Freedom and discipline: clinical practice and the assessment of clinical competence

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Introduction

THIS paper describes the journey that every doctor must make in order to reach and maintain his or her full potential as an independent practitioner. The focus will be the assessments which mark our progress and the ways in which they can enable clinical freedom to be equated with clinical judgement rather than licence.

James Mackenzie, who began to study medicine in Edinburgh in 1874 at the age of 20 years, shared many of the same experiences despite the differences in the clinical practice of the day. He held strong views on examinations and medical education and I intend to quote them from time to time: he was a great man and I want his words to speak to us directly.

Definition of clinical competence

We begin with a working definition of clinical competence which has its roots in the third Cambridge conference on assessment in medical education held in 1987 and which was further developed at the fourth Cambridge conference in 1989.[1] Considerable effort had already been expended in attempting to define the professional skills and knowledge required for the demonstration of competence.[2] However, the definition which follows also includes the moral and personality attributes which are important components of competence, but which had received less attention. They are however, highly valued by society although they are infrequently assessed. Groups which have attempted to name the humanistic qualities that characterize competence have invariably reported difficulty in their precise definition: nevertheless there has long been widespread agreement that it is important to try.[3-5] The definition of clinical competence is highly context bound, and the role of doctors in the societies in which they will ultimately practise should determine the professional behaviour that they will be expected to demonstrate. This assertion has profound implications for the relationship of the profession to society and the state, and for the participation of the community and the state in defining and assessing clinical competence.

I propose that competence is composed of cognitive and interpersonal skills, and moral and personality attributes. It is in part the ability, in part the will, to select and perform consistently, relevant clinical tasks in the context of the social environment in order to resolve health problems of individuals and groups in an efficient, effective, economic and humane manner.

There are two major components of competence. First, the consistent ability to select and perform tasks employing intellectual, psychomotor and interpersonal skills, and secondly, the consistent demonstration of appropriate moral and personality attributes.

The tasks from which a competent clinician will select are subsumed within the following list of functions:

- to deliver curative and rehabilitative care;
- to promote health;
- to organize preventive activities;
- to plan, organize and evaluate health education activities;
- to collaborate with other agents of community development;
- to participate in research;
- to manage his or her services/resources;
- to learn with, teach and train other members of the health care team;
- to participate in and sometimes to lead the health care team;
- to engage in self-directed learning;
- to engage in self-evaluation and quality assurance.

The importance of each function varies with the context and the clinical discipline of the doctor, but all of them are relevant to modern general practice.

Turning to the second component of competence, the consistent demonstration of appropriate moral and personality attributes, and remembering that each attribute should be locally defined and culturally sensitive, I contend that the absence of any one of honesty, self-awareness, empathy and respect for confidentiality and patient autonomy will compromise competence. These attributes, which are an essential part of competence, subsume the following: accepting feedback, authenticity, availability, discretion, flexibility, integrity, perseverance, reliability, responsibility, sensitivity, stamina and tolerance. These in turn, have become an important element in recommendations for deriving the content of recertification programmes.[6] These are parts, but not the whole, of honesty, self-awareness, empathy and respect. Perhaps they are better summarized by a contemporary account from a doctor who knew James Mackenzie well during his years in Burnley:

> 'Everyone must have been struck... by his extraordinary geniality and charm of manner. I think he was a born optimist, and this quality alone, combined as it was with a bright and overflowing humour, certainly helps to explain the amazing power and influence he exerted over his patients in the way of helping them towards recovery... his very laughter was infectious.
>
> In these days, he personally attended all cases of labour complicated by heart disease, and he devoted an immense amount of time and trouble to the suffering mothers. It was lovely to see their absolute confidence in him, and the affection in which he was held.'[7]

He goes on to describe a situation which impressed him tremendously:

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'Mackenzie did a large consulting practice...and he was called to a neighbouring town to see a little girl who had been very seriously ill for about a week. The country doctor was very anxious, and the parents were in a state of the utmost depression. Very well do I remember how Mackenzie's grave, serious face lit up into happy smile as he listened to the little child's back. He was quite excited as he turned to me and said, "Nicholson, listen to this: it's a resolving pneumonia." As he spoke to the mother and patted her on the shoulder, his pleasure was as great as hers. "Your little girl has been very ill," he said, "but she is going to get quite well." Never have I seen an atmosphere of such intense gloom changed in a moment to one of perfect sunshine; I realized for the first time, the full meaning of the words. "beloved physician".'[7]

I would like you to keep this picture of clinical competence in mind as we go on to consider the stages of medical education and training, and the assessments which record the progress of the clinician on the way to independent practice. At each stage aims and objectives are already available for guidance, relating in the end to General Medical Council recommendations, as the body with overall responsibility for undergraduate education and the maintenance of the medical register.

