

Multiple Choice Question Examination Specifications

Australian Medical Council Limited - May 2023

“The purpose of the Australian Medical Council is to ensure that standards of education, training and assessment of the medical profession promote and protect the health of the Australian Community.”

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1. General introduction

1.1. Purpose of the document

These guidelines and specifications have been prepared to assist candidates for the Australian Medical Council (AMC) multiple choice question examination (MCQ). Candidates should make themselves fully aware of the information provided.

1.2. Privacy

The AMC observes the provisions of the *Privacy Act* which sets out the requirements for the collection and use of personal information collected.

The AMC's full Privacy Policy may be found on the AMC web site at <http://www.amc.org.au/about/privacy-policy>.

Application Forms required by the AMC may include a statement relating to the AMC's privacy procedures and may require specific consent from the applicant.

Please note: if this consent is not provided the AMC will not be able to process the application.

1.3. Aims and objectives of the AMC examination process

The AMC examination process assesses, for registration purposes, the medical knowledge and clinical skills of international medical graduates whose basic medical qualifications are not recognised by the Medical Board of Australia.

The process is designed as a comprehensive test of medical knowledge and clinical competence. There are two stages, the MCQ examination and the clinical examination. Both the MCQ and clinical examination are multidisciplinary and integrated.

The MCQ examination focuses on basic and applied medical knowledge across a wide range of topics and disciplines, involving understanding of disease process, clinical examination, diagnosis, investigation, therapy and management, as well as on the candidate's ability to exercise discrimination, judgment and reasoning in distinguishing between the correct answer and plausible alternatives. The MCQ is a computer-administered examination.

The clinical examination assesses the candidate's capacity in such areas as history taking, physical examination, diagnosis, ordering and interpreting investigations, clinical management and communication with patients, their families and other healthcare workers. For more information on the clinical examination, please refer to the Clinical Examination Specifications booklet on the AMC website www.amc.org.au.

1.4. Eligibility

International Medical Graduates (IMGs) who have a primary qualification in medicine and surgery awarded by a training institution recognised by the AMC are eligible to apply for assessment under the Pathway. For more information on how to apply, please visit the AMC website – www.amc.org.au.

1.5. Standard of the AMC examination

The standard of the AMC examination is defined as the level of attainment of medical knowledge, clinical skills and professional behaviours that is required of newly qualified

graduates of Australian medical schools who are about to commence intern training. These are described in the AMC graduate outcome statements listed in **Appendix A**.

The graduate outcomes form the basis of medical education in Australia and are used to accredit medical schools. They are expressed in terms of four overarching domains:

- 1) Science and Scholarship: the medical graduate as scientist and scholar
- 2) Clinical Practice: the medical graduate as practitioner
- 3) Health and Society: the medical graduate as a health advocate
- 4) Professionalism and Leadership: the medical graduate as a professional and leader

1.6. Standard of performance required

The MCQ examination requires the candidate to demonstrate, to the satisfaction of the examiners, knowledge, understanding, analysis and judgement at the level of a graduating final year medical student about to commence the (pre-registration) intern year, across a broad range of required clinical disciplines.

The MCQ examination is a test of the principles and practice of medicine in the fields of Adult Health - Medicine, Adult Health - Surgery, Women's Health - Obstetrics & Gynaecology, Child Health, Mental Health and Population Health & Ethics. The majority of the multiple-choice questions reflect common clinical conditions in the Australian community. In order to achieve a satisfactory level of performance, a candidate will require a knowledge of:

- Pathogenesis
- Clinical features
- Investigative findings
- Differential diagnosis
- Management and treatment.

Some questions in the MCQ examination will test basic or essential knowledge and understanding of topics covered by the examination. Other questions will require more higher-level cognitive skills and will test the candidate's ability to interpret clinical data and make diagnostic, investigative or management decisions. Questions may contain images of X-rays, electrocardiograms (ECGs), scans, clinical photographs and other visual material.

In general, the MCQ examination will test a candidate's capacity for reasoning rather than rote learning. The MCQ examination includes questions which are regarded as critical to the safety or clinical outcome for the patient, or are based upon important common conditions and one of:

- Related to life threatening illness; or
- Critical to safe practice (includes professionalism); or
- Successful clinical outcome; or
- Important aspects of public health

2. Structure and content of the MCQ examination

2.1. Structure of the MCQ examination

The MCQ examination is a computer administered examination comprising 150 multiple-choice questions administered over 3.5 hours.

At least half of the questions are taken from a pool of previously calibrated questions. The remainder of the questions are new questions – that is questions that have not previously been used in an AMC MCQ examination. These new questions and candidate responses are inspected and calibrated before being used for scoring.

The examination is delivered as a Computer Adaptive Test (CAT). A CAT format of MCQ is a form of computer-based test administration in which each candidate takes a unique, customised examination. Research has confirmed the comparability between CATs and fixed length tests, but with CATs requiring less than half the number of questions to obtain more precise results.

Each CAT MCQ examination is automatically equated to any other test drawn from the AMC pools. In the CAT MCQ format examination, for each candidate the first question is randomly selected from the item pool. If the answer to the question is incorrect, the next question chosen is a less difficult question; if correct, the next question is a more difficult question. This process is continued as the examination delivers questions based on the previous responses until the last question is reached. After each response, the computer calculates the ability estimate (“score”) based on all the information available and obtained to that point. The precision of the ability estimate improves as the process is continued because the questions are targeted to the latest ability estimate of each candidate.

A pass/fail point (cut score or standard) is defined for the whole examination, and each candidate is measured against this point regardless of the group of candidates with whom they are examined, or the particular set of CAT questions they are administered as part of the examination, or when they take the test.

2.2. Content of the examination

The 150 MCQ questions are selected or blueprinted in the following way.

