



الهيئة السعودية للتخصصات الصحية
Saudi Commission for Health Specialties

Diabetes Fellowship



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

PREFACE

- The primary goal of this document is to enrich the training experiences of postgraduate trainees by outlining the learning objectives aimed at developing them into independent and competent future practitioners.
- This curriculum may contain sections outlining several training regulations; however, such regulations must be sought from the training’s “General Bylaws” and “Executive Policies” published by the Saudi Commission for Health Specialties (SCFHS), which can be accessed online through the official SCFHS website. In the event of any discrepancy between the regulation statements, the one stated in the most recently updated bylaws and executive policies must be applied.
- As this curriculum is subject to periodic refinements, please refer to the electronic version posted online for the most up-to-date edition at www.scfhs.org.sa.

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II. COPYRIGHT STATEMENT

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We would also like to acknowledge that the CanMEDS framework is a copyright of the Royal College of Physicians and Surgeons of Canada, and many of the description's competencies have been acquired from their resources.

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IV. INTRODUCTION

1. Context of Practice

Diabetes mellitus is a global health problem affecting many people of all ages. It has been reported that 537 million adults live with diabetes worldwide. This number is predicted to rise to 643 million by 2030 and 783 million by 2045¹. Saudi Arabia is ranked among the top ten countries in the world for both type 2 and type 1 diabetes¹, with an estimated population of 7 million people living with the disease and more than 3 million with pre-diabetes². Moreover, the prevalence of gestational diabetes mellitus (GDM) among screened normal pregnant women has increased by two to threefold since 2010, ranging from 8.9% to 53.4^{3,4}. The prevalence of GDM is particularly high among Saudi women^{5,6}. Pronounced socioeconomic transformations and lifestyle changes over the past four decades have resulted in a dramatic increase in the prevalence of diabetes, thereby imposing a significant economic burden on individuals, national healthcare systems, and cities due to the disease and its concomitant complications¹.

Given the high prevalence of diabetes in our community and its predicted increase in the coming years, Saudi Vision 2030 includes among its aims the attainment of healthcare excellence in the Kingdom of Saudi Arabia. It is necessary to facilitate the development of highly specialized diabetologists to manage all types of diabetes and provide comprehensive and advanced management through the use of sophisticated diabetes technology. These include insulin pumps and continuous glucose monitoring systems to meet the community's health needs and expectations.

The Saudi Diabetes Fellowship Program aims to meet the Saudi Vision 2030 goals and set the health sector transformation program in motion by improving healthcare service efficiency. It aims to treat the diabetes epidemic through the training and promotion of competent diabetologists, delivering optimal coverage with geographically balanced distribution, and promoting the prevention and management of chronic diseases and its associate complications. The main goal of the program is to provide candidates with the clinical experiences and educational opportunities necessary to build a solid foundation of medical knowledge, critical thinking, literature review skills, diagnostic acumen, and technical abilities in order to develop competencies in clinical judgment in the expanding field of diabetes medicine. This fellowship program will increase the number of qualified and competent diabetologists so as to meet the high demand of this subspecialty and the growing healthcare services required in the Kingdom of Saudi Arabia, which will eventually help to reduce the national burden of this disease.

The Diabetes Fellowship Program first started in 2015 with a curriculum established by a group of well-known physicians with wide experience in the field of diabetes; it was further reviewed by experts in medical education. The training program accepts physicians who have successfully completed their training in internal or family medicine. It consists of two years of full-time supervised training in diabetes and its related fields with individualized research training, focused mentorship, and learning opportunities. It is comprehensive in that it covers outpatient rotations in adult diabetes, advanced technologies such as insulin pumps and continuous glucose monitoring, gestational diabetes, diabetes in elderly and pediatrics, diabetic foot care, ophthalmology, clinical nutrition, diabetes education and bariatric medicine, along with inpatient management from admission to discharge.

The framework of competencies is based on the principles of the Canadian Medical Education Directives for Specialists (CanMEDS), which are applied in postgraduate training programs in many countries. The principles offer a



model of physician competencies that emphasize not only medical expertise but also additional nonmedical expert roles that aim to serve society's needs competently. Therefore, the Saudi Commission for Health Specialties (SCFHS) is adopting the CanMEDS framework to establish a core curriculum for all training programs, including the Saudi Fellowship Program in Diabetes. In total, it covers seven CanMEDS roles: medical expert, communicator, collaborator, manager, health advocate, scholar, and professional.

2. Curriculum Implementation Goals and Responsibilities

The ultimate goal of the curriculum is to guide trainees toward competency in their specialty. This goal will require significant effort and coordination from all the stakeholders involved in postgraduate training. As “adult learners,” the trainees have to demonstrate full engagement through a careful understanding of the learning objectives, self-directed learning, problem-solving, openness and readiness to apply what they have learned by reflective practice from feedback, formative assessment, and self-wellbeing, and, most importantly, seeking support when it is required. The program director plays a vital role in ensuring that the implementation of the curriculum is successful. Training committee members, particularly the program administrator and chief fellow, exert a significant impact on the program's implementation. Trainees should be enabled to share in this responsibility. SCFHS will apply the best models of training governance to achieve the best quality of training. Academic affairs in training centers and regional supervisory training committees will play a major role in training supervision and implementation. The diabetes scientific committee are responsible for making sure that the content of the curriculum is constantly updated to match the best-known standards in the postgraduate education of their specialization.

3. What is New in This Edition?

This version of the Diabetes Fellowship Training Program Curriculum follows the competency-based framework adopted by SCFHS. In addition, the following changes have been included in this version: 1) all rotations of the training program, as well as educational activities, are described in a competency-based format; 2) all the objectives are aligned with the CanMEDS framework. This means that the range of competencies has been expanded to include a balanced representation of knowledge, skills, and attitude. 3) Changes have been made to the timeframe, the structure, and the roadmap of the rotations as some new ones were introduced. A list of the most important clinical topics and procedures in diabetes, as well as universal topics, has been considered. Core Specialty Topics are described in detail, particularly in the areas of knowledge and skills. 4) An amended list of four workshops related to diabetes were also included. 5) The methods of assessment have been updated. Expected competencies for each stage of the training are clearly defined. In the evaluation process, a higher emphasis is placed on continuous (formative) and balanced assessment methods, and a portfolio designed to support learning and individualized assessment has been included. Promotion, along with the end-of-year exam, structured oral exam, and final exam have been revised according to the new examination rules and regulations by the Saudi Commission. Finally, evaluation and procedural forms for each rotation have been added