Aims of medical education and training

Although it sometimes seems that the boundaries of clinical competence are ill defined there are several clear statements on which to base summative assessment at each of the transitional phases, namely graduation, certification and maintenance of competence.

Undergraduate education

A great deal has been written about the need to reform undergraduate medical education and several landmark documents have been published in the last 40 years.[8,9] However, the rate of change is slower than many of us might wish. Stella Lowry has commented that the 'GMC has been expressing its concern for decades'[10] and goes on to assert that this time the definitive guidelines which will soon replace the discussion document[11] issued by the General Medical Council education committee in 1991 must be accompanied by a firm timetable for implementation and penalties for medical schools that do not comply.

Six aims were set out in the 1991 document which can be summarized as: enabling the student to acquire an understanding of health and disease in the context of the whole individual, the family and society; developing active learning rather than passive acquisition of knowledge; reducing factual overload; introducing a substantial component of problem based learning; early and continuing contact with patients; and developing an understanding of research methodology.

Vocational training

The content of and curriculum for vocational training for general practice in the United Kingdom are interpreted by regional advisers within the Joint Committee on Postgraduate Training for General Practice's objectives for vocational training.[12] These acknowledge a direct relationship to the General Medical Council attributes of an independent practitioner.[13]

The assessment of vocational training for formative/diagnostic and summative/certification purposes is currently the focus of national debate.[14] All of the protagonists are, however, likely to agree that the methods adopted must support adult learning and relate to clearly defined aims and objectives. Whatever the outcome of the present debate few would argue that at present the MRCGP examination is irrelevant to summative assessment of vocational training. The examination is developed by a panel of examiners active in UK general practice who are aware of the existing aims and objectives for all stages of UK medical education and training and who constantly debate the boundaries of modern general practice.

Independent clinical practice

The General Medical Council education committee has set out the attributes of the independent practitioner.[13] I take them as the nearest we have to a definition of competence for any clinician, including general practitioners, who work in the UK, and they are summarized as follows:

- The ability to solve clinical and other problems in medical practice.
- Possession of adequate knowledge and understanding of the general structure and function of the human body and workings of the mind, in health and disease, of their interaction and of the interaction between man and his physical and social environment.
- Possession of consultation skills.
- Acquisition of a high standard of knowledge and skills in the doctor's specialty.
- Willingness and ability to deal with common medical emergencies and with other illness in an emergency.
- The ability to contribute appropriately to the prevention of illness and the promotion of health.
- The ability to recognize and analyse ethical problems, so as to enable patients, their families, society and the doctor to have proper regard to such problems in reaching solutions.
- The maintenance of attitudes and conduct appropriate to a high level of professional practice.
- Mastery of skills required to work within a team and, where appropriate, assume the responsibilities of team leader.
- Acquisition of experience in administration and planning.
- Recognition of the opportunities and acceptance of the duty to contribute to the advancement of medical knowledge and skill.
- Recognition of the obligation to teach others.

These marry well with the earlier definition of clinical competence and together provide me, as a deviser of assessments, with a comprehensive description of the general practitioner of today and the future. This person will be self-directed, an adult lifelong learner, an autonomous individual who is given choices about routes to achieving and maintaining clinical competence. These choices must be supported by methods of assessment, which at the same time maintain the confidence of the public and the state. This means that they must be open, their purpose must be clearly understood by all and they must be valid and reliable.

Issues in the assessment of clinical competence

Two important general principles should be borne in mind by any group or institution when devising assessments, namely their purpose and content.