PATIENT GROUPS									
AMC BLUEPRINT	CAT	MCQ	Adult health [Medicine]	Adult health [Surgery]	Womens health [Obs] [Gyn]	Child health	Mental health	population health	ITEM TOTALS
			(30%)	(20%)	(12.5%)	(12.5%)	(12.5%)	(12.5%)	150

Adult health - Medicine and Adult health - Surgery

These patient groups cover a broad spectrum of adult health and aged care, and involve a sound foundation knowledge of the medical sciences (physiology, biochemistry, anatomy, pharmacology) and an understanding of pathobiology and pathophysiology. They include developed and practiced clinical skills (communication, history taking, physical examination, counselling) an appropriate understanding of principles of treatment and familiarity with current management strategies (investigations, procedural interventions, drug and non-drug therapies).

Women's health

Gynaecology covers a broad spectrum of women's healthcare, and involves all principles of adult health as above. Obstetrics also embodies these principles with the addition of the understanding of the basic sciences as they apply to reproduction and the effects of pathobiology and pathophysiology on the reproductive process (pregnancy, labour, birth and the post-natal period).

Child health

Child health includes developmental dimensions of children's health from fetal development and transition to extra-uterine life to the end of adolescence, including growth, physical development, puberty and intellectual development in normal and abnormal situations. Clinical features and natural history of important conditions are covered including basic pathophysiology of medical and surgical conditions including recognition and management of developmental disability. Core clinical skills and management of common and important conditions in a range of settings (emergency, ambulatory, inpatient, convalescent) are included covering medical, surgical and psychosocial interventions.

Mental health

The assessment, diagnosis and management of psychological, behavioural and mental disorders and illnesses and addictions across all age groups, based on bio-psychosocial and cognitive principles. This includes history, mental state features, investigations and co-morbidities, with management to include the use of psychological/behavioural, physical, pharmacological and psychotherapeutic interventions, with their risks and benefits.

Population health and Ethics

Population health strategies are to improve the health of targeted populations, and include screening activities, surveillance, vaccination programs, population-level education, epidemiology and legislation or disease management measures. Population health concepts may arise in a range of health care settings and across all patient groups, and will include health promotion and disease prevention strategies. Ethical issues cover professional behaviour including boundary issues, patient confidentiality, informed consent and impairment of doctors. Legal issues embrace regulations covering the Australian health care system and the delivery of best practice medicine.

Examination questions within the CAT MCQ examination are classified in terms of both Clinician Tasks and Patient Groups, as follows:

CLINICIAN TASKS

Data Gathering

History taking, mental status examination, physical examination, laboratory testing, imaging, other investigations, and clinical reasoning.

Data Interpretation and Synthesis

Interpretation and synthesis of gathered data. Clinical reasoning, problem identification, setting priorities and risk stratification. Formulation of differential and specific diagnosis, causes and associations with presenting conditions.

Management

Education and health promotion, counselling, psychotherapy, drug and non- drug therapy (including fluid and electrolyte therapy), surgical interventions, radiological interventions, drug interactions and complications, cessation of therapy, rehabilitation, palliative care, interdisciplinary management, family and community care.

MCQ QUESTION PREPARATION

The MCQ examination is a comprehensive examination of medical knowledge and practice. The AMC recommends that candidates undertake a thorough review of the major topics covered in the examination.

Candidates should familiarise themselves with the MCQ format. Examples of the MCQ examination questions are set out in **Appendix B**.

In order for the candidates to familiarise themselves with the computer administered examination, an online MCQ Trial examination, consisting of 50 questions, is available on the AMC website – www.amc.org.au.

A wide range of general texts is readily available on this form of examination and its associated techniques. The AMC publication Annotated Multiple Choice Questions also covers these aspects.

REVIEW OF TOPICS

To assist candidates, the AMC has prepared a list of suitable resources, which is set out in **Appendix C**.

Please note that some of the listed suitable resources in **Appendix C** are intended to provide background reading on key topics and contain a great deal of reference material. The questions in the MCQ examination are oriented towards the more common clinical applications, differential diagnosis and therapeutics. Accordingly, care should be taken when using major reference type textbooks for revision. Many candidates find it more useful to undertake a comprehensive review of medical journals, such as Australian Family Physician, Current Therapeutics, Australian Prescriber or any of the other journals in general practice medicine. These journals contain useful review articles and summaries of the identification, treatment and management of the more common clinical conditions in the Australian community.

The AMC has prepared two major publications for candidates preparing for the MCQ and clinical examinations.

Anthology of Medical Conditions

The AMC publication Anthology of Medical Conditions has been produced not only to assist International Medical Graduates (IMGs) to prepare for the AMC Examinations but also as an essential tool for clinical practice. The publication lists over 130 Clinical Presentations of clinical conditions and classifies them to assist in a problem-solving approach to diagnosis and management.

It is essential for all doctors to be familiar with the laws of the society in which they practise medicine and the ethics that underpin medical practice. It is also important to understand the organisational aspects of medicine in the Australian context. The Anthology of Medical Conditions contains a separate section dealing with these important issues, entitled Legal, Ethical and Organisational Aspects of the Practice of Medicine (LEO). The publication is enhanced throughout with medical illustrations. The publication is recommended for use in preparing for the AMC Multiple Choice Question (MCQ) and Clinical Examinations.

To purchase the Anthology of Medical Conditions, go to the AMC's online store at <https://store.amc.org.au/>

The Anthology of Medical Conditions is currently under review and will be replaced by a new publication. Candidates will be advised when this is due to occur to assist with examination preparation.

Handbook Of Multiple Choice Questions

The AMC Handbook of Multiple Choice Questions is about to be superseded by an App with items representative of the style, topics and content of the AMC MCQ Examination. Candidates will be advised when this is due to occur to assist with examination preparation.

