines the expected outcomes of training and education programmes and the performance criteria associated with high quality and safe care. Although competence frameworks have a wide range of applications (box 1), they clearly relate to the wider curriculum concept described by PMETB.

The Intercollegiate Board for Training in Intensive Care Medicine (IBTICM) and the Royal College of Anaesthetists (RCA) were perhaps the first to convert their specialist syllabuses into competence frameworks.^{16 17} These frameworks describe the knowledge, skills, and attitudes expected of doctors at various stages of their training in anaesthesia or intensive care medicine and explain how competence to practise is determined and measured. The frameworks clearly divide the work of the specialist into specific themes or areas of activity (box 2). Across the spectrum of medical education and training, universities, Royal Colleges, faculties, and training committees are now making considerable efforts to translate their traditional topic lists or syllabuses into clearly defined competence based curricula or frameworks with generic and role specific elements.¹⁸

The most detailed competency framework relevant to prehospital and emergency care is, however, the evolving national workforce Competence Framework for Emergency Care (CFEC).¹⁹ This major project was commissioned by the Department of Health and is being developed by Skills for Health, the Sector Skills Council for Health in the UK. The aim of Skills for Health is to develop a comprehensive set of UK-wide competences for the health sector that can also be recognised as National Occupational Standards and grouped together to form national qualification frameworks.^{20 21} Within the National Health Service (NHS), Skills for Health competences will also be linked to the Knowledge and Skills Framework of the Agenda for Change pay modernisation process.

The CFEC aims to cover the whole spectrum of emergency healthcare and be relevant to the education, training and practice of all groups and grades of healthcare staff. As a consequence, the framework contains a mixture of generic and role specific elements which range from the most basic to the more advanced. The CFEC aims to be sufficiently detailed to accommodate the full range of competences required by a specialist in any discipline, including the activities involved in prehospital and retrieval medicine. It also aims to incorporate existing and evolving competence frameworks.

As the CFEC has developed, it has maintained a defined structure which is currently based on 10 areas, roles, or themes related to emergency care (box 3). Contrasting these with the IBTICM (box 2) reveals a fundamental difference in approach. Arguably, most of the IBTICM themes would be encompassed by theme D of the CFEC framework (provide specialist emergency intervention/treatment/care). Grouped within each role or *theme* are the core activities required to fulfil that role. These activities are generally described as *units*

Box 2: Competency themes in intensive care medicine

- Resuscitation and initial stabilisation
- Clinical assessment
- Investigation, data interpretation, and diagnosis
- Organ system support and related practical procedures
- Monitoring and clinical measurement
- Safe use of equipment
- Specific circumstances (covering general medical conditions, perioperative care, trauma and burns, paediatric care, obstetric care, transport care, sepsis and infection control, and comfort care).
- Pre and post intensive unit care
- End-of-life care
- Professionalism
- Sciences (knowledge competences related to anatomy, physiology and biochemistry, pharmacology, physics, and clinical measurement and research methods)

Each theme has an overview followed by a list of knowledge, skills, attitudinal and behavioural elements and workplace training objectives relevant to the basic, intermediate, or advanced level.

in the CFEC framework. Within each unit are listed the individual *elements* of knowledge, skills, attitudes, and behaviour—sometimes referred to as descriptors or competences. In the completed framework, each of these elements is related to explicit performance criteria (sometimes referred

Box 3: Skills for Health competency themes for emergency care

Each theme comprises a number of units which describe related workplace activities. Each unit has a commentary which describes the context in which the activity may be carried out, defines key words and concepts, and lists the elements of competence. Within each element there are a number of performance criteria, or statements of what practitioners need to do if they are to perform this activity competently (in terms of knowledge, skills, attitudes, and behaviours). Responding proactively to healthcare emergencies involves the requirement to:

- Assess, prioritise, and direct individuals presenting for emergency assistance
- Investigate and determine individual's health status and needs in relation to emergency assistance
- Assess individual's needs for emergency care
- Provide specialist emergency intervention/treatment/care
- Support and empower users of emergency services
- Obtain and use information to promote and protect health
- Work within an ethical framework
- Work with others to ensure effective service provision
- Coordinate and control emergency service provision
- Protect the health, safety, and security of service users and practitioners