Purpose of assessment

One must be clear whether assessment is for diagnostic (formative) purposes or for licensing, certification or recertification (summative) purposes. Formative assessment is purely to provide learning opportunities; the moment it can influence career progression it ceases to be formative and might better be described as in-training or in-practice assessment. It is, however, summative assessment that drives learning.[15]

Content of assessment

The most important aspect of developing an assessment programme is to define exactly what will be tested. If the procedure does not possess content validity all of its other attributes are irrelevant. There are three steps in this process.[16]

First, the problems that the learner should be able to deal with or resolve at the end of the course should be identified. Secondly, for each problem, the clinical tasks in which the learner is expected to be competent should be defined. A clinical task is an action specific to a particular clinical problem, for example, eliciting a history from a patient with depression or prescribing appropriately for a two year old with otitis media. Research has repeatedly shown that competence in carrying out a clinical task related to a particular problem is not a reliable predictor of the ability to carry out a similar task for a different problem.[17] This inconvenient and counter-intuitive finding makes it imperative that any assessment samples the domain comprehensively and at sufficient length to avoid being unreliable and hence unfair. Thirdly, a blueprint to guide the selection of problems to be included in the assessment should be prepared. The range of tasks is then generated by virtue of the problems selected but the tasks can be balanced — not all history taking or not all prescribing for example. Blueprinting ensures that tasks are assessed in the context of relevant clinical problems and not in isolation.

Once the content of the assessment is defined this determines the choice of method. It is important to choose a test method which is as close to reality as possible; in other words it should have fidelity. For example, if history taking is one of the chosen clinical tasks it would be appropriate to use standardized patients to assess it.

Learning driven by assessment

There are many examples of assessment driving learning in the literature.[18] Wakeford and I have examined the effect on the study approaches of trainees of the introduction of the critical reading question paper into the MRCGP examination.[19] Candidates changed the way in which they studied for the examination, spending more time reading academic journals relevant to general practice and less reading general textbooks and clinical summaries in medical newspapers.

I believe it was right to influence learning in this way as the characteristics of an independent practitioner include the skills of critical appraisal and developing a willingness to participate in research. The validity of the critical reading paper in part derives from its demonstrated effect on learning. Thus, summative and in-training assessment develop clinical competence by stimulating the learning that results in competence.

How does competence relate to performance?

While competence may be defined as what a doctor is capable of doing, performance may be defined as what a doctor does in day to day clinical practice. The relationship between the two is complex and the literature on the subject has been reviewed by Norman.[20] He concluded that there is a clear relationship between written certification tests of competence and performance in practice as judged by medical record review with the clinician and in one instance by peer review. There was not, however, any correlation with patient satisfaction scores. Rethans and colleagues studied the relationship between performance in practice using simulated patients consulting unannounced (consent having previously been obtained) and competence when dealing with identical cases portrayed by different individuals in a test setting.[21] They concluded that if the variables consultation time or efficiency time ratio are studied then competence in the test setting does indeed predict performance in actual practice. Miller has described a framework for clinical assessment which is based on knowledge (knows) but then goes on to examine competence (knows how), performance (shows how) and finally action (does).[22]

Intuitively, it would be hard to argue that it is possible to do something consistently without knowing how to do it. However, those of us who are experienced clinicians seeing patients in everyday practice know that our actions are determined by a complex mixture of what we know how to do, what experience tells us is most important to do and how much time and how many competing priorities there are. Is it therefore surprising that experienced clinicians do worse than novices in tests that do not reward sensible use of time and efficiency?[21]

Hence, the challenge in setting assessments is to make the method appropriate to the level of professional development of the individual. Assessments must support that development and include elements that test performance in settings as close to actual practice as possible given the constraints. These constraints on assessments include validity, reliability, standard setting and feasibility, all of which become particularly important in examinations such as certification to commence independent practice.

How does performance affect outcomes for patients?

At the highest level of professional development, namely during independent practice, it becomes increasingly important to remember that my earlier working definition of competence contained the words 'in part the ability, in part the will, to select and perform consistently relevant clinical tasks'. The words 'will' and 'select' are the keys to the difference between competence, performance and action.

