



*Assessment and Accreditation of Medical Schools:  
Standards and Procedures, 2009*

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## **PART 2 EDUCATIONAL STANDARDS**

### **Attributes of graduates**

The goal of medical education is to develop junior doctors who possess attributes that will ensure that they are competent to practise safely and effectively as interns in Australia or New Zealand, and that they have an appropriate foundation for lifelong learning and for further training in any branch of medicine. Attributes should be developed to an appropriate level for the graduates' stage of training.

Specific attributes incorporating:

- knowledge and understanding
- skills and
- attitudes as they affect professional behaviour

are described in the list below.

Doctors must be able to care for individual patients by preventing and treating illness, assisting with the health education of the community, being judicious in the use of health resources, and working with a wide range of health professionals and other agents. They must be able to work effectively, competently and safely in a diversity of cultural environments, including a diversity of Indigenous health environments.

The quality of each medical school will ultimately be judged by the ability of its graduates to perform at a high level in the changing roles the community requires of its medical practitioners. This requires a flexibility of approach and a commitment to a lifetime of continuing medical education. Medical courses should produce graduates who are willing and able to develop further their knowledge and skills, beginning in the intern year and continuing throughout their professional careers. Graduates must possess a sufficient educational base to respond to evolving and changing health needs throughout their careers.

In Australia and New Zealand, inequalities remain in the health status of various social and cultural groups. Medical schools have a responsibility to select students who can reasonably be expected to respond to the needs and challenges of the whole community, including the health care of these groups. This may include selection of students who are members of such groups. The medical curriculum should also provide opportunities for cultural education programs, and opportunities for training and provision of service in under-serviced communities. A balance of rural, remote and urban area health needs should also be reflected in the curriculum.

Australia has special responsibilities to Aboriginal and Torres Strait Islander people, and New Zealand to Māori, and these responsibilities should be reflected throughout the medical education process.

Doctors work in a context in which the Indigenous peoples of Australia and New Zealand bear the burden of gross social, cultural and health inequity. Doctors must be aware of the impact of their own culture and cultural values on the delivery of services, historically and at present, and have knowledge of, respect for and sensitivity towards the cultural needs of Indigenous people. In this context, beginning doctors need to be able to relate the knowledge and understanding, skills, and particularly attitudes set out below specifically to Indigenous peoples.

## **Knowledge and Understanding**

Graduates completing basic medical education should have knowledge and understanding of:

1. Scientific method relevant to biological, behavioural and social sciences at a level adequate to provide a rational basis for present medical practice, and to acquire and incorporate the advances in knowledge that will occur over their working life.
2. The normal structure, function and development of the human body and mind at all stages of life, the factors that may disturb these, and the interactions between body and mind.
3. The aetiology, pathology, symptoms and signs, natural history, and prognosis of common mental and physical ailments in children, adolescents, adults and the aged.
4. Common diagnostic procedures, their uses and limitations.
5. Management of common conditions including pharmacological, physical, nutritional and psychological therapies. A more detailed knowledge of management is required for those conditions that require urgent assessment and treatment.
6. Normal pregnancy and childbirth, the more common obstetrical emergencies, the principles of antenatal and postnatal care, and medical aspects of family planning.
7. The principles of health education, disease prevention and screening.
8. The principles of amelioration of suffering and disability, rehabilitation and the care of the dying.
9. Factors affecting human relationships, the psychological, cultural and spiritual well-being of patients and their families, and the interactions between humans and their social and physical environment.
10. Systems of provision of health care in a culturally diverse society including their advantages and limitations, the principles of efficient and equitable allocation and use of finite resources, and recognition of local and national needs in health care and service delivery.
11. Indigenous health, including the history, cultural development and health of the Indigenous peoples of Australia or New Zealand.
12. The principles of ethics related to health care and the legal responsibilities of the medical profession.

## **Skills**

Graduates completing basic medical education should have developed the following skills and abilities:

13. The ability to construct, in consultation with a patient, an accurate, organised and problem-focused medical history.
14. The ability to perform an accurate physical and mental state examination.
15. The ability to choose, from the repertoire of clinical skills, those that are appropriate and practical to apply in a given situation.
16. The ability to interpret and integrate the history and physical examination findings to arrive at an appropriate diagnosis or differential diagnosis.
17. The ability to select the most appropriate and cost effective diagnostic procedures.
18. The ability to interpret common diagnostic procedures.
19. The ability to formulate a management plan, and to plan management in concert with the patient.
20. Communication skills, including being able to listen and respond, as well as being able to convey information clearly, considerately and sensitively to patients and their families, doctors, nurses, other health professionals and the general public.

21. The skills needed to work safely as an intern, as outlined in the National Patient Safety Education Framework developed by the Australian Council for Quality and Safety in Health Care.
22. The ability to counsel patients sensitively and effectively, and to provide information in a manner that ensures patients and families can be fully informed when consenting to any procedure.
23. The ability to recognise serious illness and to perform common emergency and life-saving procedures, including caring for the unconscious patient and cardiopulmonary resuscitation.
24. The ability to interpret medical evidence in a critical and scientific manner and an understanding of the epidemiology of disease in differing populations and geographic locations.
25. The ability to use information technology appropriately as an essential resource for modern medical practice.

### **Attitudes as they Affect Professional Behaviour**

At the end of basic medical education, students should demonstrate the following professional attitudes that are fundamental to medical practice:

26. Recognition that the doctor's primary professional responsibilities are the health interests of the patient and the community.
27. Recognition that the doctor should have the necessary professional support, including a primary care physician, to ensure his or her own well-being.
28. Respect for every human being, including respect of sexual boundaries.
29. Respect for community values, including an appreciation of the diversity of human background and cultural values.
30. A commitment to ease pain and suffering.
31. A realisation that it is not always in the interests of patients or their families to do everything that is technically possible to make a precise diagnosis or to attempt to modify the course of an illness.
32. An appreciation of the complexity of ethical issues related to human life and death, including the allocation of scarce resources.
33. A realisation that doctors encounter clinical problems that exceed their knowledge and skills, and that, in these situations, they need to consult and/or refer the patient for help, in clinical, cultural, social and language related matters as appropriate.
34. An appreciation of the responsibility to maintain standards of medical practice at the highest possible level throughout a professional career.
35. An appreciation of the responsibility to contribute towards the generation of knowledge and the professional education of junior colleagues.
36. An appreciation of the systems approach to health care safety, and the need to adopt and practise health care that maximises patient safety including cultural safety.
37. A commitment to communicating with patients and their families, and to involving them fully in planning management.
38. A desire to achieve the optimal patient care for the least cost, with an awareness of the need for cost-effectiveness to allow maximum benefit from the available resources.
39. A preparedness to work effectively in a team with other health care professionals.
40. A realisation that one's personal, spiritual, cultural or religious beliefs should not prevent the provision of adequate and appropriate information to the patient and/or the patient's family, or the provision of appropriate management including referral to another practitioner.

# Standards for basic medical education

The AMC has adopted the following standards for basic medical education which a medical school is required to satisfy in order to achieve accreditation. The standards are accompanied by notes, which amplify AMC policy in particular areas.