V. ABBREVIATIONS USED IN THIS DOCUMENT

Abbreviation	Description
ABG	Arterial blood gas
ACGME	Accreditation Council for Graduate Medical Education
AGP	Ambulatory glucose profile
AHD	Academic half-day activities
CBD	Case-based discussion report
CBE	Competency-based education
CBL	Clinic-Based Learning
CGMS	Continuous glucose monitoring system
CLABSI	Central line blood stream infection
COL	Collaborator
COM	Communicator
CVA	Cerebrovascular accident
DCC	Didactic centralized component
DM	Diabetes mellitus
DIVC	Disseminated intravascular coagulation

Abbreviation	Description
DOPS	Direct Observation of Procedural Skills Report
DKA	Diabetic ketoacidosis
ECG	Electrocardiogram
F1	(First) year of fellowship
F2	(Second) year of fellowship
FITER	FITER Final In-Training Evaluation Report
GDM	Gestational diabetes mellitus
GI	Gastrointestinal
HA	Health advocate
HAI	Hospital-acquired infection
HCW	Healthcare worker
HHS	Hyperosmolar hyperglycemic state
IHD	Ischemic heart disease
IRB	Institutional Review Board
ITER	In-Training Evaluation Report
JVP	Jugular venous pressure
L	Leader
LADA	Latent autoimmune diabetes in adults
MCQ	Multiple choice question
Mini-CEX	Mini Clinical Experience Report



Abbreviation	Description
Mini-MSE	Mini Mental State Examination
MODY	Maturity onset diabetes of the young
MRSA	Methicillin-resistant staphylococcus aureus
ME	Medical expert
NSTEMI	Non-ST segment elevation myocardial infarction
OBL	On-call-based learning
OB/GYN	Obstetrics and gynecology
OSCE	Objective Structured Clinical Examination
P	Professional
RCC	Rotational component of the curriculum
S	Scholar
SCFHS	Saudi Commission for Health Specialties
SDL	Self-directed Learning
SIRS	Systemic inflammatory response syndrome
SOE	Structured Oral Examination
STEMI	ST-segment elevation myocardial infarction

VI. PROGRAM ENTRY REQUIREMENTS

- Please refer to the updated executive policy of SCFHS on admission and registration.

Requirements for admission as defined by the scientific committee:

- Recognized Medical Degree Certificate in Internal Medicine or Family Medicine from the SCFHS or equivalent
- Licensure to practice medicine in the KSA
- Passing the personal selection interview held by the Commission/ Fellowship scientific committee
- Final and official letter of sponsorship from primary employer for the whole period of full-time training (maximum three-month period limit since receipt of the acceptance letter)
- A total of three letters of recommendation from previous supervisors
- Curriculum vitae
- Valid identification
- Three recent photos



VII. LEARNING AND COMPETENCIES

1. Introduction to learning outcomes and competency-based education:

Training should be guided by well-defined “learning objectives” driven by the targeted “learning outcomes” of a particular program to serve specific specialty needs. Learning outcomes are intended to reflect professional “competencies” and tasks that are “entrusted” to trainees upon graduation. This will ensure that graduates meet the expected demands of the healthcare system and patient care in relation to their particular specialty. Competency-based education (CBE) is an “adult-learning” approach that is based on achieving pre-defined, fine-grained, and well-paced learning objectives driven by complex professional competencies.

Professional competencies in the healthcare sector are usually complex and contain a mixture of multiple learning domains (i.e., knowledge, skills, and attitudes). CBE is expected to change the traditional methods employed in postgraduate education. For instance, although it is regarded as a precious resource, the total training time period of a healthcare professional should not be looked to as a proxy for *competence* (e.g., rotation time in certain hospital areas is not the primary marker of competence achievement). Further, CBE emphasizes the critical role of an informed judgment of a learner’s competency progress, based on a staged and formative assessment driven from multiple workplace-based observations. Several CBE models have been developed for postgraduate education in healthcare (example:

CanMEDS by the Royal College of Physicians and Surgeons of Canada (RCPSC), the CBM-Competency model by the Accreditation Council for Graduate Medical Education (ACGME), and many others. The following are concepts used to enhance the implementation of CBE in this curriculum:

- **Competency:** Competency is a cognitive construct assessing the potential of an individual to perform efficiently in a given situation based on the standards of their profession. Professional roles (e.g., medical expert, health advocate, communicator, leader, scholar, collaborator, and professional) are used to define competency roles in order to make them adaptable for learning and assessment.
- **Milestones:** Milestones are stages along the developmental journey of individuals throughout the competency continuum. Through their graduation from junior to senior levels, trainees will be assisted in their transformation from supervised novices to unsupervised qualified practitioners. This should not undermine the role of supervisory/regulatory bodies toward the malpractice of independent practitioners, however. Milestones are expected to enhance the learning process by ensuring that the pace of training and assessment matches the developmental level of the trainees (i.e., junior or senior).
- **Learning domains:** Whenever possible, efforts should be directed to match the learning outcomes with the corresponding domain (K = knowledge, S = skills, and A = attitude). You might have more than one annotation for a given learning outcome.
- **Content-area categorization:** It is advisable to categorize the learning outcomes into broad content areas related to the profession. For example, diagnostic versus therapeutic, simple versus complex, urgent versus chronic, etc.
- Trainees are expected to progress from being novices to mastering their respective profession within a particular set of professional



competencies. SCFHS has endorsed CanMEDS to articulate these professional competencies. This curriculum applies principles of competency-based medical education. CanMEDS/ACGME represent a globally accepted framework outlining competency roles: “CanMEDS 2015/ACGME 2018 framework” has been adopted in this section.

- ACGME reference and link:

<https://www.acgme.org/Portals/0/MilestonesGuidebook.pdf>

This reference is an example for the general outline of the CanMEDS competency: (Frank JR, Snell L, Sherbino J (eds.). CanMEDS 2015 Physician Competency Framework. Ottawa: Royal College of Physicians and Surgeons of Canada; 2015).