Recent publicity about various methods which have reportedly been used to take a cervical smear in general practice provide an interesting example. To take a smear with the wrong implement or to do it without visualizing the cervix using a spatula or a finger is unacceptable practice. An assessment programme to diagnose that a clinician is incompetent in this area is more complicated than it might at first appear. While the knowledge and skills in relation to the technique may be assessed by a variety of methods such as the use of standardized patients, manikins and direct observation, it is much harder to be sure of what happens in the privacy of the consultation. Outcome measures such as monitoring by the laboratory may not reveal the truth as the sampling of cells may by chance be adequate in some instances.

Health eduction should make a difference — all women should have some idea of what to expect when a smear is carried out and the confidence to query variations from what they have been led to expect. But we know that this ideal is frequently not attained; many women feel powerless and vulnerable during gynaecology consultations, particularly if they are poorly educated or from a different culture.

So a clinician may 'know how' but may not actually do it. This is a failure of honesty and integrity, particularly if it takes advantage of a lack of information on the part of the patient, and it represents serious incompetence.

Three case studies

All of the considerations discussed above apply to the design of assessments at different stages of professional development, and are illustrated within the three case studies which follow.

Undergraduate education

A new curriculum for undergraduate medical and dental students at the Medical Colleges of St Bartholomew's and the Royal London Hospitals was introduced in October 1990. While predating the General Medical Committee education committee guidelines, it is close to them in spirit and practice.

The curriculum is organized in three phases. The first, lasting five terms, is concerned with the basic sciences and with an introduction to the community and its bearing upon health. Phase two lasts for two terms and includes statistical, psychological and sociological aspects of medicine and dentistry and an introduction to clinical medicine and dentistry. It covers topics such as patient interviews and history taking, ethics and law. Phase two students also undertake a project. Phase three is principally clinical and comprises a core curriculum with options.

One of the principles of the new curriculum is that assessment methods must reflect its educational objectives and philosophy, thus avoiding the problem described by James Mackenzie:

> 'Examinations are specially contrived for the purpose of discriminating those with the best memories, and to them all the honours and prizes are given.
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> The individuals who, on the contrary, possess more of the power of reasoning than their fellows, receive no consideration. There are minds which have a difficulty in remembering isolated facts, but if these facts are related in some consecutive manner, they can not only remember them, but also appreciate their bearing on one another. But this type of mind is slow in acquiring knowledge, and in our present-day methods of education less and less encouragement is given to this type of student. His peculiar powers are never developed, and their presence is never suspected.'[23]

One of the major innovations is the introduction of a work book assignment at the end of phase two. It forms an assessment of the ability to conduct and write down the medical interview at an elementary level. The setting is a medical or surgical ward and the relevant clinical teaching is conducted by hospital clinicians who work in partnership with the human science and communication skills teachers. General practitioners act as assessors and teachers of clinical skills, but at this stage of the curriculum they are not greatly involved in teaching communication skills in order to blur the boundaries between hospital and community settings. The teaching of communication skills has been marginalized in the past by association with disciplines newer to the undergraduate curriculum and this problem is being addressed by ensuring that the assessment sends the right message to the learners and by appropriate role modelling by teachers. This means that a development programme in relation to teaching clinical and communication skills must be in place, for both general practitioners and hospital clinicians.

The aim of the workbook assignment is to enable the student to demonstrate an understanding of the course material presented during the term and to apply it in relation to one patient whom they have clerked. The assignment acknowledges the interaction of communication, psychosocial and ethical factors, as well as clinical data, in defining patient problems. The workbook comprises several sections: the interview process; medical examination; examination findings; psychosocial issues; ethical issues; and nursing and paramedical care. The importance of the assignment is emphasized by its inclusion in the MB BS regulations. It is compulsory and students are not allowed to enter their final examinations unless they have obtained a satisfactory grade. While each section focuses on different aspects of the medical interview, I want to emphasize the interview process which relates directly to the General Medical Council recommendations on undergraduate education.[11]

The aim of this part of the assignment is for students to demonstrate their ability to evaluate the communication process in their interview. Recognizing that communication is a process, rather than a shopping list of behaviours, and examination of one's own communication is a lifelong learning activity of paramount importance. It is an essential component of maintaining clinical competence and is fundamental to self-awareness, empathy and respect for patient autonomy. In order that the process of the interview can be assessed the student is asked to submit an audiotape of an entire interview with a patient, a typed transcript of a selected section of the tape, and a self-assessment of this section of the interview to identify which things they did well and areas for improvement or modification. The self-assessment is constructed using a checklist which is itself based on published research about the medical interview. Students are advised that they do not have to search for an 'ideal' patient but should demonstrate their understanding of the communication process with verbatim illustrations from the tape.