## 1 The context of the medical school

### 1.1 Governance

#### Standards

*The medical school's governance structures and functions are defined, including the school's relationships with its campuses and clinical schools and within the university.*

*The governance structures set out, for each committee, the composition, terms of reference, powers and reporting relationships, and ensure representation from all relevant groups in decision-making.*

*The school consults on key issues relating to its mission, the curriculum, graduate outcomes and governance with those groups that have a legitimate interest in the course.*

#### Notes

The AMC expects each medical school to engage in a process of quality improvement and renewal, in order that its curriculum reflects contemporary trends in medicine and medical education, and remains relevant.

### 1.2 Leadership and autonomy

#### Standards

*The medical school has sufficient autonomy to design and develop the medical course.*

*The responsibilities of the academic head of the medical school for the educational program are clearly stated.*

#### Notes

While the AMC has no wish to impose or recommend specific structures for medical schools, it does expect the school to exhibit sufficient control over its curriculum to allow its objectives to be achieved. The head of school must have sufficient authority to administer the educational program to meet the objectives of the medical course. The AMC expects such authority to extend to overall responsibility for the delivery of the medical course at sites geographically separated from the main campus of the school.

### 1.3 Medical course management

#### Standards

*The school has established a committee or similar entity with the responsibility, authority and capacity to plan, implement and review the curriculum to achieve the objectives of the medical course.*

## Notes

A committee including members with knowledge and expertise in medical education should be responsible for designing the curriculum and overseeing its implementation, including student assessment. Membership of this committee would include the basic and clinical sciences, but the responsibilities of individuals should transcend specific discipline interests. This is especially important since a number of topics of contemporary importance cross discipline boundaries.

It is important that funding allocation processes within the university or medical school promote the cooperation of departments or disciplines and respond to recommendations of curriculum committees.

The curriculum committee should develop a wider perspective on the content of the curriculum to recognise local and national needs in health care and service delivery. This might incorporate particular teaching and learning on local or national health priorities, such as the health of Australian Aboriginal and Torres Strait Islanders and/or New Zealand Māori.

### **1.4 Educational expertise**

#### Standards

*The school ensures appropriate use of educational expertise, including the educational expertise of Indigenous people, in the development and management of the medical course.*

#### Notes

Medical schools should draw upon educational expertise in the development and delivery of the curriculum, and in the provision of related training to teaching staff. Many medical schools have found it advantageous to have a medical education unit to promote the availability of educational expertise to the school.

Indigenous health is a school-wide responsibility that will require appropriate guidance and leadership in Australia by Aboriginal and Torres Strait Islanders and in New Zealand by Māori, as well as adequate resources for training and professional development of all staff, engaging with local communities and other appropriate networks.

### **1.5 Educational budget and resource allocation**

#### Standards

*The medical school has a clear line of responsibility and authority for the curriculum and its resourcing, including a dedicated educational budget.*

*There is sufficient autonomy to direct resources in order to achieve the mission of the school and the objectives of the medical course.*

#### Notes

The AMC expects medical schools to be able to direct resources in an appropriate manner to achieve their overall objectives. There should be a clear and direct line of responsibility for the curriculum and its resourcing.

Medical schools are frequently grouped in faculties of health sciences with other health care professions, such as schools of nursing, physiotherapy, dentistry and pharmacy. This can produce economies of scale and can facilitate interdisciplinary cooperation. The needs of medical education differ in a number of respects from those of other health sciences. Although certain elements of basic medical education may appropriately be undertaken together with other branches of health care, the

differing depth of knowledge required in many areas will usually necessitate specific courses designed for the medical curriculum.

Several subjects in the medical course are also studied by other students. In some universities, the departments concerned are administered through a faculty other than a medicine or health faculty. Again, the AMC has no wish to define one practice as more appropriate than another. Where important departments are administered through faculties other than medicine or health, the AMC expects the medical school to be able to demonstrate that it exercises appropriate curriculum control so that the specific educational goals of medical education can be achieved.

The AMC is aware of the financial constraints on all medical schools in the changing environment of education funding, and health care funding and delivery. Some of the educational methods introduced to foster active student learning require significant resources. Medical schools must be able to demonstrate that their educational objectives are supported by adequate financial resources, and that they are able to maintain high standards of medical education for the proposed period of AMC accreditation.

Resources for basic medical education are provided not only by universities but also by a variety of health care institutions funded by the States or the Commonwealth. It is essential that the funding of such institutions allows for the additional costs of providing educational experience in these settings.

Health initiatives relating to Australian Aboriginal and Torres Strait Islanders, and in New Zealand to Māori, should be considered as core responsibilities within medical school business and reflected accordingly within the budget. These initiatives should not rely solely on special, additional or external resources.

## **1.6 Interaction with health sector**

### Standards

*The medical school has constructive partnerships with relevant health departments and government, non-government and community health agencies to promote mutual interests in the education and training of medical graduates skilled in clinical care and professional practice.*

*The medical school recognises the unique challenges faced by the Indigenous health sector and has effective partnerships with relevant local communities, organisations and individuals.*

*The medical school works with its partners to ensure university staff in affiliated institutions are integrated into the service and administrative activities of the institution. In the same way, the university works with its partners to ensure that staff employed by the affiliated institutions can meet their teaching obligations and that peer review and professional development are a regular part of this interaction.*

### Notes

Medical education and training are dependent on a wide range of external educational partners including strong and supportive State-financed health services. Many benefits accrue to health care institutions through being centres for undergraduate medical education. Research shows that these institutions can offer a better standard of care. A student's positive learning experience in an institution can mean the student will want to return as a junior medical officer. Teaching hospitals are the venues where technology-intensive services requiring special expertise, equipment and staff are provided. Medical students benefit from access to patients and teachers within institutions administered through State governments. The AMC considers it essential that there is a supportive State health authority and that appropriate channels of communication are available to the medical school to allow problems to be addressed and initiatives to be developed.

Increasingly, clinical training occurs in a broad range of community settings in addition to public and private hospitals, including general practices, rural and remote and Indigenous health settings. Clinical training partnerships need to be flexible enough to accommodate the different needs of students and clinical training partners in these settings. In Indigenous health settings, cultural awareness must underpin the partnership arrangements.

There should be effective communication and liaison between the university, the medical school, and health care and research institutions affiliated with the university. While the AMC believes formalised arrangements protect these relationships, they are best developed by an ethos of reciprocity. In general, the more harmonious the relationship between the university staff and the staff of affiliated institutions, the more likely it is that an appropriate environment for teaching and research will be developed.

Affiliation agreements between the university and hospital providers should address, at a minimum:

- assurance of student and staff access to resources for education
- the medical school's authority over academic affairs and the education and assessment of students
- the role of the school in appointment of staff with teaching responsibilities
- specification of the responsibility for treatment and follow-up when students are exposed to infectious or environmental hazards
- indemnity arrangements for students.

As it is important that institutions associated or affiliated with university medical schools share the educational and research objectives of the medical school, the university should be represented on the relevant staff appointment committees, and preferably the board of management, of its affiliated institutions. In turn, the institutions should be represented on the committees of the medical school, especially those making appointments of academic staff who will have clinical responsibilities. It would also be expected that the appropriate hospital appointment committee would appoint clinical academic staff to the clinical staff of the hospital.

