

Medicine

Subject benchmark statements

Subject benchmark statements provide a means for the academic community to describe the nature and characteristics of programmes in a specific subject. They also represent general expectations about the standards for the award of qualifications at a given level and articulate the attributes and capabilities that those possessing such qualifications should be able to demonstrate.

This *Subject benchmark statement* does not address explicitly the level at which the qualifications for medicine might be placed within either *The framework for higher education qualifications in England, Wales and Northern Ireland* or *The framework for qualifications of higher education institutions in Scotland* (the *frameworks*). However, the *statement* includes expressions of the professional/employment related abilities that graduates in medicine would be expected to have developed during their higher education and associated practice based experiences. These align, albeit with an emphasis on 'professional ability', with the abilities expressed in the Masters degree descriptor included within the *frameworks*¹.

Subject benchmark statements are used for a variety of purposes. Primarily, they are an important external source of reference for higher education institutions when new programmes are being designed and developed in a subject area. They provide general guidance for articulating the learning outcomes associated with the programme but are not a specification of a detailed curriculum in the subject. Benchmark statements provide for variety and flexibility in the design of programmes and encourage innovation within an agreed overall framework.

Subject benchmark statements also provide support to institutions in pursuit of internal quality assurance. They enable the learning outcomes specified for a particular programme to be reviewed and evaluated against agreed general expectations about standards.

Finally, *Subject benchmark statements* may be one of a number of external reference points that are drawn upon for the purposes of external review. Reviewers do not use *Subject benchmark statements* as a crude checklist for these purposes however. Rather, they are used in conjunction with the relevant programme specifications, the institution's own internal evaluation documentation, in order to enable reviewers to come to a rounded judgement based on a broad range of evidence.

The benchmarking of academic standards for this subject area has been undertaken by a group of subject specialists drawn from and acting on behalf of the subject community. The group's work was facilitated by the Quality Assurance Agency for Higher Education, which publishes and distributes this *statement* and other *statements* developed by similar subject-specific groups.

In due course, but not before July 2005, the *statement* will be revised to reflect developments in the subject and the experiences of institutions and others who are working with it. The Agency will initiate revision and, in collaboration with the subject community, will make arrangements for any necessary modifications to the *statement*.

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¹ Please refer to additional supplementary statement: <http://www.qaa.ac.uk/cmtwork/benchmark/supstat.htm>

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Academic statement - Medicine

1 Introduction

1 This *Subject benchmark statement (statement)* about requirements for the award of degrees in medicine is part of a more widespread process under the aegis of the Quality Assurance Agency for Higher Education (QAA) to provide *statements* that can be utilised for a number of purposes. The uses to which *statements* will be put are threefold:

- **by institutions** - to inform the design of programmes and to evaluate the success of programmes in achieving those outcomes;
- **by external examiners and QAA** - to assist them in assessing broad consistency of standards between institutions;
- **by potential students and employers** - to help them understand the abilities and qualities of mind that programmes of higher education set out to develop.

2 This *statement* has been drawn up by a group of 11 medical academics from a wide variety of universities in the United Kingdom (UK). The group was formed at the request of the QAA in consultation with the General Medical Council (GMC) and the Council of Heads of Medical Schools and Faculties in the UK.

3 These organisations were involved in the composition of the group because holders of a medical degree from a recognised university in the UK are automatically entitled to provisional registration with the GMC and thus to embark on a professional career. Graduation and licensing for practice cannot be separated as the law stands at present.

4 The Medical Act 1983 gives the GMC responsibility for setting and maintaining standards of basic medical education in the UK. The GMC's Education Committee undertakes this role by a variety of means, including publishing, about once every decade, recommendations on undergraduate medical education. The most recent was the document entitled *Tomorrow's Doctors*, issued in December 1993. The GMC's Education Committee also undertakes statutory visitations to assess the quality of teaching, and inspections of the final qualifying examinations. Since 1995, the Committee has been undertaking informal visits to medical schools to monitor the implementation of the recommendations of *Tomorrow's Doctors*.