RECONSTRUCTED AMC PAPERS

The AMC is aware that MCQ examination papers which are circulated or available via the internet are claimed to be accurate reproductions of AMC MCQ examination papers. Candidates should exercise care when using these reconstructed papers. The AMC has been provided with copies of these papers and has found many of the question stems and responses to be incorrect. Candidates who base their preparation on such reconstructed papers may have a distorted impression of the format and content of the actual multiple choice questions used in the AMC examination.

STRATEGIES FOR ANSWERING MULTIPLE CHOICE QUESTIONS

A-TYPE QUESTIONS (ONE OUT OF FIVE CORRECT)

Each question consists of a stem followed by five suggested answers or completions. The candidate is required to select the best answer to the question or the best response to the statement. A-type questions aim to determine whether the candidate can differentiate the correct item of information, procedure, treatment or so on, from the plausible alternative. Answers or responses other than the single best answer may be partially correct, but there is only one best answer or response to this type of question.

The candidate should:

- read each question or statement carefully to understand what is being asked

- read each option carefully and eliminate those which appear to be only partially correct
- select the option that they consider to be the most appropriate answer.

IMAGE OR DATA INTERPRETATION QUESTIONS

In this type of question, an image, diagram, graph, X-ray, ECG or scan is followed by a question or statement and five responses. The candidate is required to decide which is the best answer or response. The aim of this type of question is to test appropriate clinical material in the MCQ examination.

In image and data interpretation questions, candidates may find it easier to read the question or statement first in order to determine what is being asked and then study the image or diagram. It is easier to find the specific information in the image or diagram to answer the question or complete the response if you know what is required

NO REVIEW OF ITEMS

In the MCQ computer administered examination candidates should complete, in the 3.5 hour examination session, all 150 questions. Each question must be answered before a further question will be administered – that is a candidate is not permitted to not answer a question and progress to the next question, and so may not go back to an unanswered question.

Similarly, once a question has been answered, a candidate cannot go back to a previous question and change a response.

Candidates who have previously attempted the MCQ should note this change to remove the ability to review answers. This change brings the AMC MCQ into line with many other MCQ CAT examinations, nationally and internationally, and has been introduced to improve examination question security.

OTHER IMPORTANT INFORMATION

- Marks will not be deducted for incorrect answers.
- Items are randomised across the blueprint.
- Candidates are advised to pace themselves to balance the need to complete all questions while taking appropriate time to answer each question.
- A timer-clock is included in the examination platform for each individual candidate.

2.3. Scoring of the MCQ Examination

As stated, candidates are expected to answer all 150 MCQ questions in the examination.

It is important to note that the determination of a candidate's ability is not based simply on the number of correct answers given by the candidate. Because of the CAT component of the examination some candidates would have been administered difficult questions whilst others would have been administered easier questions – depending on the correct or incorrect answers to previous questions. Therefore, if candidates have the same number of correct answers, the ability of the candidate that answered the difficult questions will be higher than the ability of the candidate that answered the easier questions.

The AMC score is based on measurement of the candidate ability level and (for convenience) represented on a scale of 0 to 500. A passing score is represented on the scale at 250.

Failure to complete all 150 items in the AMC CAT MCQ examination may lead to insufficient information for a reliable ability to be determined and therefore a result on the AMC adaptive scale. The examination result may be recorded as Fail – insufficient data to obtain result.

Each candidate receives a computer-generated transcript of their results and feedback on their performance in the MCQ examination.

3. Enrolment for the MCQ Examination

3.1. Registration for MCQ examination

The specified dates and times of MCQ examinations are available upon log in to the candidate portal, which can be accessed via the AMC website at www.amc.org.au.

Candidates may only apply for one examination at a time. Therefore, candidates who have been scheduled for a MCQ examination may not lodge an application for another examination before they have received the results of the scheduled examination.

3.2. Venue and scheduling

The AMC conducts the MCQ examinations throughout the year, in centres within Australia and overseas. To view a list of examination venues, please visit www.vue.com/amc.

Pearson VUE provides the venues for the AMC MCQ Examination and controls the online scheduling for AMC candidates to obtain an examination event appointment.

The 12-month authorisation allows you to select the most suitable MCQ examination event. You can change examination events and venues without penalty before the closing date for the event, but no changes will be allowed after the closing date.

Once you have received an email from Pearson VUE confirming your authorisation, you may schedule for an AMC MCQ examination event by selecting one of the following options:

- Pearson VUE online candidate scheduling system
- Pearson VUE Contact Centres.

You can schedule into only one of the MCQ examination events covered in your authorisation. Some examination venues have very limited seat capacity, so places are allocated on a first come, first served basis. It is vital that you schedule immediately after you have received your authorisation notification.

Once you have scheduled your examination event with Pearson VUE, the AMC will email you an official AMC placement letter.

Candidates must arrive promptly and report to the administrative staff in attendance. Once candidates have reported, they will be required to remain, under the direction of the administrative staff, until the examination session concludes.

Candidates arriving late may be excluded from commencing the examination.

4. Fees

4.1. Examination fees

Payment of the examination fee will confirm the placement in the relevant MCQ examination session.

Candidates who withdraw after accepting a MCQ place will incur a withdrawal fee, the amount of which will depend on the date of the withdrawal.

The fees for the AMC examination are reviewed from time to time and are subject to variation.

The examination fees for the MCQ examination (based on current examination costs) are shown on the AMC website (www.amc.org.au). Information regarding withdrawal fees currently applying to the examination are also available on the AMC website.

5. Preparing for the MCQ and the process of the examination

5.1. Before the Examination

The following points are suggested to assist candidates in planning for and sitting the MCQ examination.

