

## **Hammurabi college of medicine outcomes.**

**Outcome-based curriculum or outcomes-based education is a learner-centered approach that focuses on what a student should be able to do in the real world upon completion of a course or program. As medicine evolves, so must medical education and the assessment of physician competence. Outcome-based education offers several advantages as a means of achieving this.**

**In outcomes-based education, learning outcomes are clearly and unambiguously defined. These outcomes determine the content and organization of the curriculum, teaching methods and strategies, courses offered, assessment process, learning environment, and curriculum schedule. They also provide a framework for curriculum evaluation.**

**The principle here is to determine the general and specific specifications for a medical college graduate and the specifications as mentioned in the book (Tomorrow Doctors) approved by the British Medical Council, which is the highest authority responsible for doctors in the United Kingdom, and which was approved by the Graduate's Outcomes Committee for Iraqi Medical Colleges for the year 2019-2020. These outputs are 105 + 12 + 3**

### **The doctor as a scholar and a scientist**

- **The graduate will be able to apply to medical practice biomedical scientific principles, method and knowledge relating to: anatomy, biochemistry, cell biology, genetics, immunology, microbiology, molecular biology, nutrition, pathology, pharmacology and physiology.**
- **Apply psychological principles, method and knowledge to medical practice.**
- **Apply social science principles, method, and knowledge to medical practice.**
- **Apply to medical practice the principles, method and knowledge of population health and the improvement of health and healthcare**
- **Apply scientific method and approaches to medical research.**
- **The doctor as a practitioner**
- **Graduate will be able to carry out a consultation with a patient:**
- **Diagnose and manage clinical presentations.**
- **Communicate effectively with patients and colleagues in a medical context.**
- **Provide immediate care in medical emergencies.**
- **Prescribe drugs safely, effectively, and economically.**
- **Carry out practical procedures safely and effectively.**
- **Use information effectively in a medical context.**

- **The doctor as a professional**
- **The graduate will be able to behave according to ethical and legal principles.**
- **Reflect, learn, and teach others.**
- **Learn and work effectively within a multi-professional team.**
- **Protect patients and improve care.**

### **The doctor as a scholar and a scientist**

**The graduate will be able to apply to medical practice biomedical scientific principles, method and knowledge relating to: anatomy, biochemistry, cell biology, genetics, immunology, microbiology, molecular biology, nutrition, pathology, pharmacology and physiology.**

The graduate will be able to:

- Explain normal human structure and functions.
- Explain the scientific bases for common disease presentations.
- Justify the selection of appropriate investigations for common clinical cases.
- Explain the fundamental principles underlying such investigative techniques.
- Select appropriate forms of management for common diseases, and ways of preventing common diseases, and explain their modes of action and their risks from first principles.
- Demonstrate knowledge of drug actions: therapeutics and pharmacokinetics; drug side effects and interactions, including for multiple treatments, long-term conditions, and non-prescribed medication; and also including effects on the population, such as the spread of antibiotic resistance.
- Make accurate observations of clinical phenomena and appropriate critical analysis of clinical data.

### **Apply psychological principles, method and knowledge to medical practice.**

- Explain normal human behavior at an individual level.
- Discuss psychological concepts of health, illness and disease.
- Apply theoretical frameworks of psychology to explain the varied responses of individuals, groups and societies to disease.
- Explain psychological factors that contribute to illness, the course of the disease and the success of treatment.

- e) Discuss psychological aspects of behavioral change and treatment compliance.
- f) Discuss adaptation to major life changes, such as bereavement. comparing the abnormal adjustments that might occur in these situations.
- g) Identify appropriate strategies for managing patients with dependence issues and other demonstrations of self-harm.