5 Medical education is also governed by an EEA Directive. Article 23 of Council Directive 93/16 stipulates that the period of basic medical training for the medical profession shall comprise a six-year course or 5,500 hours of theoretical and practical instruction given in a university or under the supervision of a university. The term 'basic medical training' defines the period of training leading up to full registration. In the UK this includes the pre-registration house officer year, which is under the supervision of a university, and therefore the requirements of the EEA legislation are met. In the case of graduates admitted to accelerated medical courses, part of their previous undergraduate education may also be regarded as constituting a portion of their basic medical training.

6 This document is concerned with degree courses leading to primary UK medical qualifications. The terminology of the degrees differs among universities. In some cases a single degree of Bachelor of Medicine (MB or BM) is awarded but most often it is accompanied by a second degree of Bachelor of Surgery (BS, BCh, BChir or ChB) and in the case of The Queen's University of Belfast, a third degree, Bachelor of the Art of Obstetrics (BAO). Only the degrees in medicine and surgery are registrable with the GMC, and in law, all are of equal standing.

7 Many universities have an ordinary degree of Bachelor of Medical Science or Bachelor of Medical Studies which is awarded to candidates who have completed satisfactorily the first three years of the course but who do not wish to continue their studies. Most universities provide an optional intercalated degree, usually of one year's duration, leading to a BSc, BMedSci or other Honours degree. There are a few programmes which include the equivalent to an intercalated year as an integrated part of the programme. Another variation is the combined MB BS/PhD programme offered by some universities to those who are exceptionally able.

8 Students of medicine will, in virtually all cases, be aspiring to a career as a doctor. Thus the medical course has a strong vocational element and students do not usually take core modules from programmes other than medicine. While the core programme is compulsory, opportunities for student choice are provided through special study modules and elective study.

9 The undergraduate medical course takes at least five years in most instances. Medicine is not usually classified as an Honours course although the entry qualifications and academic standards are very high. Universities differ in the award of Honours or equivalent. These may be given for different parts of the course and/or may be given for the complete course. The terminology also differs, with some universities awarding Honours while others give distinctions or credits. Some universities do not award Honours or distinctions of any sort with the medical degree.

10 To achieve their final professional status in their chosen field, graduates will have to undertake much further study. It should be recognised, therefore, that graduation marks but a landmark on the way to independent medical practice.

11 Throughout, the benchmarks have been defined in terms of the intellectual attributes, the knowledge and understanding, the clinical, interpersonal and practical skills, and the professional competencies, attributes, behaviours and responsibilities, which will allow the graduate to function effectively and develop as a pre-registration house officer and commence further training. Therefore the undergraduate syllabus should be designed so as to be relevant particularly to the early years of practice and to encourage the development of independent learning skills.

12 Medicine is characterised by the need for students to acquire not only knowledge and understanding but also clinical skills and appropriate attitudes. Professional standards are of great importance as is ability to work with other healthcare professionals. The acquisition of clinical skills involves access to patients under the supervision of clinical teachers, usually medical practitioners, in hospital and in the community. While universities are responsible for organising and assessing programmes in medical education, most of those teaching clinical medicine are health service practitioners who are not employed by universities. There is a considerable health service funding stream to support clinical teaching and this reimburses NHS Trusts for the service costs of teaching.

13 Traditionally the medical course was divided into a pre-clinical course covering the sciences basic to medicine and the clinical course covering clinical instruction with some of the more applied medical sciences. Over the last two decades the division has been increasingly blurred and most courses now have 'vertical integration' and 'horizontal integration'. The degree of integration varies between medical schools.

14 In recent years there has been an increasing professionalisation of medical education with most medical schools now having medical education departments or units. There are also different approaches to education across the medical schools. The curricula in some medical schools are predominantly problem-based whereas others have mixtures of problem-based and other educational methods. The balance of teaching in the hospital and community also varies, as does the amount of interdisciplinary and interprofessional learning.