In addition, there should be a formally constituted mechanism for high level consultation between the university and the affiliated institution to ensure appropriate communication and liaison on matters of mutual interest, particularly those relating to teaching, research and clinical service. Such consultation should extend to regular communication with the State health department and the establishment of formal agreements that meet the interests of both parties.

## **1.7 The research context of the school**

### Standards

*The medical course is set in the context of an active research program within the school.*

### Notes

Undergraduate medical education is greatly enhanced by a medical school environment in which research is actively pursued. A research ethos attracts high calibre staff who can engender a milieu of critical appraisal and evaluation of existing knowledge, and who can contribute to the advancement of knowledge. Active researchers are also in the best position to interpret and apply advances in medicine occurring elsewhere for the benefit of their teaching and the local community. The resources they attract through research grants add to the corpus of available teachers and to the morale of the teaching staff. Moreover, while teaching and research commitments can be construed as competing for the time of busy professionals, often the contact engendered by interdisciplinary teaching has beneficial effects for research collaboration and vice versa.

Medical schools are expected to include research activity in the criteria for appointment of new staff. It is desirable that most academic staff be 'research active' and that all academic staff are seen to be involved in scholarly activities.

The medical school is expected to demonstrate a commitment to research with appropriate resource allocation and infrastructure support. An essential part of this requirement would be the establishment of a Research Committee to support and promote research activities in the school.

The school is expected to demonstrate how it will be involved with the rest of the university in research and in collaboration with other research institutes or organisations. All schools serve a local as well as a national community, and early research developments and collaborations would be expected to have more relevance to students if they addressed issues relevant to local needs.

## **1.8 Staff resources**

### Standards

*The medical school has a detailed staff plan that outlines the type, responsibilities and balance of academic staff required to deliver the curriculum adequately, including the balance between medical and non-medical academic staff, and between full-time and part-time staff.*

*The medical school has an appropriate profile of administrative and technical staff to support the implementation of the school's educational program and other activities, and to manage and deploy its resources.*

*Staff recruitment includes active recruitment by Australian schools of Aboriginal and Torres Strait Islander people and by New Zealand schools of Māori, together with appropriate training and support.*

*The school has defined the responsibilities of hospital and community practitioners who contribute to the delivery of the medical course and the responsibilities of the school to these practitioners.*

### Notes

The school needs to ensure that staff resources (academic, administrative and technical) match curriculum needs.

Where difficulty in recruiting appropriate staff exists, the medical school should take appropriate steps to resolve it, such as providing appropriate start-up funds or contracting staff from other universities or institutions for specific teaching and educational tasks. Adequate administrative support and infrastructure facilities should also be available.

In each department or discipline within the school, there must be a conscious effort to provide a balance of staff in relation to gender and age distribution, and to plan for the leadership succession, as well as policies to allow unsuccessful academics to exit university employment with dignity.

In Australian schools, Aboriginal and Torres Strait Islander staff and, in New Zealand schools, Māori staff should be actively recruited, trained and supported, and their unique skills, roles and responsibilities recognised and remunerated accordingly. The needs of Australian Aboriginal and Torres Strait Islander and New Zealand Māori staff or guest lecturers and tutors should be appropriately met, including preparation of a culturally safe teaching environment, adequate and comparable remuneration, and recognition of their relevant areas of expertise and generosity in contributing to the course. Suitable recognition may include academic titles.

The AMC recognises the significant contributions to medical education made by hospital and community practitioners, who are teachers and role models for students, and who provide insight into contemporary methods of patient care.

The number of hospital and community practitioners involved in teaching and assessing medical students is expanding as medical schools extend the range of settings in which students undertake clinical training, and as clinical training is provided earlier in the medical course. The medical school must communicate its goals and objectives for basic medical education to these practitioners and define its expectations of them. Clinical staff should have the opportunity to provide feedback on the curriculum. The medical school should establish practical programs to encourage clinical staff to participate in assessment of their teaching, appropriate performance review and teacher training.

Many universities provide clinical academic titles for practitioners involved in teaching and research. Explicit contracts may be appropriate for clinical and sessional academic staff.

## **1.9 Staff appointment, promotion and development**

### Standards

*The university and the medical school have appointment and promotion policies for academic staff that address a balance of capacity for teaching, research and service functions, and recognise meritorious academic activities with appropriate emphasis on research and teaching.*

*The medical school has processes for development and appraisal of administrative, technical and academic staff, including clinical title holders and those who hold joint appointments between the university and other bodies.*

*The medical school's employment practices are gender-balanced and culturally inclusive.*

### Notes

The quality of teaching staff is a vital ingredient of medical education. Effective teachers have a strong knowledge of their discipline, understand curricular design and pedagogy, and are committed to excellence in teaching. A successful medical school has academic staff who are committed to continuing scholarly productivity, thereby contributing to the educational environment of the medical school.

Good medical education occurs in an academic environment that allows scientific and clinical staff to interact in teaching, research, and health care delivery, in order to disseminate existing knowledge and to generate new medical knowledge.

Criteria for the appointment and promotion of academic staff must provide recognition for excellence in teaching, in research, and in service to the profession, the university, the local health service or the community as a whole.

In relation to Australian Aboriginal and Torres Strait Islander and New Zealand Māori staff, the medical school should actively respond to their professional development needs, including recognising that their work covers roles both within the medical school and in maintaining external responsibilities to, and relationships with, Indigenous communities.

The school's staffing plans and policies should be reviewed periodically against the social responsibilities of the institution and relevant equal employment opportunity legislation.

Staff development and review are formative and should provide opportunities for mentoring of younger staff. Staff development needs to be included in the formal responsibilities of heads of department and other supervisors.

## **1.10 Staff indemnification**

## Standards

*The university has arrangements for indemnification of teaching staff, with regard to their involvement in clinical research and the delivery of the teaching program.*

## 2 The outcomes of the medical course

### 2.1 Mission

#### Standards

*The medical school has defined its mission, which includes teaching, research and social and community responsibilities.*

*The school's mission addresses Indigenous peoples and their health.*

*The school's mission has been defined in consultation with academic staff and students, the university, government agencies, the medical profession, health service providers, relevant Indigenous organisations, bodies involved with postgraduate medical training, health consumer organisations and the community.*

#### Notes

Medical schools should clearly identify leadership, responsibilities and reporting structures for the coordination and implementation of an overarching Indigenous health strategy (including curriculum, student admission, recruitment and support, teaching and research). Indigenous people are a critical part of, but not solely responsible for, the strategy.

### 2.2 Medical course outcomes

#### Standards

*The medical school has defined graduate outcomes and has related them to its mission.*

*The outcomes are consistent with the AMC's goal for medical education, to develop junior doctors who possess attributes that will ensure that they are competent to practise safely and effectively under supervision as interns in Australia or New Zealand, and that they have an appropriate foundation for lifelong learning and for further training in any branch of medicine.*

*The outcomes are consistent with development of the specific attributes incorporating knowledge, skills and professional attitudes of medical graduates endorsed by the Australian Medical Council.*

#### Notes

The combination of knowledge, skills and attitudes that is considered an essential foundation for further pre-vocational and vocational training for medical doctors is very complex. These attributes cannot be defined simply as lists of factual knowledge, practical skills or competencies, as many are related to abstract qualities. Knowledge and practical skills are important, but understanding, problem-solving ability and appropriate attitudes relevant to caring for individuals who are suffering are at least of equal importance.