**Apply social science principles, method, and knowledge to medical practice.**

- a) Explain normal human behavior at a societal level.
- b) Discuss sociological concepts of health, illness and disease.
- c) Apply theoretical frameworks of sociology to explain the varied responses of individuals, groups and societies to disease.
- d) Explain sociological factors that contribute to illness, the course of the disease and the success of treatment - including issues relating to health inequalities, the links between occupation and health and the effects of poverty and affluence.
- e) Discuss sociological aspects of behavioral change and treatment compliance.

**Apply to medical practice the principles, method and knowledge of population health and the improvement of health and healthcare.**

- a) Discuss basic principles of health improvement, including the wider determinants of health, health inequalities, health risks and disease surveillance.
- b) Assess how health behaviors and outcomes are affected by the diversity of the patient population.
- c) Describe measurement methods relevant to the improvement of clinical effectiveness and care.
- d) Discuss the principles underlying the development of health and health service policy, including issues relating to health economics and equity, and clinical guidelines.
- e) Explain and apply the basic principles of communicable disease control in hospital and community settings.
- f) Evaluate and apply epidemiological data in managing healthcare for the individual and the community.
- g) Recognize the role of environmental and occupational hazards in ill- health and discuss ways to mitigate their effects.
- h) Discuss the role of nutrition in health.
- i) Discuss the principles and application of primary, secondary and tertiary prevention of disease.

j) Discuss from a global perspective the determinants of health and disease and variations in healthcare delivery and medical practice.

**Apply scientific method and approaches to medical research.**

a) Critically appraise the results of relevant diagnostic, prognostic and treatment trials and other qualitative and quantitative studies as reported in the medical and scientific literature.

b) Formulate simple relevant research questions in biomedical science, psychosocial science or population science, and design appropriate studies or experiments to address the questions.

c) Apply findings from the literature to answer questions raised by specific clinical problems.

d) Understand the ethical and governance issues involved in medical research.

**The doctor as a practitioner**

**Graduate will be able to carry out a consultation with a patient:**

a) Take and record a patient's medical history, including family and social history, talking to relatives or other carers where appropriate.

b) Elicit patients' questions, their understanding of their condition and treatment options, and their views, concerns, values and preferences.

c) Perform a full physical examination.

d) Perform a mental-state examination.

e) Assess a patient's capacity to make a particular decision in accordance with legal requirements and the CMC's guidance.

f) Determine the extent to which patients want to be involved in decision-making about their care and treatment.

g) Provide explanation, advice, reassurance, and support.

**Diagnose and manage clinical presentations.**

a) Interpret findings from the history, physical examination and mental-state examination, appreciating the importance of clinical, psychological, spiritual, religious, social and cultural factors.

- b) Make an initial assessment of a patient's problems and a differential diagnosis. Understand the processes by which doctors make and test a differential diagnosis.
- c) Formulate a plan of investigation in partnership with the patient, obtaining informed consent as an essential part of this process.
- d) Interpret the results of investigations, including growth charts, x-rays and the results of the diagnostic procedures in Appendix 1.
- e) Synthesize a full assessment of the patient's problems and define the likely diagnosis or diagnoses.
- f) Make clinical judgements and decisions, based on the available evidence, in conjunction with colleagues and as appropriate for the graduate's level of training and experience. This may include situations of uncertainty.
- g) Formulate a plan for treatment, management and discharge, according to established principles and best evidence, in partnership with the patient, their carers, and other health professionals as appropriate. Respond to patients' concerns and preferences, obtain informed consent, and respect the rights of patients to reach decisions with their doctor about their treatment and care and to refuse or limit treatment.
- h) Support patients in caring for themselves.
- i) Identify the signs that suggest children or other vulnerable people may be suffering from abuse or neglect and know what action to take to safeguard their welfare.
- j) Contribute to the care of patients and their families at the end of life, including management of symptoms, practical issues of law and certification, and effective communication and team working.