5.1.1. Planning for the examination

Candidates should:

- Get a good night's rest before presenting for the examination
- Avoid the use of stimulants or other drugs that may impair your performance
- Read their placement letter carefully and note the times and exact location of their examination
- Ensure they arrive on time for each MCQ examination session and give themselves time to settle down before the examination commences
- If travelling from interstate, ensure that they check any interstate time differences and allow extra time in case of delayed flights or travel time between the airport and the city.

5.2 At the examination

5.1.2. AMC Procedure

Candidates reporting for the MCQ examination are required to present two forms of Identification (ID):

- One primary ID (government-issued with name, photo, and signature) – e.g. passport; and
- One secondary ID (name and signature) – e.g. bank card or driver's licence.

Conditions:

- ID documentation presented must be original (no photo copies) and valid (unexpired), with the first name and last name on AMC records to match exactly the first name and last name on the IDs presented on the test day.
- Expired forms of ID will not be accepted unless accompanied by valid renewal papers.
- Any government-issued ID that is missing a visible signature or containing an embedded signature can be supplemented with an original, valid ID that shows a matching name and signature. An additional, secondary ID will still be required.

All candidates must comply with the instructions of MCQ examination supervisors during examinations. Failure to do so will constitute a breach of examination procedures and may result in action being taken against the candidate concerned. Candidates are expected to conduct themselves courteously in examinations, correspondence and personal contact with examiners, employees or agents of the AMC. A candidate who does not comply with the instructions of an MCQ examination supervisor, or whose conduct is disruptive or is considered by the AMC to have been outside the bounds of reasonable and decent behaviour, may be debarred from continuing with the examination.

No books or examination material may be used in the AMC MCQ examination. Candidates found to be giving, receiving or recording information during examinations will not be permitted to continue in the examination and may forfeit their eligibility to sit future AMC examinations.

As the AMC MCQ examination is computer administered, the AMC and the computer vendor will make every effort to ensure a smooth and orderly examination administration. However, in extraordinary circumstances beyond the control of the AMC, such as a significant power outage, computer malfunctions or network difficulty, the AMC will take such circumstances into account.

In instances where technical issues prevent a candidate from completing the AMC MCQ examination under standard conditions, the AMC MCQ Panel may review the results of the quality assurance procedures and the statistical analyses of candidate responses, to determine whether the results obtained by a candidate reliably reflect their true level of ability. The MCQ Panel may also order a new examination to be undertaken. No additional examination fee will be charged.

The AMC will NOT be responsible for any other costs associated with the examination, including travel costs.

Whilst the AMC provides examination venues to AMC candidates undertaking the examination process, the AMC does not provide 'prayer rooms' for candidates on the day of the examination. Candidates are required to make their own arrangement if a quiet place is required. It should also be noted the timing schedule of the examination cannot be delayed due to observance of religious requirements.

Candidates are in breach of the examination process if remaining in the examination venue when directed to leave.

Family and friends accompanying candidates to an examination are NOT permitted to enter the examination venue.

6. Results

Candidate results will be available to download from their candidate portal at 9.00am on the Thursday, four weeks following their AMC CAT MCQ examination. This is in accordance with the process notified on the AMC website - <https://www.amc.org.au/assessment/mcq/mcq-results/>

Please note: Under no circumstances will results be given over the telephone.

7. Candidate conduct

7.1. General conduct of candidates

Candidates are expected to conduct themselves courteously in examinations, correspondence and in personal contact with examination centre staff, employees or agents of the AMC and other candidates. Candidates whose conduct is disruptive, or is considered by the AMC to have been outside the bounds of reasonable and decent behaviour, may be excluded from the examination and/or refused the opportunity to sit future AMC examinations.

All candidates must comply with the instructions of MCQ examination staff during examinations. Failure to do so will constitute a breach of examination procedures and may result in the candidate being excluded from the examination or refused the opportunity to sit future examinations.

A doctor who crosses professional boundaries while undertaking the AMC MCQ examination may be guilty of professional misconduct and may be investigated and subjected to disciplinary action by regulatory authorities.

7.2. Unsatisfactory Results

A feature of the MCQ examination is that because it enables statistical analysis of a candidate's performance, the AMC can form a reliable opinion as to whether the candidate's performance in the examination can be confidently accepted as a fair reflection of the candidate's ability.

Under the *Health Practitioner Regulation National Law*, which regulates registration of doctors in Australia, a fundamental principle is to provide for the protection of the public.

Accordingly, if on analysis the AMC becomes concerned that the candidate's performance may not be confidently accepted as a fair reflection of the candidate's ability, the AMC may identify this concern to the candidate and seek an explanation. The CEO of the AMC will consider the issue, including any explanation from the candidate, and determine whether to withhold a result from the candidate because the CEO decides that the candidate's result cannot be confidently accepted as a fair reflection of the candidate's ability. (This may come about because, for example, analysis indicates that a candidate's results have been materially affected by pre-knowledge of questions or rote learning or regurgitation of pre-learned answers.)

In this circumstance the candidate will be invited to attempt the MCQ examination again.

7.3. Irregular Behaviour

Any attempt to circumvent the objectives or processes of the examination (as described in these Specifications or in other material made available to candidates), the reliability of candidate assessment, or the security of the examination or examination content, may:

- a. produce exam results which cannot be confidently accepted as reflecting a candidate's true ability,
- b. compromise the integrity and security of the MCQ examination and MCQ examination content, and/or
- c. detract from or impede the AMC purpose of protecting the health of Australian patients and communities.