The AMC has endorsed a set of attributes of medical graduates (Part 2 of these guidelines). While each medical school defines the objectives and outcomes of its medical course, the AMC expects them to encompass attainment of these attributes.

The study of medicine involves substantial direct and intimate contact with patients and, together with the need to learn to work collaboratively with a range of health care professionals and others, creates serious demands of students.

## 3 The Medical Curriculum

### 3.1 Curriculum framework

#### Standards

*The medical school has a framework for the curriculum organised according to the overall outcomes which have, in turn, been broken down into more specific outcomes or objectives for each year or phase of the course.*

#### Notes

The range of curriculum models which medical schools may employ is wide, including case-based, system-based and discipline-based learning, and using organising principles such as domains and themes. Medical schools employ curriculum models that will enable them to achieve their desired outcomes and are capable of meeting the overall goal of medical education described earlier.

### 3.2 Curriculum structure, composition and duration

#### Standards

*The medical school has developed descriptions of the content, extent and sequencing of the curriculum that guide staff and students on the level of knowledge and understanding, skills and attitudes expected at each stage of the course.*

*The course provides a comprehensive coverage of:*

- *basic biomedical sciences, sufficient to underpin clinical studies*
- *scientific method, inquiry skills, critical appraisal and evidence-based medicine*
- *clinical sciences relevant to the care of adults and children*
- *the pathological basis of disease*
- *clinical skills (medical history construction, physical and mental state examination, diagnostic reasoning skills, problem formulation and construction of patient management plans)*
- *management of common conditions, including pharmacological, physical, nutritional and psychological therapies*
- *acute care skills and procedures relevant to practice at the level of an intern*
- *communication skills*
- *population, social and community health*
- *an understanding of the culturally diverse nature of Australian or New Zealand society and the development of appropriate skills and attitudes for medical practice in a culturally diverse society*
- *Indigenous health (studies of the history, culture and health of the Indigenous peoples of Australia or New Zealand)*
- *personal and professional development*
- *law and ethics*
- *patient safety and quality of health care*
- *interprofessional education.*

## Notes

Medical courses in Australia and New Zealand are diverse in length, sequencing and entry requirements. The AMC encourages this diversity. At the same time, medical courses need to be of sufficient duration to ensure a doctor at the beginning of their career has the necessary skills, knowledge and attitudes listed in Part 2 of these Guidelines. Based on international reference standards, a minimum course length of five calendar years for an undergraduate-entry course, and four years for a graduate-entry course, would normally be expected. In the light of experience, the AMC would need to see justification for a course of shorter or longer duration. In designing curricula, medical schools need to take account not only of curriculum content and course duration but also of student pastoral needs.

**The basic biomedical sciences** are the foundation of clinical medicine. Students must have sufficient knowledge and understanding of basic sciences applicable to the practice of medicine. It is essential that basic science teaching is relevant to the overall objectives of the medical course and that its relevance is apparent to students.

**Scientific method and evaluation of evidence** are fundamental to many aspects of modern medicine. The curriculum should include instruction in the principles of evidence-based practice and should foster critical thinking and analytical problem-solving by students. There are a variety of ways in which these aims may be achieved, including clinical problem-solving tasks, problem-based tutorials and exercises in evidence-based practice, as well as research projects and assignments. It is suggested that schools use a number of these approaches throughout the medical course.

Medical schools are encouraged to devise teaching and learning strategies that examine the interface between orthodox and complementary practices, in a context of evidence-based practice. Contemporary doctors must be aware that many patients are interested in, and choose to use, a range of therapies, and that some of these therapies will not be supported by evidence. Graduates must be aware of the existence and range of such therapies, why some patients use them, and how these might affect other types of treatment that patients are receiving. It is recommended that medical schools provide specific opportunities for students to examine the types of complementary practices and remedies most widely used.

**Clinical sciences and skills** is an essential component of any curriculum, and a significant period of time is devoted to students' personal contact with patients. This would normally entail the equivalent of at least two years spent primarily in direct contact with patients, as well as personal contact with patients during other parts of the course. During this time the student has the opportunity to learn of the complex interplay of causative factors and other pathogenic processes, and of psychological and physical factors in the patient. The roles of family and community supports and the influence of the physical, cultural, spiritual, psychological and social environment in determining the expression and course of disease in different individuals need to be witnessed. It is essential that students experience whole patient care.

The AMC believes that the most effective tool to enable students to develop clinical competence and judgment is participation in a variety of clinical clerkships. In addressing patient problems during a clerkship, students engage in active learning and develop the clinical sophistication required for practice under supervision at graduation. With appropriate supervision, clinical clerkships can be offered in small hospitals, ambulatory health care centres, urban and rural general practice, and Indigenous health settings, as well as large metropolitan hospitals. Students should have an opportunity to interview and examine a sufficient number of patients, with an appropriate case mix to achieve the educational objectives for the attachment.

Students need to gain adequate coverage of common clinical problems in both acute and chronic settings with relevant exposure to continuity of care and interaction with community-based services. The concepts of patient-centred care and chronic condition self-management are important in contemporary practice.

During training, medical students and vocational trainees are strongly influenced by the example set by their teachers, particularly those in active clinical practice or research. The importance of these teacher role models must be recognised. Role models of best medical practice set standards that are consciously or unconsciously adopted by students. Poor practice can have the converse effect.

Basic medical training is expected to develop doctors who exhibit clinical judgment appropriate to the tasks required of them as first year medical officers, such as recognising patterns of common illnesses, exceptions and ambiguities of clinical medicine, and recognising whether a patient is likely to deteriorate rapidly and need resuscitation. Clinical judgment is not synonymous with clinical knowledge, clinical skills, communication skills or ethical appreciation, although all these aspects of clinical practice are important components of good clinical judgment. Medical schools must assess students' clinical judgment abilities as part of their accountability to the medical boards and the public, and are expected to provide appropriate clinical opportunities to allow students to develop this judgment. They also have a responsibility to provide clinical assessments that reliably measure student attainment.

Many medical schools develop lists of clinical and practical skills that should be acquired by graduation, to guide students and their supervisors in ensuring that the students obtain experience in an appropriate range of common and important procedures. The AMC encourages medical schools to work with the postgraduate medical councils in developing statements that take into account the postgraduate medical councils' expectations of interns.

**Communication skills** – to listen, reflect understanding, provide information and advice and give feedback – are of key importance in medical practice. Health care environments are complex communication environments, involving a wide range of health professionals and administrators, and patients who will have their own social, emotional and cultural communication needs. The beginning doctor must be able to negotiate these environments and communicate effectively.

The study of **population, social and community health** issues includes developing the skills and knowledge needed:

- to identify determinants and measure the level of health and ill-health in populations and subpopulations
- to recommend and implement strategies for the promotion and maintenance of health, and the prevention and treatment of ill health in populations, including via interventions that extend beyond the health sector.

There needs to be an understanding and acknowledgement of the social, economic, cultural and behavioural factors in disease, both at individual and population levels. The prevention and treatment of disease should encompass consideration of these determinants.