**Communicate effectively with patients and colleagues in a medical context.**

- a) Communicate clearly, sensitively, and effectively with patients, their relatives or other carers, and colleagues from the medical and other professions, by listening, sharing, and responding.
- b) Communicate clearly, sensitively, and effectively with individuals and groups regardless of their age, social, cultural, or ethnic backgrounds or their disabilities, including when English is not the patient's first language.
- c) Communicate by spoken, written and electronic methods (including medical records), and be aware of other methods of communication used by patients. The graduate should appreciate the significance of non- verbal communication in the medical consultation.

d) Communicate appropriately in difficult circumstances, such as when breaking bad news, and when discussing sensitive issues, such as alcohol consumption, smoking, or obesity.

e) Communicate appropriately with difficult or violent patients.

f) Communicate appropriately with people with mental illness.

g) Communicate appropriately with vulnerable patients, h) Communicate effectively in various roles, for example, as patient advocate, teacher, manager or improvement leader.

### **Provide immediate care in medical emergencies.**

a) Assess and recognise the severity of a clinical presentation and a need for immediate emergency care.

b) Diagnose and manage acute medical emergencies.

c) Provide basic first aid.

d) Provide immediate life support.

e) Provide cardio-pulmonary resuscitation or direct other team members to carry out resuscitation.

### **Prescribe drugs safely, effectively, and economically.**

a) Establish an accurate drug history, covering both prescribed and other medication.

b) Plan appropriate drug therapy for common indications, including pain and distress.

c) Provide a safe and legal prescription.

d) Calculate appropriate drug doses and record the outcome accurately.

e) Provide patients with appropriate information about their medicines.

f) Access reliable information about medicines.

g) Detect and report adverse drug reactions.

h) Demonstrate awareness that many patients use complementary and alternative therapies, and awareness of the existence and range of these therapies, why patients use them, and how this might affect other types of treatment that patients are receiving.

### **Carry out practical procedures safely and effectively.**

- a) Be able to perform a range of diagnostic procedures, as listed in Appendix 1 and measure and record the findings.
- b) Be able to perform a range of therapeutic procedures, as listed in Appendix 1.
- c) Be able to demonstrate correct practice in general aspects of practical procedures.

### **Use information effectively in a medical context.**

- a) Keep accurate, legible and complete clinical records.
- b) Make effective use of computers and other information systems, including storing and retrieving information.
- c) Keep to the requirements of confidentiality and data protection legislation and codes of practice in all dealings with information.
- d) Access information sources and use the information in relation to patient care, health promotion, giving advice and information to patients, and research and education.
- e) Apply the principles, method and knowledge of health informatics to medical practice.

### **The doctor as a professional**

#### **The graduate will be able to behave according to ethical and legal principles.**

The graduate will be able to:

- a) Know about and keep to the GMC's ethical guidance and standards including Good Medical Practice, the 'Duties of a doctor registered with the GMC' and supplementary ethical guidance which describe what is expected of all doctors registered with the GMC.
- b) Demonstrate awareness of the clinical responsibilities and role of the doctor, making the care of the patient the first concern. Recognize the principles of patient-centered care, including self care, and deal with patients' healthcare needs in consultation with them and, where appropriate, their relatives or careers.
- c) Be polite, considerate, trustworthy and honest, act with integrity, maintain confidentiality, respect patients' dignity and privacy, and understand the importance of appropriate consent.
- d) Respect all patients, colleagues and others regardless of their age, colour, culture, disability, ethnic or national origin, gender, lifestyle, marital or parental status, race, religion or beliefs, sex, sexual orientation, or social or economic status. Graduates will

respect patients' right to hold religious or other beliefs, and take these into account when relevant to treatment options.

e) Recognize the rights and the equal value of all people and how opportunities for some people may be restricted by others' perceptions.

f) Understand and accept the legal, moral and ethical responsibilities involved in protecting and promoting the health of individual patients, their dependants and the public - including vulnerable groups such as children, older people, people with learning disabilities and people with mental illnesses.

g) Demonstrate knowledge of laws, and systems of professional regulation through the GMC and others, relevant to medical practice, including the ability to complete relevant certificates and legal documents and liaise with the coroner or procurator fiscal where appropriate.