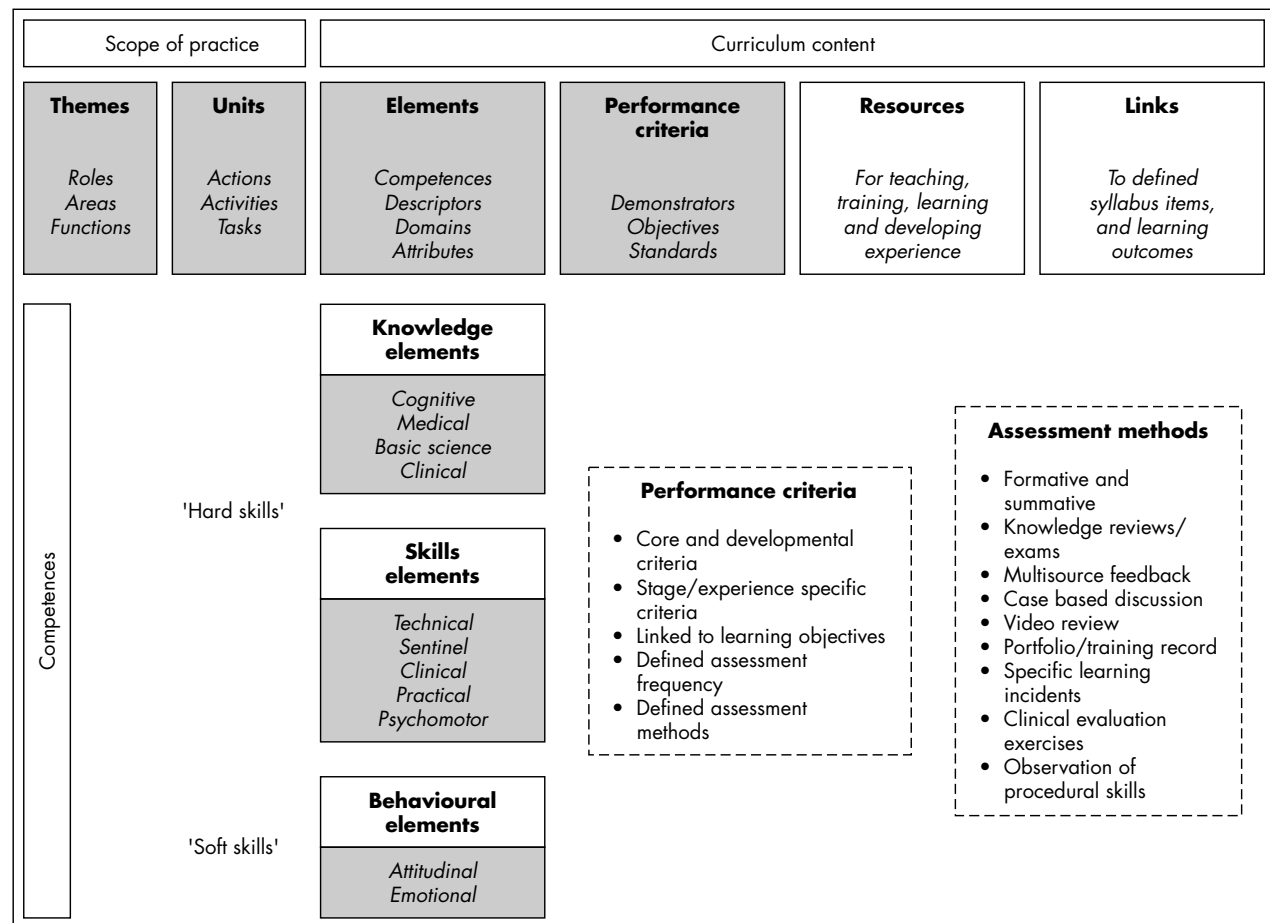


Figure 1 Schematic diagram of the components of a competence framework. Terms which are often used synonymously are grouped together within the shaded boxes.

to as demonstrators or standards). The criteria can also be linked to learning objectives and be related to the level or stage of development, assessment techniques, and resources for learning. Figure 1 provides a schematic illustration of a generic competence framework structure and also reveals the plethora of terms currently used to describe the components.

The first step towards defining a competence framework for a discipline such as prehospital and retrieval medicine is to clarify the work roles. There has been much recent discussion surrounding these roles and consensus must be reached before real progress can be made.⁴ From this position, the themes, units and elements can then be drawn from existing frameworks such as those produced by the RCA, IBTICM, and CFEC or developed from the syllabuses of the Faculty of Pre-hospital Care and Faculty of Accident and Emergency Medicine. Some may have to be developed de novo. Nonetheless, it should be possible to construct a detailed competence framework which, when used as the basis for education and training programmes, will produce an individual with the required knowledge, skills, and attitudes at the required level of performance.²²

OBJECTIONS TO THE COMPETENCE BASED APPROACH

The principal criticisms of this approach to medical education, training, and assessment are that competence and performance are not the same and that competence reflects a minimum rather than excellent standard.^{23–26} In other words, competence is necessary, but not sufficient, to guarantee

performance and healthcare providers should aspire to high rather than minimum standards. These criticisms can be easily addressed by the inclusion of generic competences within the framework and by ensuring that performance criteria for role specific competences represent high quality care. With regard to performance (what is actually done in practice), it would be a straightforward task for those undertaking continuous professional development, appraisal, and revalidation to identify the relevant performance criteria from an established competence framework and ensure that their practice always met or exceeded defined standards for their level of experience.

Other criticisms include a perception that a competence framework reduces, diminishes or undervalues traditional academic endeavour. However, it is not clear why this should be the case. The content and format of the framework can be designed so that appropriate relevant academic activities in terms of underpinning knowledge, problem solving, and research skills are recognised. Taken as a fully integrated whole the competence framework should provide a practitioner, who fulfils all of the performance criteria, with the knowledge, skills, and behaviour to act with autonomy and authority and to make complex decisions.