The AMC has endorsed the **Indigenous Health** Curriculum Framework adopted by the Committee of Deans of Australian Medical Schools. The Framework provides details of subject areas and outcomes that make up learning about the health of Aboriginal and Torres Strait Islander peoples. The framework suggests that these be taught as part of core/ compulsory medical education. A searchable curriculum map is an invaluable tool to aid in demonstrating the course's achievement of these aims.

**Law and ethics** – medical students should have a good grounding in the principles necessary to prepare them for a profession that requires ethical decision-making within the context of an appreciation of the complexity of ethical issues related to human life and death. Similarly, students need to be aware that law and codes of ethical practice will regulate their professional practice. Professionalism and ethical conduct are important components in patient safety.

**Quality and safety** research in Australia, New Zealand and other countries has documented considerable variability in the quality of health care and a lack of alignment between the actual outcomes of care and what is considered to be ideal care. As a consequence, there is an emphasis in

health care institutions and health care policy on defining, measuring and publicising both the quality of care and the performance of doctors and organisations. Doctors work increasingly in health care systems that give significant attention to enhancing service to patients by assessing and managing risk, improving quality, and reducing errors and inefficiency. Accordingly, they need to know both how the health care system affects them and how they can improve the elements within their control. Medical courses need to address issues relating to quality assurance in health care, including systems management and best practice guidelines. Medical students need to understand how errors can happen in medical practice and the principles of managing risks.

**Interprofessional education** – all members of the health care team need to be competent in assessing, monitoring and managing risk. It is expected that medical students will be introduced to risk management principles and processes during their studies. This should include opportunities to appreciate the roles and function of all health care providers and how to work effectively as a health care team.

The capacity of students to meet course objectives will be enhanced by explicit statements about the level of knowledge and understanding, skills and attitudes expected at each stage of the course. For example, if clinical skills are acquired in each year of the program, the medical school should inform both students and tutors of the standards to be achieved by the end of each year.

### 3.3 Curriculum integration

#### Standards

*The different components of the curriculum are appropriately integrated.*

#### Notes

Within the range of course structures available, an important principle is that student learning should occur in a structured and integrated curriculum. This should include opportunities for both horizontal (within a course segment) and vertical (across successive course segments) integration of related subject matter. The process of integration can enhance student learning by demonstrating the relationship between course material and subsequent medical practice. Topic areas taught in isolation tend to be forgotten by students. Vertical integration should include opportunities to revisit and further develop material covered early in the course. Medical schools are encouraged to explore different means of achieving horizontal curriculum integration, such as conjoint clinical and basic science teaching, interdisciplinary seminars and problem-solving exercises.

### 3.4 Research in the curriculum

#### Standards

*The medical course emphasises the importance of research in advancing knowledge of health and illness and encourages, prepares and supports student engagement in medical research.*

#### Notes

All medical students can benefit from some direct contact with active researchers. An active research environment within a medical school provides medical students with opportunities to observe and participate in ongoing programs, either as mandatory or elective components of their curriculum. Exposure to an atmosphere of intellectual curiosity and enquiry promotes the enduring ability to solve problems, analyse data and update knowledge.

Students should have the opportunity for in-depth research experience to encourage an interest in medical research sufficient to enable them to enter higher research degree programs in their future careers. Specific research activities in a medical program might include:

- opportunities for students to participate in research of their own, or as part of a research group (research electives, summer studentships for research)
- formal instruction in research methodology as part of the medical course
- problems or instruction which address the critical analysis of research papers (e.g. critically appraised topics)
- facilitation of intercalated research degrees for medical students, or an integral research year as part of the medical program
- opportunities for medical students to interact with an active research group in a longitudinal way.

### **3.5 Opportunities for students to pursue choices**

#### Standards

*There are opportunities in the course for students to pursue studies of choice, consistent with course outcomes.*

#### Notes

The curriculum should encourage broad personal development of students, rather than being focused too narrowly on vocational training. Elective periods, self-directed learning, advanced study units in optional areas and intercalated years of research or work experience locally or abroad can help to develop this breadth of learning.

The goal of basic medical education must remain to produce graduates competent to practise safely and effectively under supervision as interns. The skills, knowledge and attitudes expected of a beginning doctor require broad understanding across the range of areas of medical practice. The offering of electives should be consistent with this goal.

Elective periods can provide students with the opportunity to study certain areas in depth, or to experience the practice of medicine in other environments, including developing countries and other settings. The AMC encourages electives during the medical course and considers that such periods add greatly to the diversity and/or depth of student experience and may also result in added clinical maturity.

The trend has been for medical courses to provide flexibility and more choice in allowing students to combine their medical studies with other studies, and to complete their medical studies in a wider range of settings, both locally and internationally. Educational exchanges with institutions in other countries provide opportunities for medical students to work with people from other cultures and experience other health care systems. Medicine is an increasingly international profession and doctors of the future will benefit from experience in a range of contexts. To facilitate informed choice, medical schools need to describe all the options available to students.

### **3.6 The continuum of learning**

#### Standards

*There is articulation between the medical course and subsequent stages of training.*

#### Notes

Undergraduate university education is one step in the education of doctors. Other phases, under separate jurisdictions in Australia and New Zealand, include prevocational in-service training, vocational training and education, research training, and continuing professional education. The AMC considers that collaboration between the various bodies concerned with medical education is essential to achieve appropriate quality assurance across the continuum of medical education.

The AMC regards the intern year as pivotal and considers that education gained prior to graduation from medical school cannot be considered in isolation from education gained after graduation, especially the early education, experience and training obtained during the intern year. A complementary relationship is essential. Thus, the AMC supports activities that aim to develop further the linkage between basic medical education and prevocational training.

A graded increase in practical involvement in patient management during the clinical years of the course should prepare students for the assumption of greater responsibility when they become interns. Medical schools and hospitals should develop specific transition programs in the final year of the course. The involvement of medical schools in setting the educational objectives for the intern year is therefore highly desirable. For this reason, medical schools should seek representation on those State bodies, such as postgraduate medical councils, which oversee intern training and early postgraduate medical training. The AMC, while not formally responsible for the internship, will assess the continuity of educational experience between the medical course and the intern year in the context of these standards. Specifically, the AMC will assess the opportunities for senior students, with appropriate supervision and management that recognises they are students and not interns, to perform in an intern-like role within the health service in the period immediately before completion of the medical course.

The AMC recognises that it is not possible to train students in all the attributes required for immediate medical practice, and that this is the function of further prevocational and vocational training, as is the acquisition of learning skills and attitudes that enable them to evaluate critically new advances in medical science and practice, and to apply their knowledge appropriately throughout their professional career.

## 4 The curriculum – teaching and learning

### 4.1 Teaching and learning methods

#### Standards

*The teaching and learning methods are appropriate for the content and outcomes of the course. They include those that are inquiry-orientated, encourage students to take responsibility for their learning process and prepare them for lifelong learning.*

#### Notes

The challenge for all medical schools is to develop curricula which, while not neglecting the transmission of factual knowledge and practical skills, also stimulate enquiry, develop analytical ability and encourage the development of desirable professional attitudes in the students. Such curricula emphasise active participation of students in the education process through self-directed learning, provide opportunities for studying certain areas in greater depth through optional or elective units, and allow exposure to a wide range of institutional and community experiences.

Because the scope of knowledge relating to medicine is growing so quickly, and because many aspects of practice are changing so rapidly, more emphasis should be placed on the principles underlying medical science and practice than on the acquisition of a detailed compendium of current knowledge or a comprehensive list of clinical skills.

