LEARNING OUTCOMES:
MEDICINE, MD

Learning Outcomes for the Doctor of Medicine degree in Medicine

The Education Program Objectives (EPO) are the principle guiding document for the development of the curriculum. The curriculum structure was designed as a logical sequence to allow students to achieve the education program objectives as each phase progressively builds on the previous content. The development of each individual course and clerkship is guided primarily by the education program objectives. The initial development of the course and clerkship learning objectives was completed after the education program objectives were finalized.

CI MED’s EPOs are guided by the AAMC (American Association of Medical Colleges) and GME (Graduate Medical Education) requirements for competencies of medical students and residents. We have 6 outcomes, each with several sub-outcomes that are more measurable.

1. **Outcome 1:** Altruism - the practice of selfless concern for the well-being of others.
   a. Describe the theories and principles that govern ethical decision making in medicine, particularly those decisions that arise at the beginning and end of life.
   b. Demonstrate compassionate treatment of patients, and respect for their privacy and dignity.
   c. Demonstrate honesty and integrity in all interactions with patients, their families, colleagues, and others with whom physicians must interact in their professional lives.
   d. Demonstrate an understanding of, and respect for, the roles of other health care professionals, and of the need to work in collaborative healthcare teams in caring for individual patients and in promoting the health of defined populations.
   e. Advocate for the interests of one’s patients over one’s own interests, at all times.
   f. Exhibit an understanding of the threats to medical professionalism posed by the conflicts of interest inherent in the practice of medicine.
   g. Recognize and accept limitations in one’s knowledge, skills, attitudes, and behaviors, and continuously improve these attributes.

2. **Outcome 2:** Medical Knowledge - the knowledge necessary for medical practice and skills to expand understanding.
   a. Describe the normal structure and function of the body (as a whole) and of each of its major organ systems.
   b. Describe the molecular, biochemical, and cellular mechanisms that are important in maintaining the body’s homeostasis.
   c. Describe the various causes (genetic, developmental, metabolic, toxic, microbiologic, autoimmune, neoplastic, degenerative, and traumatic) of disease conditions and the ways in which they operate on the body.
   d. Describe the altered structure and function (pathology and pathophysiology) of the body and its major organ systems that are seen in various diseases and conditions.
   e. Demonstrate an understanding of the power of the scientific method in basic, translational, clinical, and engineering research.
   f. Demonstrate an interest in and commitment to lifelong learning to stay abreast of relevant scientific advances.

3. **Outcome 3:** Skill - the ability to perform skills needed for medical practice, analyze results of tests, solve clinical problems, and communicate solutions to multiple audiences.
   a. Obtain an accurate and complete medical history.
   b. Perform complete and organ-system specific examinations, including a mental status examination.
   c. Perform routine clinical procedures.
   d. Recommend and interpret the results of commonly used diagnostic procedures and tests.
   e. Describe the most frequent clinical, laboratory, imaging, and pathologic manifestations of common disease states.
   f. Reason deductively in solving clinical problems.
   g. Design and explain the basis for appropriate management strategies (preventive, diagnostic and therapeutic) for common acute and chronic conditions.
   h. Recognize patients with immediately life-threatening or serious conditions requiring critical care and institute appropriate initial therapy.
   i. Demonstrate knowledge of pain management.
   j. Communicate effectively, orally and in writing, with patients, their families, and professionals in health and other fields with whom physicians must exchange information in carrying out their responsibilities.

4. **Outcome 4:** Duty - a holistic view of healthcare system and understanding of population health.
   a. Demonstrate knowledge of the important non-biological determinants of poor health and of the socioeconomic, behavioral, psychological, and cultural factors that contribute to the development and/or continuation of health and disease.
   b. Demonstrate knowledge of the epidemiology of health and disease within a defined population, and the systematic approaches useful in reducing the incidence and prevalence of those diseases.
   c. Identify risk factors for disease or injury, select appropriate tests for detecting patients at risk for or in the early stage of specific diseases, and determine strategies for responding appropriately including prevention strategies.
   d. Retrieve biomedical information from appropriate resources and manage and utilize it within a quantitative and statistical framework to solve clinical problems and make decisions.
   e. Demonstrate knowledge of the organization, financing, and delivery of health care.
   f. Demonstrate cultural competency and a commitment to overcome health disparities by providing care to all patients and advocating for access to health care for underserved populations.

5. **Outcome 5:** Innovation - the ability to identify opportunities in societal and technical spaces, create solutions, and have a positive impact on health care delivery.
   a. Identify unexpected opportunities to provide extraordinary value for patients, populations, and health systems.
   b. Apply systems-based and creative thinking to complex, uncertain diagnoses or other healthcare problems.
   c. Evaluate the feasibility of innovative healthcare solutions to address patient, societal, population, and global health needs.
6. **Outcome 6**: Engineering - Skills necessary to create technical solutions and make technology-related decisions to improve healthcare.
   a. Integrate information from many sources to gain insight into patient care.
   b. Identify, formulate, and solve healthcare problems by applying principles of engineering, science, medicine, and mathematics.
   c. Apply analysis and synthesis to the engineering design process, resulting in designs that address identified healthcare challenges.
   d. Conduct relevant healthcare and engineering research and apply quantitative skills and medical judgment to implement solutions.
   e. Communicate data-based costs, risks, and benefits of engineering solutions to healthcare teams, health systems, medical device manufacturers, and other health industry stakeholders.