15 While universities have entered a period of innovation and development in healthcare education, all courses leading to a medical degree must meet the requirements of the GMC and these benchmark statements. While these apply equally to all medical degrees, there is a variety of ways in which they may be met; such educational diversity is to be encouraged.

16 *Subject benchmark statements* describe the nature of the general intellectual characteristics which the subject aims to develop in a student, and which a graduate might be expected to be able to demonstrate. They are reference points rather than outcomes and expository rather than prescriptive. Institutions in their programme specifications will provide information on the structure and functions of their programmes of study and specify learning outcomes. The yardstick for the graduate in medicine is the ability to undertake the duties of a pre-registration house officer. The benchmarks for medicine are but one of the external reference points for the undergraduate medical curriculum and must be considered together with the others, and in particular the recommendations of the Education Committee of the General Medical Council published in *Tomorrow's Doctors 2002*.

2 Defining principles

1 Medicine is concerned with the maintenance and promotion of good health and the origin, diagnosis, treatment and prevention of disease and injury, and the impact of illness and disability on patients, their families and on populations. This includes understanding normal human structure and function at all stages of development, understanding the abnormalities of structure and function that occur in the common diseases, and recognising how illness affects both physical and psychological function and the patient's interaction with the environment and society.

2 Medical education imparts the knowledge and skills required for the prevention, diagnosis and assessment of common and important diseases in a variety of settings, and patient management with respect to control, cure, rehabilitation and support, and palliative care. Students must understand how diseases affect both the individual and the population, and how the environment interacts with disease and impairment to produce disability and handicap. They must understand the principles of disease prevention and be able to undertake health promotion. The medical course also seeks to impart appropriate professional and personal attitudes and behaviour, including critical evaluation, curiosity and lifelong learning skills as well as the ethical and legal framework of medical practice. Courses in medicine must produce graduates able to undertake the pre-registration house officer year. They must also be prepared to undertake postgraduate training for their chosen careers and to participate in continuing education and professional development throughout their working lives.

3 The goals of undergraduate medical education set out by the GMC in *Tomorrow's Doctors 1993*, are as follows:

- a the student should acquire a **knowledge** and **understanding** of health and its promotion, and of disease, its prevention and management, in the context of the whole individual and his or her place in the family and in society;
- b the student should acquire and become proficient in basic clinical **skills**, such as the ability to obtain a patient's history, to undertake a comprehensive physical and mental state examination and interpret the findings, and to demonstrate competence in the performance of a limited number of basic technical procedures;
- c the student should acquire and demonstrate **attitudes** necessary for the achievement of high standards of medical practice, both in relation to the provision of care of individuals and populations and to his or her own personal development.

3 The nature and content of the subject

1 The undergraduate medical course has two purposes - to provide an academic education in the basic and clinical sciences and to prepare graduates for professional practice as doctors. The course provides the graduate with intellectual skills such as analysis and reflection, problem-solving and clinical reasoning, and has vocational, ethical and legal components. These strands should be interwoven in the modern curriculum.

2 The medical course consists of a core curriculum and a required component of student-selected study. The core provides the essential knowledge, understanding, clinical skills and professional attitudes which are required by any medical graduate in order that s/he may practise as a pre-registration house officer and commence postgraduate training. Student-selected study has the aim of stimulating critical thought and developing further generic graduate skills and intellectual attributes underpinning enquiry and critical thinking; it should allow students to acquire research methods and enhance their skills in collection, evaluation, synthesis and presentation of evidence. Student-selected study provides opportunity for study in depth and may extend beyond the traditional medical disciplines. Most courses also provide opportunities for students to organise placements abroad or elsewhere in the UK. Experience of healthcare in different settings often helps to prepare students for work in a multicultural society.

3 Graduates should be prepared to approach their medical practice:

- with the appropriate intellectual skills of enquiry, clinical reasoning, critical thinking and decision making;
- possessing sufficient knowledge of the basic and clinical sciences, and an understanding of the underlying principles of scientific method;
- with developed clinical, interpersonal and practical skills;
- understanding and accepting their professional, ethical and legal responsibilities.