SUMMARY

The National Clinical Director for Emergency Access has emphasised the key role of competence frameworks across the spectrum of emergency care reform.²⁰ Competence in the medical workplace is here to stay. A great deal of work is

underway to define the knowledge, skills, and behaviours applicable to emergency medicine and to further develop the competence frameworks introduced by Skills for Health, the RCA, the IBTICM, and others.

The development of a competence framework applicable to prehospital and retrieval medicine is an essential and inevitable requirement for the progression of the specialty. Prehospital practitioners should take the opportunity to contribute to the CFEC and help develop a robust competence framework for education, training, and assessment which directly reflects the need of our patients.

Authors' affiliations

R Clements, Specialist Registrar in Accident and Emergency Medicine and Immediate Care, Royal London Hospital, London, UK. Doctor, MAGPAS

R Mackenzie, Clinical Research Fellow in Pre-hospital and Retrieval Medicine, MAGPAS

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Correspondence to: R Mackenzie, MAGPAS, 105 Needingworth Road, St Ives, Cambs PE27 5WF, UK; info@magpas.org.uk

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REFERENCES

- 1 **UK Health Departments**. *Modernising medical careers: the next steps. The future shape of Foundation, Specialist and General Practice Training Programmes*. London: Department of Health and others, April, 2004.
- 2 **Health Professions Council**. *Standards of Education and Training*. London: HPC, 2004.
- 3 **Southgate L**, Grant J. Principles for an assessment system for postgraduate medical training. A working paper from the Postgraduate Medical Education Training Board. London: PMETB, 2004.
- 4 **Mackenzie R**, Bevan D. A license to practise pre-hospital and retrieval medicine. *Emerg Med J* 2005;**22**:286–93.
- 5 **Qualifications and Curriculum Authority**. 14–19 learning. Available at www.qca.org.uk/14-19/qualifications/index_nvqs.htm (accessed 27 March 2005).
- 6 **Epstein RM**, Hundert EM. Defining and assessing professional competence. *JAMA* 2002;**287**:226–85.
- 7 **General Medical Council**. *The New Doctor: Recommendations on General Clinical Training*. London: GMC, 2005.
- 8 **Academy of Medical Royal Colleges**. *Curriculum for the Foundation Years in Postgraduate Education and Training. A paper for consultation*. London: Modernising Medical Careers Implementation Group, 2004.
- 9 **General Medical Council**. *Tomorrow's doctors: Recommendations on undergraduate medical training*. London: GMC, 2003.
- 10 **British Medical Association**. *The shape of specialist training: aspirations for seamless progression*. London: BMA, 2005.
- 11 **Health Professions Council**. *Standards of Proficiency: Paramedics*. London: HPC, 2003.
- 12 **Health Professions Council**. *Standards of Conduct, Performance and Ethics*. London: HPC, 2003.
- 13 **Nursing and Midwifery Council**. *The NMC Code of professional conduct: standards for conduct, performance and ethics*. London: NMC, 2004.
- 14 **Faculty of Accident and Emergency Medicine**. *Curriculum for Higher Specialist Training in Accident and Emergency Medicine (Interim)*. London: Faculty of Accident and Emergency Medicine, 2001.
- 15 **Postgraduate Medical Education and Training Board**. *What is Curriculum?* London: PMETB, 2004.
- 16 **The Intercollegiate Board for Training in Intensive Care Medicine**. The CCST in Intensive Care Medicine. Competency-Based Training and Assessment. Part 1: A reference manual for trainees and trainers (available at www.ibticm.org).
- 17 **Royal College of Anaesthetists**. The CCST in Anaesthesia. I: General Principles. A manual for trainees and trainers (available at www.rcoa.ac.uk/docs/ccstptied2.pdf).
- 18 **Wooding K**, Maxted M, Owen H. *Baseline analysis and scoping study on Postgraduate Medical Education and Training in the UK: Report to the PMETB Curriculum Sub-Committee*. London: PMETB, 2004.
- 19 **Skills for Health**. *Emergency Care National Workforce Competence Framework Guide*. Bristol: Skills for Health, 2004.
- 20 **Skills for Health**. *Information Briefing No. 1. What are National Occupational Standards?* Bristol: Skills for Health, 2003.
- 21 **Skills for Health**. *Information briefing No. 3. Introduction to National Vocational Qualifications and their uses*. Bristol: Skills for Health, 2003.
- 22 **Shumway JM**, Harden RM. AMEE Education Guide No 25: The assessment of learning outcomes for the competent and reflective physician. *Med Teach* 2003;**25**:569–84.
- 23 **Talbot M**. Monkey see, monkey do: a critique of the competency model in graduate medical education. *Med Educ* 2004;**38**:587–92.
- 24 **Rees CE**. The problem with outcome-based curricula in medical education: Insights from educational theory. *Med Educ* 2004;**38**:593–8.
- 25 **Grant J**. The incapacitating effects of competence: a critique. *J Health Sci Educ* 2000;**4**:271–7.
- 26 **Eraut M**. *Developing professional knowledge and competence*. London: Falmer Press, 1994.