Learning outcomes

Successful fellows will acquire a broad-based understanding of the principles, philosophy, core knowledge, skills, and attitudes pertaining to diabetes mellitus. By the end of their training, they should have attained the following goals and objectives:

Trainee Role	Goals and Objectives
Medical Expert	<ul style="list-style-type: none"> • Function effectively, integrating all CanMEDS roles to provide optimal, ethical, and patient-centered medical care • Establish and maintain the clinical knowledge, skills, and attitudes appropriate to the fellow’s level of training • Perform complete appropriate patient assessments • Use preventive and therapeutic interventions effectively • Demonstrate proficient and appropriate use of procedural skills, both diagnostic and therapeutic • Seek appropriate consultation from other health professionals when needed

Trainee Role	Goals and Objectives
Communicator	<ul style="list-style-type: none"> • Develop rapport, trust, and ethical therapeutic relationships with patients • Accurately elicit and synthesize relevant information and perspectives of patients, colleagues, and other professionals • Accurately convey relevant information and explanations to patients, colleagues, and other professionals • Develop a common understanding of issues, problems, and plans with patients, colleagues, and other professionals to develop a shared plan of care • Convey effective oral and written information pertaining to a medical encounter
Collaborator	<ul style="list-style-type: none"> • Participate effectively and appropriately in an inter-professional healthcare team • Work effectively with other healthcare professionals to prevent, negotiate, and resolve inter-professional conflicts
Health advocate	<ul style="list-style-type: none"> • Respond to individual patient healthcare needs and issues as part of patient care • Respond to the healthcare needs of the communities in which the fellow serves • Identify the determinants of healthcare of the populations which the fellow serves • Promote the health of individual patients, communities, and populations
Manager	<ul style="list-style-type: none"> • Participate in activities that contribute to the effectiveness of the healthcare organizations and systems to which the fellow belongs • Manage practice and career effectively • Allocate finite healthcare resources appropriately • Serve in administration and leadership roles, as and when appropriate



Trainee Role	Goals and Objectives
Scholar	<ul style="list-style-type: none"> • Maintain and enhance professional activities through continuous learning • Critically evaluate information and its sources and apply this information appropriately to practice decisions • Refine skills for designing hypothesis-driven clinical research • Facilitate the learning of patients, students, residents, other health professionals, the public, and others, as appropriate • Develop skills in organizing and delivering lectures on diabetes mellitus • Contribute to the creation, dissemination, application, and translation of new medical knowledge and practices
Professional	<ul style="list-style-type: none"> • Demonstrate a commitment to patients, professions, and society through ethical practices • Demonstrate a commitment to patients, one's profession, and society through participation in profession-led regulations • Demonstrate a commitment to physician health and sustainable practice

2. Program Duration:

- The Saudi Diabetes Fellowship Program is a full-time program running for a total of two years.
- Please refer to the updated decree released by the Executive Council of Training and Education.

3. Program Rotations:

The Saudi Fellowship Program in Diabetes consists of two years of full-time supervised fellowship training in diabetes medicine and its branches. The

training institution must be accredited by SCFHS to offer a Saudi Specialty Certificate in Diabetes. The training in each rotation must be comprehensive and include in-patients, ambulatory care, and the emergency department. As trainees gain experience and competencies, their responsibilities will continue to increase and they will become actively involved in teaching junior fellows and other colleagues in addition to providing patient care. The Saudi Diabetes Fellowship Program is divided into two levels, namely Junior (F1) and Senior (F2), each consisting of one year of training. The roadmap for the rotations, depicted below, must be followed strictly. However, the sequence of rotations within each level can be manipulated according to circumstance.

First-year Fellows (F1)

First-year Fellows (F1)	
Duration (in weeks)	Name of rotation
22 weeks	General diabetes clinics, including adult diabetes, adolescent diabetes, advanced diabetes technology (CGM, insulin pump), and gestational diabetes clinics
4 weeks	Clinical nutrition
4 weeks	Diabetes education clinics
4 weeks	Ophthalmology (mainly retina clinics)
8 weeks	Pediatric diabetes clinics
6 weeks	Podiatry service
4 weeks	Annual vacation
1 week	Educational leave during the year



- Fellows are expected to cover out-patient rotations as well as in-patient and consultation services during rotation.
- A maximum of 3–6 months per year is allowed for abroad rotations outside the primary center (if needed) to cover any rotation.
- Fellows are exposed to wider types of healthcare services to gain experience with different healthcare systems.
- The first year of the fellowship is devoted to clinical training through time spent on the in-patient consultation service, in general and specialty diabetes, and on rotations with other multi-disciplinary sections and departments throughout the institution.
- In the first year, fellows must identify the area of research they wish to pursue and the faculty member they wish to work with. They should work closely with the faculty member to plan the project and prepare a written outline. Fellows are closely supervised during their research years by their faculty mentor; however, there is also ample opportunity for guidance and scientific interaction with the entire faculty through participation in lab meetings, divisional research conferences, and institutional seminars.

First-year Fellow (F1) Job Descriptions

1. Elicit a comprehensive history and perform a complete physical examination on admission; record the patient's assessment, differential diagnosis, and medical problems clearly; lastly, initiate a management plan.
2. Discuss the management plan—including investigations and a treatment plan—with the trainee's senior and communicate the plan to the nurse assigned to the patient's care.
3. Attend to all patient complaints and concerns, follow up results of investigations daily, record problem-oriented progress notes daily, and update the patient's problem list.

4. Attend to consultations, including those of the emergency department, within and outside the department.
5. Outpatient clinics entail a minimum of 5 clinics per week (maximum of 7). Fellows should participate in outpatient clinics in the specialties to which the fellow is assigned under the supervision of consultants. Fellows are not expected to cover clinics without consultant supervision.
6. An additional half-day per week is spent on rotations in multidisciplinary clinics.
7. Perform the basic procedures necessary for diagnosis and management.
8. Present patients on daily rounds and assign all unwell patients to the on-call team.
9. Ensure that the following discharge orders are placed in the patient's chart in a timely manner: discharge medications, follow-up appointments, and investigations.
10. Write a timely and thorough discharge summary.
11. Participate in departmental and section activities and the presentation of cases in the morning report, grand rounds, and all educational activities.
12. Participate in on-call duties according to the rules and regulations of SCFHS. These include a minimum of 5 days per month and maximum of 7 per month or consecutive 14 days per two months upon agreement between the program director and the trainee.
13. In addition, the fellow is expected to actively participate in various lectures and seminars related to the training program.
14. Fellows follow their own patients throughout their fellowship through the longitudinal care clinic in the center under the guidance of the faculty and have the opportunity to work with the entire faculty in both inpatient and outpatient settings.