4 Subject knowledge and understanding

1 All graduates will have integrated core knowledge of biomedical, behavioural, and population sciences and the clinical knowledge relevant to the understanding and management of problems and conditions likely to be encountered in the pre-registration house officer year and as a foundation for specialty training.

- 2 Graduates will demonstrate knowledge and understanding of:
 - a normal structure and function of the major systems and how they interrelate;
 - b different stages of the life cycle and how these affect normal structure and function;
 - c behaviour and relationships between individuals and their family/partners, immediate social groups, and society at large;
 - d molecular, biochemical and cellular mechanisms important in maintaining homeostasis;
 - e causes and mechanisms of disease;
 - f natural history of disease and relationships with risk factors and disease prevention;
 - g alteration in structure and function of the body and its major systems consequent upon illness or injury;
 - h pharmacological principles of treatment using drugs, their efficacy in the management and symptomatic relief of diseases, and their adverse reactions;
 - i the principles of non-pharmacological therapies and their role in the management of disease and disability;
 - j impairment, disability and handicap, and the principles of rehabilitation;
 - k principles of disease surveillance and screening, disease prevention, communicable disease control, health promotion, and health needs assessment;
 - l principles of healthcare planning, and prioritisation of service, including basic concepts of health economics;
 - m organisation of the NHS;
 - n impact of disease in a multicultural society;
 - o epidemiological principles of demography and biological variability;
 - p ethical and legal background of medical practice;
 - q educational principles through which learning takes place.

- 5 Intellectual attributes
 - 1 Graduates should demonstrate their ability to think critically by:
 - a adopting reflective and inquisitive attitudes and applying rational processes;
 - b recognising the impact of their own value judgements and those of patients.

 - 2 Graduates should demonstrate proficiency in clinical reasoning through their ability to:
 - a recognise, define and prioritise problems;
 - b analyse, interpret, objectively evaluate and prioritise information, recognising its limitations;
 - c recognise the limitations of knowledge in medicine and the importance of professional judgement.

 - 3 Graduates should demonstrate insight into research and scientific method through:
 - a understanding and critical appreciation of methodology;
 - b formulating research questions that are pertinent to medicine;
 - c choice and application of appropriate quantitative and qualitative methodologies;
 - d recognition of the importance of rigour in collecting, analysing and interpreting data;
 - e recognition of the relationship between evidence, audit and observed variation in clinical practice.

 - 4 Graduates should exhibit creativity/resourcefulness in their professional learning, scientific endeavour and clinical practice.

- 5 Graduates should demonstrate their ability to recognise and cope with uncertainty by:
- a accepting that uncertainty is unavoidable in the practice of medicine;
 - b using appropriate cognitive and intellectual strategies to deal with uncertainty when it arises.

6 Generic graduate skills and clinical competencies

All medical graduates will possess a range of generic (transferable) skills which are those expected of all university graduates. They will also be competent in those core clinical, interpersonal, and practical/technical skills relevant to commencement of the pre-registration house officer year. In relation to all aspects of clinical practice, graduates will demonstrate appropriate professional behaviours, safeguarding confidentiality, understanding the need for informed consent, recognising their own limitations and being prepared to seek help from more experienced health care professionals when necessary.

6.1 Generic graduate skills

In relation to generic (transferable) skills, the graduate will be able to:

- a adopt the principles of reflective practice and lifelong learning;
- b retrieve, manage, and manipulate information by all means, including electronically;
- c present information clearly in written, electronic and oral forms, and communicate ideas and arguments effectively;
- d effectively manage time and resources and set priorities;
- e apply the principles of scientific research and audit;
- f study topics in depth;
- g deal with uncertainty and work within a changing environment;
- h teach effectively and act as a mentor to others;
- i work effectively within a team.