Accordingly, any candidate:

- found with recording equipment, or recording any aspect of the examination during the examination; or
- who discloses or attempts to disclose or compromise the examination content or procedures (including but not limited to, supplying, offering to supply, selling, or offering for sale materials or details purporting to be AMC examination content); or
- who acts in any way that is in breach of the AMC's intellectual property rights in the examination content or procedures, or inconsistent with those rights; or
- who cheats, or receives or seeks inappropriate outside assistance in their performance in any examination; or
- who otherwise behaves in any inappropriate manner such that the AMC cannot have confidence that the assessment of the candidate is an accurate reflection of the candidate's ability; or
- who provides inappropriate assistance to another candidate, such that the AMC cannot have confidence that the assessment is an accurate reflection of that other candidate's ability; or
- who participates in an examination for a purpose other than a genuine desire to pass that examination, or whose performance in the examination is particularly poor such that it appears that the candidate's purpose in attempting the examination is other than a genuine desire to pass that examination;

may be subject to the following disciplinary processes:

- Any concern identified by the MCQ Results Panel will be reported by the MCQ Results Panel to the CEO for review. The MCQ Results Panel may withhold awarding a result for the examination.
- The candidate will be informed of the concern in writing and provided with an opportunity to respond.
- The AMC CEO will consider all the material, including any response from the candidate, and will determine a final decision regarding the candidate examination result.
- The AMC CEO may also decide that the candidate may not be permitted to continue with any AMC assessment, may be refused the opportunity to sit future examinations, may have their results in the examination withdrawn, may be refused a result for the

examination, may be refused the award of the AMC certificate, may have their AMC certificate withdrawn, and/or be reported to the appropriate authorities including the Medical Board of Australia/Australian Health Practitioner Regulation Agency (MBA/Ahpra) or law enforcement authorities.

- Where a concern is identified during the course of an MCQ examination and reported to the AMC CEO, the same person may direct that the candidate be immediately excluded from the examination, and the matter be referred to the MCQ Results Panel for further investigation in accordance with these specifications.

All AMC candidates should be aware that, under Australian law, copyright of all examination materials rests with the Australian Medical Council. No part of any examination may be reproduced, stored or transmitted by any means.

8. Other general information

8.1. Change of address

Candidates are required to update their contact details by logging onto their [AMC account](#) and selecting “Update contact details” on the landing page.

8.2. Further information

If a candidate is in doubt about any aspect of the AMC examination, he/she should contact the AMC secretariat:

Australian Medical Council
PO Box 4810
Kingston ACT 2604 Australia

Email: MCQ@amc.org.au
Website: www.amc.org.au

Appendix A: The AMC graduate outcome statements

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

Included below is the list of graduate outcome statements. These statements, divided into four domains, reflect the skills, knowledge and attitudes that Australian medical students are required to demonstrate upon graduation. Graduate outcome statements can also be found in the AMC's *Standards for assessment and accreditation of primary medical programs*.

Domain 1

Science and Scholarship: the medical graduate as scientist and scholar

On entry to professional practice, Australian and New Zealand graduates are able to:

- Demonstrate an understanding of established and evolving biological, Clinical, epidemiological, social, and behavioural sciences.
- Apply core medical and scientific knowledge to individual patients, populations and health systems.
- Describe the aetiology, pathology, Clinical features, natural history and prognosis of common and important presentations at all stages of life.
- Access, critically appraise, interpret and apply evidence from the medical and scientific literature.
- Apply knowledge of common scientific methods to formulate relevant research questions and select applicable study designs.
- Demonstrate a commitment to excellence, evidence based practice and the generation of new scientific knowledge.

Domain 2

Clinical Practice: the medical graduate as practitioner

On entry to professional practice, Australian and New Zealand graduates are able to:

- Demonstrate by listening, sharing and responding, the ability to communicate clearly, sensitively and effectively with patients, their family/carers, doctors and other health professionals.
- Elicit an accurate, organised and problem-focussed medical history, including family and social occupational and lifestyle features, from the patient, and other sources.
- Perform a full and accurate physical examination, including a mental state examination, or a problem-focused examination as indicated.
- Integrate and interpret findings from the history and examination, to arrive at an initial assessment including a relevant differential diagnosis. Discriminate between possible

differential diagnoses, justify the decisions taken and describe the processes for evaluating these.

- Select and justify common investigations, with regard to the pathological basis of disease, utility, safety and cost effectiveness, and interpret their results.
- Select and perform safely a range of common procedural skills
- Make Clinical judgements and decisions based on the available evidence. Identify and justify relevant management options alone or in conjunction with colleagues, according to level of training and experience.
- Elicit patients' questions and their views, concerns and preferences, promote rapport, and ensure patients' full understanding of their problem(s). Involve patients in decision making and planning their treatment, including communicating risk and benefits of management options.
- Provide information to patients, and family/carers where relevant, to enable them to make a fully informed choice among various diagnostic, therapeutic and management options.
- Integrate prevention, early detection, health maintenance and chronic condition management where relevant into Clinical practice.
- Prescribe medications safely, effectively and economically using objective evidence. Safely administer other therapeutic agents including fluid, electrolytes, blood products and selected inhalational agents.
- Recognise and assess deteriorating and critically unwell patients who require immediate care. Perform common emergency and life support procedures, including caring for the unconscious patient and performing CPR.
- Describe the principles of care for patients at the end of their lives, avoiding unnecessary investigations or treatment, and ensuring physical comfort including pain relief, psychosocial support and other components of palliative care.
- Place the needs and safety of patients at the centre of the care process. Demonstrate safety skills including infection control, graded assertiveness, adverse event reporting and effective Clinical handover.
- Retrieve, interpret and record information effectively in Clinical data systems (both paper and electronic).

Domain 3

Health and Society: the medical graduate as a health advocate

On entry to professional practice, Australian and New Zealand graduates are able to:

- Accept responsibility to protect and advance the health and wellbeing of individuals, communities and populations.
- Explain factors that contribute to the health, illness, disease and success of treatment of populations, including issues relating to health inequities and inequalities, diversity of cultural, spiritual and community values, and socio-economic and physical environment factors.
- Communicate effectively in wider roles including health advocacy, teaching, assessing and appraising.
- Understand and describe the factors that contribute to the health and wellbeing of Aboriginal and Torres Strait Islander peoples and/or Māori, including history, spirituality and relationship to land, diversity of cultures and communities, epidemiology, social and political determinants of health and health experiences. Demonstrate effective and culturally competent communication and care for Aboriginal and Torres Strait Islander peoples and/or Māori.
- Explain and evaluate common population health screening and prevention approaches, including the use of technology for surveillance and monitoring of the health status of

populations. Explain environmental and lifestyle health risks and advocate for healthy lifestyle choices.