In the past, the preclinical stages of medical education have relied on lectures and on practical classes, with some tutorials, whereas the clinical years have used clinical clerkships combined with lectures, diagnostic demonstrations and case conferences. The AMC recognises that didactic teaching can be an effective means of explaining important concepts and principles, and that clinical clerkships embody sound educational principles of active student participation, problem-solving and development of communication skills. It encourages medical schools to consider other educational strategies that promote student-centred rather than teacher-centred learning, promote active student enquiry, stimulate analytical and knowledge organisation skills, and foster lifelong learning skills.

Students must have opportunities to develop and improve their clinical and practical skills in an appropriate environment (where they are supported by teachers) before they use these skills in clinical situations. Skills laboratories and centres provide an excellent setting for such training.

Many doctors work as members of multi-professional teams and medical schools are encouraged to provide opportunities for students from a range of health disciplines to study together, modelling a future where team work is the foundation of practice.

The evolution of medical curricula in recent years has resulted in innovative teaching strategies and greater emphasis on small group and self-directed learning. Thus, complete dissection of the human body is no longer considered essential and is being replaced by study of prepared specimens and computer-based learning modules, which integrate structure and function. Similarly, many practical classes may be better replaced with interactive computer-based simulations for individual students which provide a valuable supplement to real world clinical experience. The rapid improvement in multimedia information technology has vastly expanded the potential for integrated learning throughout basic science and clinical medicine.

Information technology has an accepted role in medical practice and there is evidence that routine use of information and communication technologies contributes to improved health care. Students must be ready to use technology and communication tools as they are used in practice and flexible enough to incorporate changing technology.

## 5 The curriculum – assessment of student learning

### 5.1 Assessment approach

#### Standards

*The school has a defined and documented assessment policy which guides student learning towards attainment of the content and outcomes of the course.*

#### Notes

Assessment includes both summative assessment, for judgments about student progression, and formative assessment, for student feedback and guidance. The latter has an integral role in the education of medical students. The school's document defining assessment methods should address the balance between formative and summative elements, the number of examinations and other tests, a balance between written and oral examinations, and criteria for making judgments.

Assessment should be integrated across the curriculum to encourage students to develop an integrated approach to learning. Integrated assessment encourages the learning of important principles with more generic applications and reduces the tendency to learn excessive amounts of detailed information.

### 5.2 Assessment methods

#### Standards

*The school uses a range of assessment formats that are appropriately aligned to the components of the medical course.*

#### Notes

Contemporary approaches to assessment in medical education emphasise a programmatic approach where multiple measures of students' knowledge, skill and abilities over time are aggregated to inform judgments about progress. Assessment programs are constructed through blueprints which match assessment methods with outcomes. The strength of an assessment program is judged at the overall program level not on the psychometric properties of individual instruments. In such an approach highly reliable methods associated with high stakes examinations such as multiple choice questions (MCQs) or objective structured clinical examinations (OSCEs) can be used alongside instruments measuring domains such as independent learning, communication with patients, working as part of a health team, development of professional qualities and problem solving skills where reliability is less well established. The AMC encourages medical schools to develop assessment programs for their educational impact. A balance of valid, reliable and feasible methods should drive student learning to the course goals and outcomes.

The AMC considers it important that clinical examinations, whether on real or simulated patients, form a significant component of the overall process of assessment of the clinical disciplines. They provide an incentive to students to learn relevant knowledge and skills. Clinical examinations should include an assessment of student ability to recognise abnormal clinical findings (and their distinction from normal) and the ability to provide an appropriate interpretation of these findings. The AMC also encourages medical schools to utilise direct observation of student performance in in-training or other forms of clinical assessment.

### **5.3 Assessment rules and progression**

#### Standards

*The school has a clear statement of assessment and progression rules.*

*The school has clear and transparent mechanisms for informing students of assessment and progression requirements and rules.*

#### Notes

Assessment methods should be made known to students at the outset of the course or the course component.

Where students are required to undertake supplementary examinations, it is desirable that an opportunity for remediation be made available, although it is noted that this is not always possible under some university examination rules.

### **5.4 Assessment quality**

#### Standards

*The reliability and validity of assessment methods are evaluated and new assessment methods are developed where required.*

*The school has processes for ensuring that the educational impact and utility of assessment items are regularly reviewed.*

*The school ensures that the scope of the assessment, and assessment standards and processes are consistent across its teaching sites.*

#### Notes

When a medical school changes the objectives of its medical course, the assessment process and methods should reflect these changes. Assessment should address and be developed in conjunction with the new objectives.

Students undertake their clinical training at a wide variety of clinical sites. Some students will undertake more than half their clinical training at rural clinical schools and some, potentially, in Indigenous health settings. At some universities, students will have the opportunity to undertake a substantial proportion of their clinical training overseas. It is essential that medical schools have systems that ensure consistency in curriculum content, supervision, and assessment across clinical teaching sites.

## 6 The curriculum – monitoring and evaluation

### 6.1 Ongoing monitoring

#### Standards

*The school has ongoing monitoring procedures that review the curriculum content, quality of teaching, assessment and student progress, and identify and address concerns.*

*Teacher and student feedback is systematically sought, analysed and used as part of the monitoring process.*

*Teachers and students are actively involved in monitoring and in using the results for course development.*

#### Notes

Each medical school should develop mechanisms for monitoring and evaluating its curriculum, and for using evaluation results to assess performance against educational objectives. This requires the use of valid and reliable methods, and the collection of basic data about the medical curriculum.

It is appropriate that review of the overall curriculum leading to major restructuring occurs from time to time, but medical schools also need mechanisms to evaluate, review and make more gradual changes to the curriculum and its components. Additions to curricula need to be accompanied by corresponding reviews in other areas to avoid curricula overfilled with cognitive content. Internal processes should allow for the monitoring of curriculum implementation, and for change as requirements alter.

The value of evaluation data is enhanced by an evaluation plan. Such a plan addresses why the data are being collected, from whom and when, methods and frequency of data analysis, responsibility for receiving evaluation reports, and possible decisions or actions in response to particular findings. Indications of how and when poor results will be followed up are also part of an evaluation plan. Involvement of experts in medical education will further broaden the base of evidence for quality of the school's medical education.

Medical schools should ensure they evaluate their implementation of the Committee of Deans of Australian Medical Schools *Indigenous Health Curriculum Framework* on a regular basis.

The information gained from student evaluations is valuable in allowing problem areas to be identified. To be useful, there has to be a relatively high rate of completion, and the questionnaires must be carefully designed and evaluated. Mechanisms for feeding the information back to those responsible for designing and teaching individual courses or course components must exist. There may be good and defensible reasons for a specific component of the course being unpopular with a large proportion of students, but at least such components should be identified and the reasons for the students' perceptions analysed. If appropriate, the component should be altered.

In addition to student questionnaires, other pathways for student feedback should exist. The students should have ready access to the conveners of components of the course and to the administrative staff of the school so that concerns may be conveyed before major problems develop.

Australian Aboriginal and Torres Strait Islander and New Zealand Māori students should be consulted, as appropriate, but should not be expected to provide 'expert' advice on all matters 'Indigenous' within teaching and learning environments or public settings.