15. Establish a research project. A wide spectrum of topics is open for this, including basic research, animal investigation, or clinical research with affiliated staff. Approved proposal by a recognized IRB committee of the research work must be completed at the end of the year.

Second-year Fellows (F2)

Second Year Fellows (F2)	
Duration in weeks	Name of Rotation
20 weeks	General diabetes clinics, including adult diabetes, adolescent diabetes, advanced diabetes technology (CGM, insulin pump), and gestational diabetes clinics
4 weeks	Cardiology department (outpatient)
4 weeks	Neurology (outpatient)
8 weeks	Endocrinology department
4 weeks	Nephrology department
4 weeks	Obesity/bariatric medicine and surgery department/clinics
4 weeks	Psychiatry/clinical psychology department
4 weeks	Annual vacation
1 week	Educational leave during the year

- Fellows are expected to cover out-patient rotations as well as in-patient and consultation services during rotation.
- Maximum of 3-6 months per year for abroad rotations outside the primary center, if needed for covering any rotation.
- Expose fellows to wider types of health care services and gaining experience with different healthcare systems.

Second-year Fellow (F2) Job Descriptions

1. Review junior resident and fellow admission notes and orders, discuss proposed management plans, and supervise their implementation.

2. Document the patient's history and clinical examination independently, supervise the progress notes of junior residents and fellows daily, and record progress notes in the chart at least three times per week.
3. Assist and supervise junior residents and fellows in interpreting laboratory investigations and performing bedside diagnostic and therapeutic procedures during working hours and on-call duties.
4. Assist junior residents and fellows in acquiring computer skills to research the literature and follow evidence-based approaches to patient care.
5. Attend to consultations, including those of the emergency department, within and outside the department.
6. Outpatient clinics entail a minimum of 5 clinics per week (maximum of 7). Fellows should participate in outpatient clinics in the specialties to which the fellow is assigned under the supervision of consultants. Fellows are not expected to cover clinics without consultant supervision.
7. Participate in departmental and section activities.
8. Actively participate in the education and training of medical students, interns, and junior fellows.
9. Produce timely and thorough reports for morbidity and mortality departmental meetings and specialty club meetings.
10. Participate in on-call duties according to the rules and regulations of SCFHS. These include a minimum of 5 days per month and maximum of 7 per month or consecutive 14 days per two months upon agreement between the program director and the trainee.
11. Complete a research project. A wide spectrum of topics is open for this, including basic research, animal investigation, or clinical research with affiliated staff. Research work should be published (see the assessment section) at the end of the program. Fellows should be able to present their data to the fellowship research steering committee.



Rotation Road Map

	First Year		Second Year		
	Service	Period	Service	Period	
General Diabetes	Adult diabetes	22 weeks	Out-patient and in-patient diabetes consultation & in-patient diabetes service	Adult diabetes	20 weeks
	Adolescent diabetes			Adolescent diabetes	
	Advanced diabetes technology (CGM, insulin pump)			Advanced diabetes technology (CGM, insulin pump)	
	Gestational diabetes			Gestational diabetes	
Specialized Clinics	Diabetic education & clinical nutrition	8 weeks	Out-patient and in-patient diabetes consultation & in-patient diabetes service	Nephrology	4 weeks
	Ophthalmology / retina	4 weeks		Bariatric medicine & surgery	4 weeks
	Pediatric diabetes	8 weeks		Psychiatry	4 weeks
	Podiatry	6 weeks		Neurology	4 weeks
				Cardiology	4 weeks
				Endocrinology department	8 weeks
Leave	Annual	4 weeks	Annual	4 weeks	
	Educational	1 week	Educational	1 week	

Vacations:

Fellows are eligible each year for:

1. One of the Eid holidays (total days of vacation will be based on the rules and regulations of the training center in which they are rotating).
2. 1-week educational leave,
3. Annual holidays of 4 weeks (can be divided, with minimum of 1 week).

In-patient and Consultation Services: The Second Core Program Structure

General Goals and Objectives:

- To learn all diabetes disorders (this includes understanding what question is being asked by the referring physician, providing prompt evaluation of patients when consulted, and providing effective and timely communication with the referring physician/team).
- To develop competence in the diagnosis and management of a broad range of diabetes, endocrine, and metabolic disorders. This experience specifically stresses those aspects that are most encountered in the inpatient setting, such as:
 - Diabetes emergencies, *including*:
 - Diabetic ketoacidosis
 - Hyperosmolar hyperglycemic state
 - Hyperglycemia
 - Hypoglycemia
 - Fluid, electrolyte, and acid-base metabolism disorders, *including*:
 - Hyponatremia and hyponatremia
 - Hyperkalemia and hypokalemia metabolic acidosis
 - Metabolic alkalosis
 - Disorders of magnesium metabolism
 - Diabetes insipidus, central, and nephrogenic



- Diabetes mellitus, *including*:
 - Acutely ill surgical and medical patients
 - Intravenous insulin protocols
 - Transition from intravenous to subcutaneous insulin
 - Post-discharge management and follow-up planning for newly diagnosed patient
- Lipid, carbohydrate, and protein metabolism disorders, including principles of enteral and parenteral nutritional support
- Hormone-producing neoplasms
- Differential diagnosis and management of disorders of primary and secondary hypertension
- The interpretation of laboratory tests, immunoassays, radionuclide, ultrasound radiology, and other imaging studies for the diagnosis and treatment of diabetes and related disorders and metabolic disease, including the effects of a variety of unrelated disorders.

Specific Objectives:

By the end of the fellowship program, each trainee is expected to develop broad knowledge in the following (but not restricted to) fields:

1. Basic knowledge

- A. Energy expenditure and basic metabolic needs
- B. Appetite control and satiety and dietary requirements
- C. Exercise physiology
- D. Physiology of glucose absorption and metabolism as well as insulin secretion and action
- E. Anatomy, embryology, and histology of the pancreas and other endocrine glands involved in the glucose metabolism, such as pituitary and adrenal glands
- F. Pathophysiology of diabetes and its complications

- G. Genetics, immunology, and molecular biology of diabetes
- H. Epidemiology of diabetes
- I. Statistics and basics of research
- This can be achieved through continuous educational activities conducted throughout the academic year via the self-learning process, lectures, grand rounds, and clinical activities.