- Describe a systems approach to improving the quality and safety of health care.
- Understand and describe the roles and relationships between health agencies and services, and explain the principles of efficient and equitable allocation of finite resources, to meet individual, community and national health needs.
- Describe the attributes of the national systems of health care including those that pertain to the health care of Aboriginal and Torres Strait Islander peoples and/or Maori.
- Demonstrate an understanding of global health issues and determinants of health and disease including their relevance to health care delivery in Australia and New Zealand and the broader Western Pacific region.

Domain 4

Professionalism and Leadership: the medical graduate as a professional and leader

On entry to professional practice, Australian and New Zealand graduates are able to:

- Provide care to all patients according to “Good Medical Practice: A Code of Conduct for Doctors in Australia” and “Good Medical Practice: A Guide for Doctors” in New Zealand.
- Demonstrate professional values including commitment to high quality Clinical standards, compassion, empathy and respect for all patients. Demonstrate the qualities of integrity, honesty, leadership and partnership to patients, the profession and society.
- Describe the principles and practice of professionalism and leadership in health care.
- Explain the main principles of ethical practice and apply these to learning scenarios in Clinical practice. Communicate effectively about ethical issues with patients, family and other health care professionals.
- Demonstrate awareness of factors that affect doctors’ health and wellbeing, including fatigue, stress management and infection control, to mitigate health risks of professional practice. Recognise their own health needs, when to consult and follow advice of a health professional and identify risks posed to patients by their own health.
- Identify the boundaries that define professional and therapeutic relationships and demonstrate respect for these in Clinical practice.
- Demonstrate awareness of and explain the options available when personal values or beliefs may influence patient care, including the obligation to refer to another practitioner.
- Describe and respect the roles and expertise of other health care professionals, and demonstrate ability to learn and work effectively as a member of an inter-professional team or other professional group.
- Self-evaluate their own professional practice; demonstrate lifelong learning behaviours and fundamental skills in educating colleagues. Recognise the limits of their own expertise and involve other professionals as needed to contribute to patient care.
- Describe and apply the fundamental legal responsibilities of health professionals especially those relating to ability to complete relevant certificates and documents, informed consent, duty of care to patients and colleagues, privacy, confidentiality, mandatory reporting and notification. Demonstrate awareness of financial and other conflicts of interest.

Appendix B: Sample MCQ's

SAMPLE QUESTIONS

This appendix contains sample question items, which reflect the format and structure of questions to be used in the MCQ examination. The sample questions are provided as a representative sample only.

For the MCQ examination there will be a total of 150 questions.

IMAGE QUESTIONS

In the AMC MCQ examination, photographic questions may be included.

SAMPLE MCQ EXAMINATION

A one-year-old uncircumcised boy presents with 24 hours of fever, pain on urination and some blood in the urine. Which one of the following is the most appropriate method of obtaining a urine sample?

- A. Clean catch mid stream sample
- B. Bladder pressure to obtain clean catch sample
- C. Clean catch urine bag collection
- D. Urinary catheter
- E. Suprapubic bladder tap

A baby is born at term by ventouse delivery with light meconium staining of the liquor. At birth he is slow to breathe and his Apgar scores are 3 at one minute, 5 at five minutes and 9 at ten minutes. Which one of the following components is most important for successful resuscitation?

- A. Mouth and nose suction
- B. Guedel airway placement
- C. Adequate ventilation**
- D. Supplemental oxygen
- E. Tracheal intubation

A 20-month-old boy is with his mother in the supermarket. He puts a lollipop in the trolley and becomes enraged when his mother puts it back. He starts to cry vigorously then suddenly stops breathing. He becomes cyanosed, loses consciousness and has a brief tonic clonic seizure. On examination 15 minutes later, he is alert and interactive. His BP is 95/60mmHg, pulse is 100/min, temperature 37.6°C and neurological examination is normal. Which one of the following is the most likely diagnosis?

- A. Febrile convulsion
- B. Breath-holding spell**
- C. Epilepsy
- D. Syncopal episode
- E. Encephalitis

A 9-year-old Aboriginal girl presents to a regional hospital with the complaint that her ankle has become increasingly painful over the last three days. She had fallen from play equipment at school a week earlier. Except for a recent episode of pharyngitis her previous health has been good. Her temperature is 38.5°C and her pulse rate is 95/min. On physical examination she has a mildly swollen ankle with some pain on movement, but the examination is otherwise normal. The heart sounds are normal and no murmur is heard. The lungs are clear. Which one of the following is the most appropriate initial investigation?

- A. X-ray of ankle.,
- B. Full blood count and ESR**
- C. Ross River virus serology
- D. Ankle joint aspiration
- E. Rheumatoid serology

A 35-year-old woman presents following an intentional overdose. She called an ambulance and admits to taking sertraline but refuses to give any further details. On examination she is irritable, uncooperative and abusive. Her BP is 125/87 mmHg, pulse 112/min and temperature 37.2°C. In addition to β -hCG, which one of the following is the most important investigation?

- A. Arterial blood gas
- B. Blood alcohol level
- C. Urine drug screen
- D. ECG
- E. Paracetamol level**

A 26-year-old woman has been diagnosed with schizophrenia. She lives with her parents. The history is a gradual onset of symptoms from the age of 19. She is now stable on amisulpride 800 mg per day. She has never worked but continues to make attempts to find employment. She complains of difficulty concentrating and thinking clearly and of problems "feeling" her body. Which one of the following is most likely to be associated with a poorer prognosis?