6.2 Core competencies relevant to the pre-registration house officer year

1. In relation to clinical skills, the graduate will be able to:

- a take a history which is patient-centred, sensitive, structured and relevant;
- b undertake a relevant and systematic physical and mental state examination in a sensitive manner, appropriate for age, gender, culture and clinical condition;
- c define problems and formulate a differential diagnosis;
- d select appropriate investigations and interpret their results;
- e make clinical decisions based upon evidence and findings;
- f plan patient management, recognising the:
 - importance of negotiating the management plan with the patient, or if appropriate, a relative or carer;
 - effect on the patient;
 - relevance of age and social circumstances when determining treatment;
 - requirements for informed consent;
 - need for team work;
 - need for appropriate referrals to the right professionals.

2 In relation to interpersonal skills, the graduate will be competent in the following areas of communication:

- a listening, to patients, relatives/carers/partners, and other healthcare professionals;
- b explaining, and providing patients and others with adequate information;
- c mediating and negotiating with patients, carers and colleagues;
- d handling complaints appropriately;
- e liaising with other members of the healthcare team.

- 3 The graduate will be able to carry out those practical and technical procedures, including the prescribing and administration of medication, relevant to the role of the pre-registration house officer.
- 4 The graduate will be able to produce and maintain contemporaneous, legible, accurate and pertinent records for patients under their care.
- 5 The graduate will be familiar with basic communication and information technology relevant to their duties.
- 6 The graduate will be able to give advice on health promotion and disease prevention.
- 7 The graduate will be able to liaise with the different sectors of the health and social care systems and be able to manage those components relevant to the care of the patient.

6.3 Demonstration of competency

- 1 Graduates must be able to recognise and carry out the initial treatment of the following emergency situations, which require immediate action, such as:
 - cardiac arrest;
 - anaphylactic shock;
 - the unconscious patient.
- 2 Graduates must be able to recognise conditions which require early or immediate intervention by the healthcare team. Graduates will be able, under appropriate supervision, to undertake tasks to initiate and be involved in the care of acutely ill patients.
- 3 Graduates should be able to evaluate the health needs of patients with chronic illness and disability, initiate relevant medical investigations and interventions, and plan management including referral to members of the professional team and other agencies.
- 4 Graduates should be capable of giving appropriate input into the multi-disciplinary and multi-professional teams involved in the management of patients in need of rehabilitation or palliative care, including care of the dying.

7 Professional attributes and competence

- 1 A medical degree is a vocational qualification as well as an academic award, and as such, must prepare graduates for professional activities across widely differing fields. In particular, graduates must possess all the professional skills and attributes to be able to function as a pre-registration house officer.
- 2 Graduates must adhere to the professional standards defined from time to time by the GMC. Their attitudes and behaviour need to be consistent with 'Duties of a Doctor' as defined by the GMC in *Good Medical Practice*.
- 3 Graduates must:
 - a be aware of the importance and therapeutic potential of the patient/doctor relationship;
 - b adopt an empathic and holistic approach to patients and the problems they present;
 - c respect patient autonomy and involve patients, or, if appropriate, relatives or carers as partners in therapeutic and management decisions;
 - d know of and respect different cultures, values, views and beliefs;
 - e have some familiarity with alternative medical practices, and be sympathetic and understanding if their patients choose to use them;
 - f remain non-judgemental in all aspects of their work, and avoid stigmatising any category of patient;
 - g understand and engage in reflective practice/audit and appraisal of their own and others' work.
- 4 Graduates should demonstrate their ability to work effectively within a team by:
 - a practising in a manner that promotes effective inter-professional activity, including shared learning;
 - b working within the limits of their responsibility and capability;
 - c making decisions in partnership with colleagues and patients.

5 Graduates should be able to:

- a prioritise the care of ill patients;
- b prioritise their own time;
- c keep effective medical records;
- d keep up-to-date with current medical practice;

6 Graduates need to apply ethical and legal knowledge to their practice, particularly in:

- a applying the principles of confidentiality, consent, honesty and integrity;
- b dealing effectively with complaints about either their own or colleagues' practice or behaviour;
- c being aware and complying with legal and professional responsibilities, particularly with respect to death and dying; drug prescribing; mental health; physical and sexual abuse of children and adults; abortion; reporting unsatisfactory/inappropriate performance;
- d considering the rights of patients;
- e understanding and complying with requirements of clinical governance.