2. Clinical knowledge

- A. History and physical examination skills related to diabetes
- B. Prevention of diabetes
- C. Classification and diagnosis of diabetes
- D. Management of diabetes
 - Dietary, exercise, and lifestyle management
 - Management in inpatient settings
 - Management in outpatient settings
 - Diabetes in the pediatric age group
 - Diabetes in the elderly age group
 - Pre-diabetes conditions: prevention, management, and follow up
 - Pharmacology of therapeutic agents used in the broad field of diabetes and related disciplines
 - Advance technology of diabetes management
- Trainees must demonstrate a multi-disciplinary approach to diabetes management in collaboration with these disciplines when caring for patients with diabetes.



4. Mapping of learning objectives and competency roles to program rotations:

1. General Diabetes Rotation

Description

General diabetes rotation is mandatory and is the core rotation for all fellows. It provides in-patient and consultation services for adult and pediatric patients admitted to general internal medicine, the subspecialties thereof (e.g., cardiology, cardiac intensive care unit, nephrology, transplant, etc.), general surgery, specialties thereof (e.g., cardiothoracic, trauma, vascular, neurosurgery, etc.), and OB/GYN. Fellows in rotation for general diabetes must obtain all CanMEDS core competencies while learning the basic skills required for the diagnosis and management of a broad range of medical conditions affecting both adolescents and adults.

Requirements:

- Outpatient clinics entail a minimum of 5 clinics per week (maximum of 7).
- Longitudinal diabetes care clinic once per week.
- Gestational diabetes: a minimum of 20 clinics or 80 patients.
- Insulin pump: a minimum of 20 clinics or 40 patients.

Duration of rotation for each level of training

- A minimum of 22 weeks at the junior level (F1).
- A minimum of 20 weeks at the senior level (F2).

The specific learning objectives and competency roles of this rotation are as follows:

- Obtain fundamental knowledge in the basic skills required to diagnose and manage a broad range of general medical conditions affecting adolescents and adults with diabetes (ME, COM, COL, P, HA).
- Demonstrate a thorough understanding of the relevant basic sciences, including pathophysiology, drug therapy, and the microbial basis of

diseases involving the key presenting problems and conditions listed below (ME, COM, COL, P, HA).

- ✓ Order appropriate and selective investigations and thereafter interpret the findings in the context of patients' complaints.
- ✓ Perform a complete health assessment that includes a focused physical examination and assessment of the patient's mental state.
- Formulate appropriate provisional and alternative diagnoses for key presenting problems and underlying conditions (ME, COM, COL, P, HA).
- Perform the procedures shown in Table 2 in a safe and competent manner, including the following, where appropriate (ME, COM, COL, P, HA, L).
 - ✓ Recognize indications and contraindications.
 - ✓ Obtain informed consent.
 - ✓ Ensure patient comfort, privacy, and adequate pain control.
 - ✓ Complete the necessary documentation.
 - ✓ Perform post-procedure follow-up and handover.
- Recognize common complications due to diabetes such as acute and chronic complications of diabetes as well as autonomic complications of diabetes (ME, COM, COL, P, HA, S).
- Demonstrate effective, appropriate, and timely application of preventive and therapeutic interventions relevant to prediabetes (ME, COM, HA, S).
- Identify the management of common conditions associated with diabetes such as dyslipidemia, hypertension, and cardiovascular diseases (ME, COM, P, HA, S).
- Demonstrate effective and appropriate management of diabetes in special populations such as gestational diabetes, diabetes in adolescents, children, and the elderly (ME, COM, COL, HA).
- Demonstrate effective and appropriate in-hospital management of diabetes (ME, P, HA, L, S).



- Recognize indications, contraindications, management, and complications of new diabetes technologies (ME, COM, COL, P, S).
- Demonstrate the different kinds of insulin pumps, install and operate them effectively, and follow up to adjust pump settings (ME, COM, COL, P, HA, L, S).
- Interpret insulin pump and AGP reports (ME, P).
- Document patient findings in medical records in a legible and timely manner (ME, P, L).
- Proactively communicate and liaise with patients and families regarding a patient's condition, management plan, and disposition (ME, COM, COL, P, HA).
- Respect the roles and responsibilities of other healthcare professionals, including nurses, pharmacists, and other allied health professionals (COM, COL, P).
- Promote prevention and health maintenance, including dietary factors, lifestyle modification, and smoking cessation during every consultation (COM, HA).
- Develop patient-centered care that values individual and family preferences as well as societal and religious norms (COM, COL, P).

Presenting problem	Underlying key condition	Primary focus in learning	Venue
Acute complications of DM	<ul style="list-style-type: none"> - Diabetes ketoacidosis - Hyperglycemic hyperosmolar state - Hyperglycemia - Hypoglycemia 	<ul style="list-style-type: none"> - Pathophysiology - Etiology - Diagnosis - Prevention - Screening - Management - Prevention 	<ul style="list-style-type: none"> - AHD - CBL - OBL

Presenting problem	Underlying key condition	Primary focus in learning	Venue
Chronic complications of DM (macro-vascular)	<ul style="list-style-type: none"> - Ischemic heart disease - Cerebrovascular accidents - Peripheral vascular disease 	<ul style="list-style-type: none"> - Pathophysiology - Etiology - Diagnosis - Prevention - Screening - Management - Prevention 	<ul style="list-style-type: none"> - RCC - AHD - CBL - OBL
Chronic complications of DM (micro-vascular)	<ul style="list-style-type: none"> - DM nephropathy - DM neuropathy - DM retinopathy 	<ul style="list-style-type: none"> - Pathophysiology - Etiology - Diagnosis - Prevention - Screening - Management - Prevention 	<ul style="list-style-type: none"> - RCC - AHD - CBL - OBL
Autonomic complications of diabetes	<ul style="list-style-type: none"> - DM gastropathy - DM enteropathy - DM erectile Dysfunction - Postural hypotension - Bradycardia 	<ul style="list-style-type: none"> - Pathophysiology - Etiology - Diagnosis - Prevention - Screening - Management - Prevention 	<ul style="list-style-type: none"> - RCC - AHD - CBL - OBL
Dyslipidemia	<ul style="list-style-type: none"> - Primary (familial) hyperlipidemia - Secondary (acquired) hyperlipidemia - Hypertriglyceridemia - Dyslipidemia in pregnancy 	<ul style="list-style-type: none"> - Etiology - Screening - Clinical manifestation - Evaluation - Management 	<ul style="list-style-type: none"> - RCC - AHD - CBL