### **Reflect, learn, and teach others.**

a) Acquire, assess, apply and integrate new knowledge, learn to adapt to changing circumstances and ensure that patients receive the highest level of professional care.

b) Establish the foundations for lifelong learning and continuing professional development, including a professional development portfolio containing reflections, achievements and learning needs.

c) Continually and systematically reflect on practice and, whenever necessary, translate that reflection into action, using improvement techniques and audit appropriately - for example, by critically appraising the prescribing of others.

d) Manage time and priorities tasks, and work autonomously when necessary and appropriate.

e) Recognize own personal and professional limits and seek help from colleagues and supervisors when necessary.

f) Function effectively as a mentor and teacher including contributing to the appraisal, assessment and review of colleagues, giving effective feedback, and taking advantage of opportunities to develop these skills.

### **Learn and work effectively within a multi-professional team.**

a) Understand and respect the roles and expertise of health and social care professionals in the context of working and learning as a multi- professional team.

b) Understand the contribution that effective interdisciplinary team- working makes to the delivery of safe and high-quality care.



c) Work with colleagues in ways that best serve the interests of patients, passing on information and handing over care, demonstrating flexibility, adaptability and a problem-solving approach.

d) Demonstrate ability to build team capacity and positive working relationships and undertake various team roles including leadership and the ability to accept leadership by others.

### **Protect patients and improve care.**

a) Place patients' needs and safety at the center of the care process.

b) Deal effectively with uncertainty and change.

c) Understand the framework in which medicine is practiced in the UK, including: the organization, management and regulation of healthcare provision; the structures, functions and priorities of the NHS; and the roles of, and relationships between, the agencies and services involved in protecting and promoting individual and population health.

d) Promote, monitor and maintain health and safety in the clinical setting, understanding how errors can happen in practice, applying the principles of quality assurance, clinical governance and risk management to medical practice, and understanding responsibilities within the current systems for raising concerns about safety and quality.

e) Understand and have experience of the principles and methods of improvement, including audit, adverse incident reporting and quality improvement, and how to use the results of audit to improve practice.

f) Respond constructively to the outcomes of appraisals, performance reviews and assessments.

g) Demonstrate awareness of the role of doctors as managers, including seeking ways to continually improve the use and prioritization of resources,

h) Understand the importance of, and the need to keep to, measures to prevent the spread of infection, and apply the principles of infection prevention and control,

i) Recognize own personal health needs, consult and follow the advice of a suitably qualified professional, and protect patients from any risk posed by own health,

j) Recognize the duty to act if a colleague's health, performance or conduct is putting patients at risk.

### **Practical procedures for graduates**

## Diagnostic procedures

1. Measuring body temperature. - Using an appropriate recording device
2. Measuring pulse rate and blood pressure. - Using ,manual techniques and automatic electronic devices
3. Trans-cutaneous monitoring of a oxygen saturation. - Applying and talking readings from an electronic device which measures the amount of oxygen in a patient's blood
4. Venipuncture. - Inserting a needle into a patient's vein to take a sample of blood for testing or to give an injection into the vein. 5. Managing blood samples correctly. - Making d sure that blood samples are placed in the correct containers, and that these are labelled correctly and sent to the laboratory promptly and in the correct way. Taking measures to prevent spilling and contamination.
6. Taking blood cultures. - Taking samples of venous blood to test for the growth of infectious organisms in the blood. Requires special blood containers and laboratory procedures.
7. Measuring blood glucose. - Measuring the concentration of glucose in the patient's blood at the bedside, using appropriate equipment and interpreting the results.
8. Managing an electrocardiograph (ECG) monitor. - Setting up a continuous recording of the electrical activity of the heart. Ensuring the recorder is functioning correctly, and interpreting the tracing.
9. Performing and interpreting a 12-lead electrocardiograph. Recording a full, detailed tracing of the electrical activity of the heart, using a(ECG) machine recorder (electrocardiograph). Interpreting the recording for signs of heart disease.
10. Basic respiratory function tests. - Carrying out basic tests to see how well the patient's lungs are working (for example, how much air they can breathe out in one second).
11. Urinalysis using Multistix. - Testing a sample of urine for abnormal contents, such as blood or protein. The urine is applied to a plastic strip with chemicals which change colour in response to specific abnormalities.
12. Advising patients on how to collect a mid-stream urine specimen. - Obtaining a sample of urine from a patient, usually to check for the presence of infection, using a method which reduces the risk of contamination by skin bacteria.
13. Taking nose, throat and skin swabs. - Using the correct technique to apply sterile swabs to the nose, throat and skin.