- A. Use of high dose antipsychotic
- B. Insidious onset of illness**
- C. Living with her parents
- D. Somatic sensory deficits
- E. Chronic thought disorder

A 14-year-old girl is brought in by her mother who is concerned about her daughter's low moods and tearfulness. The girl describes six months of feeling sad and anxious with a decrease of energy and loss of interest in recreational activities. Her school grades have deteriorated. She has occasional suicidal thoughts but no plans. Which one of the following is the most appropriate next step in management?

- A. Arrange admission
- B. Commence sertraline
- C. Commence fluoxetine
- D. Cognitive behavioural therapy**
- E. Encourage physical and social activities

A 50-year-old man presents asking for a prostate cancer blood test. He says he has no obstructive or irritative lower urinary tract symptoms. Which one of the following is the most appropriate next step?

- A. Discuss the pros and cons of prostate cancer screening**
- B. Perform a digital rectal examination and prostate specific antigen (PSA) blood test
- C. Arrange a urinary tract ultrasound to assess prostate morphology
- D. Advise that screening is not necessary in the absence of symptoms
- E. Arrange a prostate biopsy

A 45-year-old woman seeks information about her 18-year-old daughter during her own consultation with the family's general practitioner. She is worried about her daughter and believes that she is depressed and has been seeking contraceptive advice from the doctor. She seeks confirmation of this. Which one of the following is the most appropriate action?

- A. Ask that she attend with her daughter at the daughter's next appointment
- B. Discuss the daughter's depression with her
- C. Telephone the daughter now regarding her mother's request
- D. Advise her you cannot discuss any other patients**
- E. Advise that you have not seen the daughter as a patient

A 27-year-old man with a history of heroin dependence presents to the Emergency Department with abdominal pain and vomiting. He appears agitated in mood, and has tachycardia and fever and dilated pupils. He admits recent use of cocaine and heroin. Which one of the following clinical findings is most helpful in differentiating cocaine intoxication from heroin withdrawal?

- A. Agitation
- B. Abdominal pain and vomiting
- C. Tachycardia
- D. Dilated pupils
- E. Fever**

A 23-year-old woman presents to her general practitioner at 16 weeks gestation in her first pregnancy with frequency and mild stinging when she passes urine. Her temperature is 37.3°C and pulse 84/min. On abdominal palpation there is suprapubic tenderness. Which one of the following is the most appropriate management?

- A. No treatment as these symptoms are common in pregnancy.
- B. Request a midstream urine specimen and await culture.
- C. Prescribe a wide-spectrum antibiotic after midstream urine specimen collection.**
- D. Insert an indwelling catheter to ensure free drainage of urine.
- E. Perform a suprapubic bladder tap to obtain an uncontaminated urine specimen

A 37-year-old woman presents to the Emergency Department at 12 weeks gestation in her fourth pregnancy with intermittent lower abdominal cramps and vaginal bleeding. She has a regular cycle with five days of bleeding every 28 days, and is certain of her dates. Her previous three pregnancies each ended in miscarriage before 10 weeks. Speculum examination confirms a moderate amount of blood with clots in the vagina. On bimanual palpation, the uterus is anteverted with size equivalent to 8 weeks gestation. The cervix easily admits one finger. Which one of the following is the most likely diagnosis?

- A. Cervical incompetence
- B. Threatened miscarriage
- C. Missed miscarriage
- D. Incomplete miscarriage**
- E. Ectopic pregnancy

A 29-year-old primigravid woman at 36 weeks gestation presents after not noticing any fetal movements for 24 hours. The pregnancy has been uncomplicated until now, with all routine screening tests normal. On examination the symphysiofundal height measures 34 cm. The fetus is in cephalic presentation with the head 3/5 palpable abdominally. Which one of the following is the most appropriate next step in management?

- A. Serum estriol assay
- B. Cardiotocograph (CTG)**
- C. Obstetric ultrasound
- D. Biophysical profile
- E. Induction of labour

A 19-year-old woman presents to her general practitioner with intermittent spotting from the vagina since commencing a triphasic oral contraceptive pill one month ago. The bleeding is not associated with sexual intercourse. She has been with the same partner for one year. A recent screen for sexually transmitted infections was negative. On examination, the vagina and cervix appear normal. Which one of the following is the most appropriate management?

- A. Increase the estrogen dose
- B. Increase the progestogen dose
- C. Change to a biphasic pill
- D. Recommend an etonogestrel contraceptive implant instead.
- E. Continue the current medication and review in two months**

A 75-year-old man presents following two episodes of blurring of vision affecting the right eye over the past month. Each episode lasted for five minutes with complete resolution. Neurological examination is normal. Ocular examination shows normal eye movements and pupil reactions. Which one of the following is the most appropriate initial investigation?

- A. Ocular tonometry
- B. Carotid duplex Doppler studies**
- C. CT head
- D. Holter blood pressure monitoring
- E. ESR

A 23-year-old woman complains of diarrhoea with offensive stools and loss of 5 kg weight over the previous 3 years. She now weighs 50 kg. There is no history of abdominal pain or abdominal operations. Physical examination shows a slightly distended abdomen, muscle wasting and glossitis.

Haemoglobin, 90 g/L, (115-165)

Mean Cell Volume, 110 fL, (80-100)

Which one of following is the most likely cause?

- A. Multiple jejunal diverticulosis
- B. Pernicious anaemia
- C. Gluten-sensitive enteropathy**
- D. Ulcerative colitis
- E. Crohn disease

A 79-year-old man presents complaining of pains in his thighs and arms. He has noticed increased difficulty in climbing stairs for the last two weeks.