Presenting problem	Underlying key condition	Primary focus in learning	Venue
Hypertension	<ul style="list-style-type: none"> - Primary hypertension - Secondary hypertension - Hypertensive crisis 	<ul style="list-style-type: none"> - Diagnosis - Classification - Evidence-based management - Complications 	<ul style="list-style-type: none"> - RCC - AHD - CBL - OBL
Diabetes in special populations	<ul style="list-style-type: none"> - Gestational DM - DM in adolescents - DM in children - DM in elderly 	<ul style="list-style-type: none"> - Etiology - Diagnosis - Prevention - Screening - Management - Prevention 	<ul style="list-style-type: none"> - RCC - AHD - CBL - OBL
Pre-diabetes	<ul style="list-style-type: none"> - Patients with metabolic syndrome - Pre-diabetes 	<ul style="list-style-type: none"> - Pathophysiology - Etiology - Diagnosis - Prevention - Screening - Management - Prevention 	<ul style="list-style-type: none"> - AHD - CBL
In-hospital management of DM	<ul style="list-style-type: none"> - DM patients going to surgery - Uncontrolled DM in general wards - DM in pregnancy - DM in patients with ASCVD - Steroid induced hyperglycemia 	<ul style="list-style-type: none"> - Diagnosis - Management - Prevention of complications 	<ul style="list-style-type: none"> - AHD - OBL

Presenting problem	Underlying key condition	Primary focus in learning	Venue
Insulin pump		<ul style="list-style-type: none"> - Indications - Contraindications - Management - Complications - Install and operate the pump effectively - Initiate pump therapy - Follow and adjust pump settings - Interpret CGMS 	<ul style="list-style-type: none"> - AHD - CBL - RCC

2. Diabetes Education Rotation

Description

Fellows on rotation in the health education department (mainly diabetes) must obtain all CanMEDS core competencies while learning the basic skills required for the proper education of patients with diabetes.

Requirements:

- A minimum of 8 clinics.
- A certified diabetes educator OR nurse with certification in DM education should be available.

Duration of the rotation for each level of training

- A minimum of 4 weeks at the junior level (F1).

The specific learning objectives and competency roles of this rotation are as follows:

- Demonstrate the ability to educate patients and families in the comprehensive prevention and management of diabetes, working closely with diabetic educators, dieticians, and psychologists (ME, COM, COL, P, HA).



- Efficiently use the available educational materials and actively participate in producing more thereof (ME, COL, P, HA).
- Demonstrate effective and appropriate education in hyperglycemia, hypoglycemia, insulin injections, oral hypoglycemic agents, chronic diabetes complications, and basic dietary advice (ME, P, HA, S).
- Interpret home glucose monitoring readings and AGP reports (ME, COM, COL, P, HA, S).
- Demonstrate the ability to install and operate the insulin pump effectively (ME, COM, COL, P, HA, S).
- Follow and adjust insulin pump settings (ME, COM, COL, P,).
- Demonstrate the ability of carbohydrate counting (ME, COM, COL).

Presenting problem	Underlying key condition	Primary focus in learning	Venue
Diabetes education	<ul style="list-style-type: none"> - Hyperglycemia - Hypoglycemia - Insulin injections - Oral hypoglycemic agents - Chronic diabetes complications - Basic dietary advice 	<ul style="list-style-type: none"> - Etiology - Manifestation - Diagnosis - Complications - Evidence-based management - Prevention - Effective delivery of information - Communication skills - Patient empowerment - Effective use of teaching materials 	<ul style="list-style-type: none"> - AHD - CBL - DCC - RCC
Glucose Monitoring	<ul style="list-style-type: none"> - Home glucose monitoring - CGMS 	<ul style="list-style-type: none"> - Indications - Monitoring - Installation and follow-up of CGMS - Communication skills - Patient empowerment 	<ul style="list-style-type: none"> - AHD - CBL - DCC - RCC

Presenting problem	Underlying key condition	Primary focus in learning	Venue
Insulin pump therapy		<ul style="list-style-type: none"> - Install and operate the pump effectively - Follow and adjust pump settings - Interpret CGMS in patients using insulin pump - Carbohydrate counting 	<ul style="list-style-type: none"> - AHD - CBL - DCC - RCC
Diabetes education in special situations	<ul style="list-style-type: none"> - Hajj - Ramadan - Sick days 	<ul style="list-style-type: none"> - Management - Complications - Monitoring 	<ul style="list-style-type: none"> - AHD - CBL

3. Diabetes Nutritional Management Rotation

Description

Fellows on rotation in the medical nutrition department (mainly diabetes) must obtain all CanMEDS core competencies while learning the basic skills required for the proper nutritional management of patients with diabetes.

Requirements:

- A minimum of 8 clinics.
- A clinical nutritionist must be available.

Duration of the rotation for each level of training

- A minimum of 4 weeks at the junior level (F1).

The specific learning objectives and competency roles of this rotation are as follows:

- Describe the different kinds of diets, the number of daily calories required for diabetic patients, calorie counting, the diets related to a specific condition associated with diabetes such as diabetic nephropathy, dieting during Ramadan, and so forth (ME, COM, COL, P, HA).



- Demonstrate effective and appropriate gestational diabetes nutritional management (ME, COM, COL, P, HA, S).
- Describe the effect of the glycemic indices of different foods on glycemic control (ME, COM, COL).
- Describe all kinds of diets, including the low fat and low carbohydrate diet (ME, COM, COL, P, HA, S).
- Demonstrate the ability to conduct carbohydrate counting (ME, COM, COL).

Presenting problem	Underlying key condition	Primary focus in learning	Venue
Diabetes nutritional management	<ul style="list-style-type: none"> - Low fat and low carbohydrate diet - Carbohydrate counting - Glycemic indices of different foods - Estimation of caloric needs - GDM diet 	<ul style="list-style-type: none"> - Indications - Contraindications - Evidence-based management - Effective delivery of information - Communication skills - Patient empowerment - Effective use of teaching materials 	<ul style="list-style-type: none"> - CBL - DCC - RCC

4. Ophthalmology Rotation

Description

Fellows on rotation in the ophthalmology department must obtain all CanMEDS core competencies while learning the basic skills required for the diagnosis and management of a broad range of ophthalmology conditions that are developed secondary to diabetes mellitus.