It is expected that medical schools will conduct teacher evaluations and/or will participate in university-wide procedures for ongoing evaluation of teaching and academic performance of their staff.

## 6.2 Outcome evaluation

### Standards

*The performance of student cohorts is analysed in relation to the curriculum and the outcomes of the medical course.*

*Performance is analysed in relation to student background and entrance qualifications, and is used to provide feedback to the committees responsible for student selection, curriculum planning and student counselling.*

*The school evaluates the outcomes of the course in terms of postgraduate performance, career choice and career satisfaction.*

*Measures of, and information about, attributes of the graduates are used as feedback to course development.*

### Notes

Schools are encouraged to participate in long term outcome evaluation projects, such as the Medical Schools Outcomes Database project sponsored by the Committee of Deans of Australian Medical Schools.

## 6.3 Feedback and reporting

### Standards

*The results of outcome evaluation are reported through the governance and administration of the medical school and to academic staff and students.*

*The medical school provides access to evaluation results to the full range of groups with an interest in graduate outcomes. The school considers the views of these groups on the relevance and development of the curriculum.*

### Notes

Medical schools should monitor and, where appropriate, respond to community perceptions about the qualities of doctors graduating from their schools. The AMC encourages medical schools to seek community representation on committees with responsibilities for governance, curriculum development and evaluation, including Australian Aboriginal and Torres Strait Islander or New Zealand Māori community members. Liaison with the medical boards is also desirable.

Feedback should be obtained from the hospitals where students work as interns and residents after graduation, from postgraduate medical councils, and from graduates.

Those with an interest in the school's outcomes include education and health care authorities, representatives of the community, relevant Australian Aboriginal and Torres Strait Islander people, and/or New Zealand Māori, individuals and organisations, and professional organisations and postgraduate education bodies including the specialist medical colleges.

## 6.4 Educational exchanges

### Standards

*The medical school collaborates with other educational institutions and compares its curriculum with other programs.*

### Notes

Australian and New Zealand medical schools have a history of cooperation and collaboration in education and research. Such collaboration is especially important in a time of scarce resources.

Participation in student exchange programs can foster educational links with other universities and create further opportunities for the medical school.

## **7 Implementing the curriculum - students**

### **7.1 Student intake**

#### Standards

*The size of the student intake, including the number of fee-paying students, has been defined and relates to the capacity of the medical school to adequately resource the course at all stages.*

*The school has clearly defined the nature of the student cohort, and quotas for students from under-represented groups, including Indigenous students and rural origin students.*

*The school has defined appropriate infrastructure and support to complement targeted access schemes for under-represented groups.*

#### Notes

In Australia and New Zealand, publicly funded institutions have predetermined domestic student intakes negotiated with government. Many medical schools also accept fee-paying or scholarship-supported students from other countries. Some also accept fee-paying local students.

Overseas students add to the heterogeneity of the student intake and enrich the educational experience of domestic students, as well as providing other educational links and important additional funding to medical schools. It is important that the numbers of overseas students do not overtax facilities or lead to a distortion of the educational objectives of the course. Appropriate language and counselling support for these students must be available. Before enrolment, overseas students should receive explicit statements about access to local internships, and to publicly funded places in the school, should they become a citizen or resident while still a student.

Most universities provide pathways to university study for nominated under-represented groups. Students admitted to medicine under such schemes may require a range of support services, for example, additional academic tutoring, personal and cultural support, counselling, mentoring, and physical facilities such as accommodation and financial support, meeting places, or physical assistance such as a note taker. In admitting these students, the medical school needs to be cognisant of its commitment to helping them succeed.

### **7.2 Admission policy and selection**

#### Standards

*The medical school has a clearly defined selection policy and processes that can be implemented and sustained in practice, that are consistently applied and that are intended to minimise discrimination and bias, other than explicit affirmative action in favour of nominated under-represented groups.*

*The school publishes details of the process, including the mechanism for appeals.*

*The school has specific admission and recruitment policies for Australian Aboriginal and Torres Strait Islander or New Zealand Māori students.*

*The intended relationship between selection criteria, the objectives of the medical course and graduate outcomes is stated.*

## Notes

The AMC recognises that there is no agreed method of selecting the most appropriate medical students, and supports diverse approaches by medical schools that include both academic and vocational considerations. In relation to Aboriginal and Torres Strait Islander students, the Australian Indigenous Doctors' Association Healthy Futures Report and Framework is a key resource to assist schools in the development of their strategy.

The AMC does not encourage an extensive and prescriptive list of prerequisite subject qualifications for entry into medicine. Medical schools should provide for supplementary tuition for otherwise well-qualified and appropriate students who lack experience in specific areas.

English is the language of instruction in Australian and New Zealand medical schools, and is the first language for both the Australian and New Zealand national health care systems. In some Australian States and Territories, proficiency in English is a legislative requirement for registration. Therefore, fluency in written and spoken English is a requirement for successful completion of the medical course.

Recruitment and admission policies relating to Australian Aboriginal and Torres Strait Islander and New Zealand Māori students should be designed, implemented and evaluated periodically ensuring relevant involvement of the Australian Aboriginal and Torres Strait Islander and/or New Zealand Māori communities (Elders, health services, community leaders).

Where interviews are used, the medical school should ensure that the interview process is as objective and fair as possible.

The selection policy should be reviewed periodically, based on relevant societal and professional data, to comply with the social responsibilities of the institution and the health needs of community and society.

Applicants should be advised that part of their medical education may take place in rural or other locations. Information should be provided on the likelihood of this, as well as any balloting system that may be used.

### **7.3 Student support**

#### Standards

*The medical school offers appropriate student support, including counselling, health and academic advisory services, to cater for the needs of students including social, cultural and personal needs.*

*The school has procedures to detect and support students who are not performing well academically.*

*The school has policies on the admission of, and procedures for, the support of students with disabilities and students with infectious diseases, including blood-borne viruses.*

*The school has procedures for identifying and dealing with students with needs related to mental health or professional behaviour issues.*

*The school has appropriate support for students with special support needs including those coming from under-represented groups or admitted through widening-access schemes.*

#### Notes

Medical students are at particular risk of stress-related problems, because of the workload in the course and the distressing circumstances they may face, especially in clinical settings. A culture within medical

schools that supports students and fosters a safe environment (including emotional, cultural and physical safety) is essential.

Attention should be paid to the time commitment required of medical students, especially during the clinical years. Students' expected hours for course participation should be determined taking into account the effects of fatigue and sleep deprivation on learning, clinical activities, and student health and safety.

Medical students may be asked to be involved as subjects in research and evaluation projects in medical education and other areas. The AMC expects that the school will have policies in place to protect students from undue or inappropriate demands to participate.

The medical curriculum should specifically address issues of self-care, doctor health and the responsibility to identify and assist peers in distress. Medical student associations, student mentors, and academic and general staff should encourage peer support as a duty of care.

Appropriate support services include access to counselling services with trained staff, a student health service, student academic advisers, and more informal and readily accessible advice from individual academic staff. Indigenous students should be particularly considered.

Given the relative isolation experienced by students on attachments to rural and remote sites, it is especially important that students are appropriately supported when away from their home campus.

Opportunities should exist for medical students who decide they are unsuited to medicine to exit the course early and receive counselling about further study and career options.