The workbook assignment is now into its second year. Overall the standard in the first year was good to excellent with only four students required to resubmit their assignment. All the students receive feedback and the assessment is used to identify students who may be in trouble early in the clinical course. Their performance is closely monitored and linked to the objective structured clinical examination which is held six months later. The assessment of interviewing and communication skills is revisited in the objective structured clinical examination using standardized patients and it is intended to use these results as part of the validation of the workbook exercise.

Vocational training/MRCGP examination

After considering the merits of a structured clinical examination in the form of a simulated surgery with standardized patients, and the use of videotapes of candidates in actual practice, the MRCGP examiners have decided to pilot the use of videotapes for the clinical component within the MRCGP examination. Throughout the discussion we have been interested in the work of other researchers.[24-27]

The first pilot study to examine feasibility and to develop a video workbook was completed in the winter of 1992 with 20 trainees from the west of Scotland region. During the autumn of 1993 we conducted a pilot study with a group of candidates for the examination and a group of experienced clinicians. Each doctor submitted a videotape of about four hours in length covering between 20 and 24 consultations. Each consultation was accompanied by a brief assessment form, and five consultations were reviewed in detail using a consultation map[28] and self-appraisal form. Self-appraisal is important as it will allow the observation of clinical thinking without the distortion that might be introduced by more artificial means of assessment of problem solving. Recent research has shown that while knowledge is important in all stages of expertise, the way in which it is stored and retrieved changes with experience.[29,30] We are therefore concerned to develop an assessment tool which is close to actual practice and in which experienced doctors perform better than those who are less experienced.

We are also determined that the areas to be assessed are based on evidence of relevance to health outcomes for patients rather than merely process measures. Our experience and a review of the literature have convinced us that it is reasonable to include assessment of certain facets of the consultation in a national examination on the basis that it will enhance patient care.[31] This is our justification for developing the clinical component in the way we have. We believe that the consultation is the cornerstone of clinical practice and the data gathered and the therapeutic relationship formed within it provides the basis for all other aspects of patient care.

We have decided that the clinical component will be criterion referenced and we have derived performance criteria which would either be met or not during the consultation. We are not interested in producing scores or rank ordering of candidates in this part of the examination: we wish only to reach a judgement on whether the doctor is competent or not.

Initially five broad areas were selected for further consideration based on the tasks of the consultation: discover the reasons for the patient's attendance; define the clinical problem(s); explain the problem(s) to the patient; address the patient's problem(s); and make effective use of the consultation.[28] Each area has been broken down into elements and one or more performance criteria have been generated for each element. For example, we concluded that the area 'make effective use of the consultation' contained the element 'make effective use of resources' and the following four performance criteria were defined:

- The doctor makes sensible use of available time and suggests further consultation as appropriate.
- The investigations ordered are capable of confirming or excluding the working diagnosis. Costs are justified in terms of the contribution results make to overall management.
- Other health professionals are involved appropriately.
- The doctor prescribes appropriately (mandatory).

In all, 16 elements with 23 associated performance criteria were generated through a process of review and refinement by the panel of examiners. The panel has now reached a consensus that seven of the performance criteria are mandatory:

- The doctor encourages the patient's contribution at appropriate points in the consultation.
- Sufficient information is obtained for no serious condition to be missed.
- The examination chosen is likely to confirm or disprove hypotheses which could reasonably have been formed or is designed to address a patient's concern.
- The doctor appears to make a clinically appropriate working diagnosis.
- Diagnosis, management and effects of treatment are explained.
- The management plan is appropriate for the working diagnosis, reflecting a good understanding of modern accepted medical practice.
- The doctor prescribes appropriately.