Requirements:

- A minimum of 8 retinal clinics.

Duration of the rotation for each level of training

- A minimum of 4 weeks at the junior level (F1).

The specific learning objectives and competency roles of this rotation are as follows:

- Describe common acute complications of diabetic eye disease such as retinal detachment and retinal hemorrhage (ME, COM, COL, P).
- Describe common chronic complications accompanying diabetic eye disease such as proliferative diabetic retinopathy, non-proliferative diabetic retinopathy, macular edema, and cataract and iris disease secondary to diabetes (ME, COM, COL, P).
- Perform and interpret visual acuity testing (ME, P, HA).
- Demonstrate the ability to use the indirect ophthalmoscope (ME, COM, COL, P).
- Demonstrate the ability to conduct a direct funduscopy examination (ME, COM, COL, P).
- Demonstrate the ability to interpret retinal photographs (ME, COM, COL, P, HA).
- Give effective and appropriate advice related to driving a vehicle (ME, COM, COL, HA).
- Perform the procedures shown in Table 2 in a safe and competent manner, including the following where appropriate (ME, COM, COL, P, HA, L):
 - ✓ Recognize indications and contraindications.
 - ✓ Obtain informed consent.
 - ✓ Ensure patient comfort, privacy, and adequate pain control.
 - ✓ Complete the necessary documentation.
 - ✓ Perform a post-procedure follow-up and handover.



Presenting problem	Underlying key condition	Primary focus in learning	Venue
Acute complications of diabetic eye disease	<ul style="list-style-type: none"> - Retinal detachment - Retinal hemorrhage 	<ul style="list-style-type: none"> - Etiology - Classification - Manifestation - Diagnosis - Complications - Evidence-based management 	<ul style="list-style-type: none"> - CBL - DCC - OBL - RCC
Chronic complications of diabetic eye disease	<ul style="list-style-type: none"> - Proliferative diabetic retinopathy - Non-proliferative diabetic retinopathy - Macular edema - Cataract - Iris disease secondary to diabetes 	<ul style="list-style-type: none"> - Screening - Etiology - Manifestation - Diagnosis - Complications - Evidence-based management - Prevention - Perform and interpret visual acuity testing - Use indirect ophthalmoscope - Interpret retinal photographs - Give advice about driving vehicles 	<ul style="list-style-type: none"> - CBL - DCC - OBL - RCC

5. Pediatric Diabetes and Endocrinology Rotation

Description

The pediatric diabetes and endocrinology rotation provides in-patient and consultation services for pediatric in-patients admitted to hospital as well as attending clinics. Fellows on rotation in the pediatric department must obtain all CanMEDS core competencies while learning the basic skills required for the diagnosis and management of a broad range of medical conditions affecting adolescents and children with diabetes.

Requirements:

- A minimum of 5 clinics weekly.

Duration of the rotation for each level of training

- A minimum of 8 weeks at the junior level (F1).

The specific learning objectives and competency roles of this rotation are as follows:

- Recognize how diabetes affects children (ME, COM, COL, HA).
- Recognize common complications in children due to diabetes such as acute and chronic complications and autonomic complications thereof (ME, COM, COL, P, HA).
- Identify the proper management of common conditions associated with diabetes in children and adolescents such as dyslipidemia, hypertension, thyroid dysfunction, and obesity (ME, COM, COL, P, HA).
- Demonstrate effective and appropriate in-hospital management of diabetes in children and adolescents (ME, COM, COL, P, HA)
- Identify the proper provision of care to young persons with diabetes who are transitioning to adult service (ME, COM, COL, HA).
- Explain the physiological, psychological, and social problems of glycemic control in adolescents (ME, COM, COL, P, HA).
- Identify expected risk-taking behaviors in young persons and the effects on diabetes (ME, P, HA).
- Recognize the extant knowledge on preventive studies for type 1 diabetes (ME, P, HA).
- Identify the proper education on diet, exercise, hypoglycemia (symptoms and management) for children and adolescents with type 1 and type 2 diabetes (ME, COM, COL, HA).
- Demonstrate skills in type 1 and 2 diabetes management in children and adolescents using different types of insulin and insulin regimens (ME, COM, COL, P, HA).
- Demonstrate knowledge and skills in the selection, education, initiation, and follow-up of the use of insulin pumps in children and adolescents with type 1 diabetes (ME, COM, COL, P, HA).



Presenting problem	Underlying key condition	Primary focus in learning	Venue
Acute complications of DM	<ul style="list-style-type: none"> - Diabetes ketoacidosis - Hyperglycemia - Hypoglycemia 	<ul style="list-style-type: none"> - Pathophysiology - Etiology - Diagnosis - Prevention - Screening - Management - Prevention - Involving families in management 	<ul style="list-style-type: none"> - RCC - AHD - CBL - OBL
Chronic complications of DM (microvascular)	<ul style="list-style-type: none"> - DM nephropathy - DM neuropathy - DM retinopathy 	<ul style="list-style-type: none"> - Pathophysiology - Etiology - Diagnosis - Prevention - Screening - Management - Prevention 	<ul style="list-style-type: none"> - RCC - AHD - CBL - OBL
Autonomic complications of diabetes	<ul style="list-style-type: none"> - DM gastropathy - DM enteropathy - Postural hypotension - Bradycardia 	<ul style="list-style-type: none"> - Pathophysiology - Etiology - Diagnosis - Prevention - Screening - Management - Prevention - Involving families in management 	<ul style="list-style-type: none"> - RCC - AHD - CBL - OBL

Presenting problem	Underlying key condition	Primary focus in learning	Venue
Dyslipidemia in children	<ul style="list-style-type: none"> - Primary (familial) Hyperlipidemia - Secondary (acquired) Hyperlipidemia - Hypertriglyceridemia 	<ul style="list-style-type: none"> - Etiology - Screening - Clinical manifestation - Evaluation - Management 	<ul style="list-style-type: none"> - RCC - AHD - CBL
Hypertension in children	<ul style="list-style-type: none"> - Primary hypertension - Hypertensive crisis 	<ul style="list-style-type: none"> - Diagnosis - Classification - Evidence-based management - Complications 	<ul style="list-style-type: none"> - RCC - AHD - CBL - OBL
In-hospital management of DM	<ul style="list-style-type: none"> - DM patients going to surgery - Uncontrolled DM in general wards 	<ul style="list-style-type: none"> - Diagnosis - Management - Prevention of complications 	<ul style="list-style-type: none"> - AHD - OBL
Insulin pump in children and adolescents		<ul style="list-style-type: none"> - Indications - Contraindications - Management - Complications - Install and operate the pump effectively - Initiate pump therapy - Follow and adjust pump settings - Interpret CGMS - Involving families in management 	<ul style="list-style-type: none"> - AHD - CBL - RCC



6. Podiatry Rotation

Description

Fellows on rotation in the podiatry department (mainly diabetes) must obtain all CanMEDS core competencies while learning the basic skills required for proper foot care management for diabetes patients. Fellows should focus on undifferentiated patient problems as well as those that emerge in previously diagnosed diabetes patients.