His current medications are:

Atorvastatin, 80 mg daily

Sertraline, 100 mg daily

Furosemide, 40 mg daily

Digoxin, 62.5 µg daily

Atenolol, 50 mg daily

Enalapril, 10 mg daily

On examination, there is some tenderness of upper arm and thigh muscles, and mild weakness of hip flexion. Electrolytes, liver function tests and full blood examination are all normal. Creatine kinase is 8,000 U/L (70-380). Which one of the following is the most likely diagnosis?

- A. Polymyalgia rheumatica
- B. Atorvastatin induced myopathy**
- C. Stiff man syndrome
- D. Sertraline-induced myositis
- E. Hypokalaemic myopathy

A 27-year-old woman presents with a three week history of greenish brown discharge from the right nipple. She first noticed this when she squeezed her nipple while washing in the shower. On examination, she has no breast masses. The nipple appears normal. Small volumes of greenish brown discharge can be produced from three openings in the central right nipple. Which one of the following is the most likely diagnosis?

- A. A, Mastitis
- B. B, Duct ectasia**
- C. C, Breast cancer
- D. D, Fibrocystic change
- E. E, Physiological discharge

A 23-year-old moto-cross rider is brought to the Emergency Department following an accident. There is a 6 cm laceration over the anterior aspect of his tibia which is clearly deformed. His foot is well perfused. Which one of the following is the most appropriate initial step in management?

- A. **IV antibiotics**
- B. Fracture reduction
- C. Lavage
- D. Surgical debridement
- E. Tetanus toxoid administration

A 32-year-old man is brought into the Emergency Department with a six hour history of increasing pain in his right arm. He is confused and unable to give a clear history, but it appears that two days ago he injured his arm, sustaining abrasions when he fell off his trailbike. He is disoriented, with a temperature of 39.2°C, BP of 108/60 mmHg, pulse 110/min and oxygen saturation 96% breathing room air. His right arm is red and swollen, with blistering visible away from the wound site. His haemoglobin is 146 g/L (130-180), white cell count 38 x10⁹/L (4-11) and creatinine 155 umol/L (60-120). Apart from the immediate administration of antibiotics, which one of the following is the most appropriate next step in management?

- A. Intubation, ventilation and dialysis
- B. Wound biopsy
- C. CT right arm
- D. Hyperbaric therapy
- E. **Surgical debridement**

A 50-year-old man presents with the 2 cm lesion shown (see image) on the left side of his upper abdomen. This has been present for two months and is slowly getting larger. Which one of the following is the most appropriate next step in management?

- A. Observe and review in one month
- B. Cryotherapy and curette
- C. Sentinel node biopsy
- D. Punch biopsy
- E. **Excision biopsy**



A 24-year-old woman presents to the Emergency Department with a painful swelling on the right side of the neck, worsening over the past three days. She is now having noisy breathing, difficulty swallowing and is feeling sweaty. On examination she looks in distress, with a temperature of 38.2°C, BP 100/70 mmHg and pulse 110/min. She has tender, enlarged lymph nodes on the right side of her neck. A view inside her mouth is shown in the photograph (see image). Which one of the following is the most appropriate management?

- A. Amoxicillin
- B. Incision and drainage**
- C. CT head and neck
- D. Ultrasound neck
- E. Endotracheal intubation



Appendix C: Suitable resources

Online Medicine resource; suitable resources include UpToDate, BMJ Best Practice or Medscape.

Guidelines written by professional societies, colleges, and evidence-based medicine organisations; guidelines from the RACGP provide useful information on Australian practice.

Therapeutics Guidelines addresses current recommendations on use of medicines in Australia <https://tgldcdp.tg.org.au/etgcomplete>

State, territory and federal departments of health publish resources for clinical practice including the Australian Immunisation Handbook, 2018. <http://immunise.health.gov.au/>

Specific resources include:

Royal Children's Hospital Clinical Guidelines <https://www.rch.org.au>

Sadock B J, Sadock V A, Ruiz P, Kaplan & Sadock', Concise Textbook of Clinical Psychiatry, 4th ed, 2017. ISBN 9781496345257 (paperback).

American Psychiatric Association. DSM-5: Diagnostic and Statistical Manual of Mental Disorders, 5th edn. American Psychiatric Association, Washington DC, 2013. ISBN 9780890425596 (paperback).

Online mental health resources Guidelines and resources for practice Royal Australian and New Zealand College of Psychiatrists <https://www.ranzcp.org/Publications/Guidelines-and-resources-for-practice>.

Guidelines for preventive activities in general practice (The Red Book) 9th Edition <https://www.racgp.org.au/your-practice/guidelines/redbook/>

Putting Prevention Into Practice - The Green Book 3rd edition <https://www.racgp.org.au/your-practice/guidelines/greenbook/>

SNAP: a population health guide to behavioural risk factors in general practice 2nd edition <https://www.racgp.org.au/your-practice/guidelines/snap/>

National guide to a preventive assessment in Aboriginal and Torres Strait Islander peoples 3rd Edn. <https://www.racgp.org.au/your-practice/guidelines/national-guide/>

RACGP (Silver Book) Aged Care Clinical Guide 5th edition <https://www.racgp.org.au/silverbook>

Refugee Health. The RACGP has resources on its website to assist GPs in providing healthcare for refugees: <http://www.racgp.org.au/support/library/subject-portals/refugee/>

The Australian Immunisation Handbook, 2018. <http://immunise.health.gov.au/>

Breen KJ, Cordner S, Thomson CJH. Good medical practice: professionalism, ethics and law. Port Melbourne: Cambridge University Press; 2016. ISBN 9781938182679

RANZCOG statements and guidelines <https://ranzcof.edu.au/statements-guidelines>

Pregnancy Care Guidelines <https://www.health.gov.au/resources/pregnancy-care-guidelines>