7 Outcomes for graduates' personal development include:

- a self-awareness and reflection - evaluating their performance and personal capability, and recognising the limits of their competence;
- b the ability to manage their learning with respect to continuing professional development;
- c recognising the pressures on themselves and colleagues created by a busy professional career, and being aware of important issues in self care, eg stress reduction, avoidance of unhealthy practices such as alcohol misuse and self-medication.

8 Teaching, learning and assessment

1 Medical curricula can be delivered in many ways. The overall approach developed by individual medical schools depends on the philosophy of each curriculum. It is recognised that different learning systems suit different students so such diversity is supported. However, irrespective of the approach a significant amount of learning should be active. There must be sufficient time for self-directed learning and reflection to encourage students to develop the habits of lifelong learning.

2 The medical curriculum should be designed so as to provide adequate opportunities to acquire independent learning skills, while developing clinical competence to a level appropriate to a new pre-registration house officer. Experiential learning arising from extensive periods of direct patient contact is an essential component of the course, which may be supported by contributions made by skills laboratories and learning activities using simulated patients. Adequate numbers of patients in primary, secondary and tertiary care settings need to be available for face-to-face student contact.

3 Assessment strategies and methods must ensure that the knowledge, understanding, skills and attitudes set out previously are sufficiently covered. Methods must be both valid and reliable. Appropriate procedures for standard setting should be employed. Clinical competence must be rigorously assessed so as to identify those who are not yet fit for practice. Methods of achieving these aims may vary but should always include frequent direct observations of students interviewing and examining patients. Assessment of some qualities will require extended observations to be made. While professional attitudes, for example, may be difficult to assess directly, the consequences of attitudes on behaviour must be assessed - usually by observation of that behaviour over a period of time. Assessment needs to be thorough but should not be so onerous or so frequent as to interfere with the learning process.

9 Key characteristics

1 Graduation is the first landmark on the way to independent medical practice. The award of the medical degree leads to provisional registration with the GMC and gives right of access to practise as a pre-registration house officer. Graduates, from the outset, must demonstrate general competency and the full range of attributes that will allow them to function satisfactorily as doctors. Thus the competencies required for the pre-registration period must be present at graduation. Graduates must be aware of and adhere to the requisite attributes required as designated from time to time in the various publications of the GMC, eg *Tomorrow's Doctors*, *The New Doctor*, and *Good Medical Practice*, from which the material at paragraph 9.2 is taken.

2 Patients must be able to trust doctors with their lives and well-being. To justify that trust the medical profession has a duty to maintain a good standard of practice and care and to show respect for human life. In particular graduates must:

- make the care of their patients their first concern;
- treat every patient politely and considerately;
- respect patients' dignity and privacy;
- listen to patients and respect their views;
- give patients information in a way they can understand;
- respect the rights of patients to be fully involved in decisions about their care;
- keep their professional knowledge and skills up to date;
- recognise the limits of their professional competence;
- be honest and trustworthy;
- respect and protect confidential information;
- make sure that their personal beliefs do not prejudice their patients' care;
- act quickly to protect patients from risk if they have good reason to believe that they or a colleague may not be fit to practise;
- avoid abusing their position as doctors;
- work with colleagues in the ways that best serve patients' interests.

In all these matters graduates must never discriminate unfairly against their patients or colleagues, and they must always be prepared to justify their actions to them.

3 The benchmarks specified for medical degrees have been defined in terms of the intellectual attributes, the knowledge and understanding, the clinical, interpersonal and practical skills, and the professional competencies which will allow the graduates to function effectively as pre-registration house officers and develop as professionals. Much further speciality-specific training under the supervision of senior doctors will be required before medical graduates achieve independent status in their chosen fields.

Appendix 1

Membership of the benchmark group

Dr Susan Burge	University of Oxford
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