14. Nutritional assessment. - Making an assessment of the patient's state of nutrition. This includes an evaluation of their diet; their general physical condition; and measurement of height, weight and body mass index.

15. Pregnancy testing. - Performing a test of the urine to detect hormones which indicate that the patient is pregnant.

### Therapeutic procedures

16. Administering oxygen. Allowing the patient to breathe a higher concentration of oxygen than normal, via a face mask or other equipment.

17. Establishing peripheral intravenous access and setting up an infusion; use of infusion devices. - Puncturing a patient's vein in order to insert an indwelling plastic tube (known as a 'cannula'), to allow fluids to be infused into the vein (a 'drip'). Connecting the tube to a source of fluid. Appropriate choice of fluids and their 16 doses. Correct use of electronic devices which drive and regulate the rate of fluid administration.

18. Making up drugs for parenteral administration. – Preparing medicines in a form suitable for injection into the patient's vein. May involve adding the drug to a volume of fluid to make up the correct concentration for injection.

19. Dosage and administration of insulin and use of sliding scales. - Calculating how many units of insulin a patient requires, what strength of insulin solution to use, and how it should be given (for example, into the skin, or into a vein). Use of a 'sliding scale' which links the number of units to the patient's blood glucose measurement at the time.

20. Subcutaneous and intramuscular injections. - Giving injections beneath the skin and into muscle.

21. Blood transfusion. - Following the correct procedures to give a transfusion of blood into the vein of a patient (including correct identification of the patient and checking blood groups). Observation for possible reactions to the transfusion, and actions if they occur.

22. Male and female urinary catheterisation. - Passing a tube into the urinary bladder to permit drainage of urine, in male and female patients.

23. Instructing patients in the use of devices for inhaled medication. - Providing instructions for patients about how to use inhalers correctly, for example, to treat asthma.

24. Use of local anaesthetics. - Using drugs which produce numbness and prevent pain, either applied directly to the skin or injected into skin or body tissues.

25. Skin suturing. - Repairing defects in the skin by inserting stitches (normally includes use of local anesthetic).

26. Wound care and basic wound dressing. - Providing basic care of surgical or traumatic wounds and applying dressings appropriately.

27. Correct techniques for 'moving and handling' including patients. -Using, or directing other team members to use, approved methods for moving, lifting and handling people or objects, in the context of clinical care, using methods that avoid injury to patients, colleagues, or oneself.

### **General aspects of practical procedures**

28. Giving information about the procedure, obtaining and recording consent, and ensuring appropriate aftercare. - Making sure that the patient is fully informed, agrees to the procedure being performed, and is cared for and watched appropriately after the procedure.

29. Hand washing (including surgical 'scrubbing up'). - Following approved processes for cleaning hands before procedures or surgical operations.

30. Use of personal protective equipment (gloves, gowns, masks). -Making correct use of equipment designed to prevent the spread of body fluids or cross-infection between the operator and the patient.

31. Infection control in relation to procedures. - Taking all steps necessary to prevent the spread of infection before, during or after a procedure.

32. Safe disposal of clinical waste, needles and other 'sharps'. Ensuring that these materials are handled carefully and placed in a suitable container for disposal.