These are the criteria we will be working with, searching systematically for evidence that the doctor has met each one — lack of ability in one cannot be compensated for by good performance in another.

There are still many issues to be confronted; for example the incorporation of a criterion referenced component into the MRCGP examination may lead to a two part structure. How reliable and feasible is the approach, what will be the effect on the learners and teachers, and importantly, what are the ethical and legal implications of videotaping consultations, including confidentiality and consent for patients, third parties and the doctors themselves?[32]

GMC performance review procedures

My final example of an assessment which is designed to support clinical competence is taken from independent practice: the development of the assessment methods for the new performance review procedures which the General Medical Council is seeking to introduce.[33] Essentially the purpose of the assessment, which I am devising with a small group of colleagues, will be to diagnose the learning needs of doctors who may be practising at a standard below a minimum acceptable level of competence. It is, however, important to be clear that some doctors will be asked to cease practising pending remedial training and review.

The content of the assessment must recognize that local prevalence of disease, deprivation and resources for practice all lead to different emphases within the same field of medical practice. The content of the assessment must be locally determined, based on actual practice, performance based, and structured to allow an element of choice.[6] The procedures must promote adult learning and clinical competence but be robust enough to identify and confront incompetence. The approach must show respect and understanding for the doctor without forgetting that the well being of patients must be the overriding consideration. The programme will be based on a two day visit to the practice by two medical and one lay assessor, with observation of consultations with real and standardized patients, medical record review, a test of clinical skills, a written test of knowledge, an assessment of practice management and an extended interview based on a personal portfolio.

The component which particularly reflects my approach is the development of the portfolio which the doctor will complete before and during the visit. This will give the doctor the opportunity to present all aspects of professional life and enable the assessors to gain an insight into the background of the complaints against the doctor. The portfolio is structured in two parts:

Part 1. Pre-assessment portfolio (sent to the doctor several weeks ahead of the visit)

- Qualifications.
- Professional employment record.
- Description of medical practice.
- Record of postgraduate education allowance obtained and participation in continuing medical education.

Part 2. Intra-assessment portfolio

- Equipment available in the consulting room and in medical bag (including emergency drugs).
- Competence lists.
- Record of audit activity and general information relevant to educational development.

The introduction to the portfolio includes a description of the attributes of an independent practitioner, summarized above, to demonstrate our commitment to these aims. It also has a section which discusses problems that clinicians have in achieving these attributes in reality. Ways in which encouragement and education can be made available are also included, including the role of a mentor for the doctor before and during the assessment programme. The portfolio is introduced as a means of recording professional and personal information. It also allows the assessors to look at information about the individual and the practice in an objective and logical way.

The intra-assessment portfolio is mandatory. It cannot be viewed in advance and will form part of the assessment, allowing the visiting team to gather more evidence about the individual and the practice, and his or her perceived levels of professional performance. This part also contains lists of competences, which the doctor will be expected to complete by indicating his or her confidence in aspects of clinical practice over a wide range of subjects relevant to general practice. These include psychiatry; dermatology; geriatrics; obstetrics; gynaecology; family planning; ophthalmology; accident and emergency; orthopaedics; rheumatology; ear, nose and throat; and communication/interview skills. Choice is introduced by inviting the doctor to introduce other areas of expertise so that appropriate competence lists can be developed for the visit.

Conclusion

I am certain that James Mackenzie would have supported assessments that enhance clinical competence, in particular the attributes of honesty, self-awareness, empathy and respect. Early on

he described himself as a dunce, and despaired of doing well in examinations.[7] I like to think that he would have easily passed our clinical component for the MRCGP examination, he certainly would have been an exponent of portfolio learning although never, I suspect, a candidate for the General Medical Council performance review procedures. In any case, let him have the last word:

> 'The majority of students devote themselves sincerely to their studies, and are anxious to acquire a knowledge of their profession. When at any examination a big proportion fails to pass, it may be taken for granted that the fault lies either with the teacher or the examiner, and the questions put, and the answers given, would furnish a clue as to which individual was at fault. The students have no-one to stand up for them, and those in authority ought to recognize that students should not suffer for the faults of their teachers and examiners.'[23]

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