Physical disability or infections should not preclude a student from consideration for admission to a medical school. Medical schools need to have in place policies and procedures on how students with such disabilities or infections will be accommodated in the medical course. These policies and procedures should comply with relevant legislation and include:

- provision of reasonable accommodation for disabled students
- advice to potential students on both the demands of the medical course and the requirements of medical boards for provisional registration in the intern year
- support and counselling services to deal with student illness, impairment and disability during the medical course.

The medical school publication that advises prospective students of the selection process for entry should outline the school's policies with regard to disability and infection.

Medical schools should develop policies that articulate the school's responsibility to protect students from infectious diseases in the course of their studies. Policies should also address the responsibility of the school and the students to ensure that patients are not put at risk from infected students. The AMC endorses the Committee of Deans of Australian Medical Schools' *Guidelines for Infectious Diseases Policies and Programs for Medical Students*, which provide best-practice standards for infectious diseases policies and programs.

The award of a medical degree by the university certifies that the student has met the academic requirements of the medical course. Medical boards, whose primary responsibility is the protection of the public, set additional requirements for registration relating to fitness to practise medicine. Some, but not all, medical boards extend registration and care to students. It is essential that medical schools develop policies and procedures for dealing with medical students who meet the academic requirements for progression in the course but whose health or behaviour raises concerns about their fitness to practise medicine or to interact with patients.

Because AMC accreditation of a medical school provides the graduates with eligibility for registration as medical practitioners, the AMC will enquire into the medical school's mechanisms for dealing with students with impairment, and for addressing concerns about student health and behaviour issues with the medical board.

## **7.4 Student representation**

### Standards

*The medical school supports and encourages student representation in its governance and curriculum management.*

### Notes

The participation of students in school-based committees pertaining to the medical curriculum and student affairs serves to promote student ownership of the curriculum, and a degree of self-determination in the learning process. It also facilitates the early identification of problems and deficiencies in the course, and allows for the recognition and expansion of successful strategies and initiatives.

Regular informal meetings between senior faculty members and representatives of all year levels complement formal student representation on school committees, and allow for more in-depth exploration of student concerns and ideas. This is particularly important for students studying at locations distant from the school's main campus.

Strong school support for student organisations, at both the pre-clinical and clinical levels, aids greatly in encouraging student involvement in such groups, thereby maximising the quality of representation they can provide.

## **7.5 Student indemnification**

### Standards

*The school has adequately indemnified students for relevant activities.*

## **8 Implementing the curriculum – educational resources**

### **8.1 Physical facilities**

#### Standards

*The medical school has sufficient university-based physical facilities for staff and students to ensure that the curriculum can be delivered adequately.*

*The school has sufficient clinical teaching site physical facilities for staff and students to ensure that the curriculum can be delivered adequately.*

#### Notes

It is important that all institutions involved in teaching provide suitable facilities for students.

The physical facilities required for curriculum delivery include auditoriums, tutorial rooms, laboratories, laboratory equipment, clinical skills laboratories, libraries and audiovisual equipment. Facilities for student study and recreation should also be provided.

In hospitals, there should be facilities for quiet study and for relaxation. If the hospital is geographically separate from the university campus, library and computer-based literature search facilities should be provided. Appropriate services, such as library services and accommodation, are required when students are attached outside the main hospitals. Attention should also be given to providing appropriate resources for teaching in community centres.

Physical facilities must be adequate at all clinical sites, including rural, remote and overseas sites where students complete some of their course.

### **8.2 Information technology**

#### Standards

*The school has sufficient information technology resources and expertise for the staff and student population to ensure the curriculum can be delivered adequately.*

*Library facilities available to staff and students include access to computer-based reference systems, supportive staff and a reference collection adequate to meet curriculum and research needs.*

#### Notes

The use of information and communication technologies is an increasingly important part of medical practice, and facilities need to be adequate to accommodate staff and student needs, and acquaint students to the information and communication technologies environments in which they will work.

### **8.3 Clinical teaching resources**

#### Standards

*The medical school ensures there are sufficient clinical teaching and learning resources, including sufficient patient contact, to achieve the outcomes of the course.*

*The school has sufficient clinical teaching facilities to provide a range of clinical experiences in all models of care (including primary care, general practice, private and public hospitals, rooms in rural, remote and metropolitan settings and Indigenous health settings).*

*The school provides all students with experience of the provision of health care to Indigenous people in a range of settings and locations.*

*The school actively engages with relevant institutions including other medical schools whose activities may impact on the delivery of the curriculum.*

*The school ensures that the outcomes of the programs delivered in the clinical facilities match those defined in the curriculum.*

## Notes

Students need to be exposed to a range of settings in which health care and health promotion are delivered, including hospitals, ambulatory services, clinics, primary health care settings, health care centres and other community health care settings.

Changes in hospital practice in all hospitals in Australia and New Zealand have affected the clinical experience of students. Whilst the major hospitals have a concentration of facilities and teaching expertise, the acuity and complexity of the patients' illnesses mean these settings are insufficient to meet the requirements of medical students. The shorter length of patient stay has also made student learning more difficult.

Students need broad exposure to patients with a range of common medical, surgical, paediatric, gynaecological and psychiatric problems. They should have the opportunity to work in rural, suburban, community and private hospitals, in general practice, in community health centres, in nursing homes and in centres for those with chronic intellectual or physical disability. All students should be given an opportunity to work in Indigenous health settings. Since many hospitals now have only limited outpatient facilities, medical schools should consider the use of specialist private practices to provide the necessary clinical experience of ambulatory care.

The shortfall in clinical placements and supervision time - as well as the ethical tension involved in using patients as a convenient teaching medium - poses an enormous challenge for medical education and training. In addition, the increased number of medical schools in Australia in recent years has placed increasing pressure on clinical placements for students. New and existing schools must work collaboratively with other schools and with hospital partners and community-based health services at a State-wide or regional level to ensure that the needs of all schools can be met.

Many schools are developing, often in partnership with hospitals, sophisticated clinical skills laboratories in which students and hospital staff are able to develop basic and advanced clinical skills using a range of simulation techniques. Computer simulation of patient care scenarios is an exciting area, with educational potential. Indeed, the new technologies provide excellent possibilities for simulated clinical practice in low-risk environments, and medical schools should explore available information that might advise on the balance of simulated- and real-patient experience that could be utilised with effective outcomes.

It is essential that students be exposed to common medical problems of a more transient nature that are not seen in the hospital setting. They should also experience the effect of the family and the community environment on symptom expression and therapeutic responses. The ability to make management decisions based on probabilities without the help of a firm diagnosis can be enhanced in this setting. General practice experience is suitable for the development of such perspectives, and is also essential for students to make informed decisions about career choices.

Students need orientation to the health care setting when they start their clinical placement. Screening for appropriateness and cultural safety should be considered.

The medical school also needs to allocate sufficient resources to teaching in general practice, Indigenous health settings, the community and smaller hospitals.

All clinical placements should be supervised and well organised. The objectives and assessment of clinical placements should be defined and made known to both students and teachers and the community. Special effort should be made to monitor educational experiences in these clinical attachments. Schools should be able to demonstrate the means by which staff at dispersed sites participate in and are held accountable for student education and assessment.