Requirements:

- A minimum of 12 diabetic foot clinics.

Duration of the rotation for each level of training

- A minimum of 6 weeks of rotation at the junior level (F1).

The specific learning objectives and competency roles of this rotation are as follows:

- Describe essential foot care skills (ME, COM, COL, HA).
- Describe preventive foot care for patients with diabetes (ME, COM, COL, HA).
- Recognize the extant knowledge on different diabetic foot dressing techniques (ME, COM, COL, P, HA).
- Recognize acute diabetic-related foot conditions such as gas gangrene, acute Charcot joint, acute ischemic leg, acute foot ulcers, and osteomyelitis (ME, COM, COL, HA).
- Identify chronic diabetic-related foot conditions such as bacterial gangrene, chronic Charcot joint, chronic ischemic leg, and chronic foot ulcers (ME, COM, COL, P, HA).
- Describe the role of different radiologic imaging techniques used in diagnosing osteomyelitis and Charcot foot (ME, COM, COL, P, HA).
- Demonstrate the necessary skills for the simple debridement of foot ulcers/gangrene, calluses, and in-grown nail removal (ME, COM, COL, P, HA).

- Set an appropriate management and follow-up plan for each patient (ME, COM, COL, P, HA).

Presenting problem	Underlying key condition	Primary focus in learning	Venue
Acute diabetic-related foot conditions	<ul style="list-style-type: none"> - Gas gangrene - Acute Charcot joint - Acute ischemic leg - Acute foot ulcers - Osteomyelitis 	<ul style="list-style-type: none"> - Etiology - Classification - Manifestation - Diagnosis - Complications - Evidence-based management (including debridement) - Prevention 	<ul style="list-style-type: none"> - AHD - CBL - DCC - OBL - RCC
Chronic diabetic-related foot conditions	<ul style="list-style-type: none"> - Other bacterial gangrene - Chronic Charcot joint - Chronic ischemic leg - Chronic foot ulcers 	<ul style="list-style-type: none"> - Etiology - Classification - Manifestation - Diagnosis - Complications - Evidence-based management - Prevention 	<ul style="list-style-type: none"> - AHD - CBL - DCC - OBL - RCC
Foot care		<ul style="list-style-type: none"> - Proper teaching - Preventive measures 	<ul style="list-style-type: none"> - AHD - CBL - RCC

7. Nephrology Rotation

Description

Fellows on rotation in the nephrology department must obtain all CanMEDS core competencies while learning the basic skills required to diagnose and manage a broad range of nephrology conditions that develop secondary to diabetes mellitus.



Requirements:

- A minimum of 8 clinics.

Duration of the rotation for each level of training

- A minimum of 4 weeks of rotation at the senior level (F2).

The specific learning objectives and competency roles of this rotation are as follows:

- Describe the effective and appropriate diagnosis and management of essential hypertension and secondary hypertension as well as its complications (ME, COM, COL, HA).
- Describe effective and appropriate screening, diagnosis, and management of diabetes-related albuminuria (ME, COM, COL, P, HA).
- Recognize effective and appropriate management approaches to common nephrology conditions such as acute tubular necrosis, contrast-induced nephropathy, chronic kidney diseases, diabetes nephropathy, hypertensive nephropathy, and electrolyte disturbance (ME, COM, COL, HA).
- Demonstrate effective and appropriate management of diabetes in chronic renal disease (ME, COM, COL, P, HA).
- Demonstrate effective and appropriate management of diabetes in transplant patients (ME, COM, COL, P, HA).
- Demonstrate effective and appropriate management of diabetes in dialysis patients (ME, COM, COL, P, HA).
- Demonstrate the ability to adjust insulin doses in dialysis patients (ME, COM, COL, P, HA).

Presenting problem	Underlying key condition	Primary focus in learning	Venue
Hypertension	<ul style="list-style-type: none"> - Essential hypertension - Secondary hypertension 	<ul style="list-style-type: none"> - Etiology - Classification - Manifestation - Diagnosis - Complications - Evidence-based management 	<ul style="list-style-type: none"> - CBL - DCC - RCC
Diabetes-related albuminuria	<ul style="list-style-type: none"> - Micro-albuminuria - Macro-albuminuria 	<ul style="list-style-type: none"> - Screening - Etiology - Manifestation - Diagnosis - Complications - Evidence-based management 	<ul style="list-style-type: none"> - CBL - DCC - RCC
Acute kidney diseases	<ul style="list-style-type: none"> - Acute tubular necrosis - Contrast-induced nephropathy 	<ul style="list-style-type: none"> - Etiology - Classifications - Pathophysiology - Manifestation - Complications - Diagnosis - Management - Prevention 	<ul style="list-style-type: none"> - AHD - RCC - DCC



Presenting problem	Underlying key condition	Primary focus in learning	Venue
Chronic kidney diseases	<ul style="list-style-type: none"> - Diabetes nephropathy - Hypertensive nephropathy 	<ul style="list-style-type: none"> - Screening - Etiology - Classifications - Pathophysiology - Manifestation - Complications - Diagnosis - Management - Prevention - Management of diabetes in chronic renal disease patients 	<ul style="list-style-type: none"> - RCC - DCC
Dialysis	<ul style="list-style-type: none"> - Hemodialysis - Peritoneal dialysis 	<ul style="list-style-type: none"> - Indications - Contraindications - Management of diabetes in dialysis patients 	<ul style="list-style-type: none"> - RCC - AHD
Renal transplantation		<ul style="list-style-type: none"> - Types - Indications for referral - Indications - Contraindications - Complications - Post-transplantation management - Management of rejection - Management of diabetes in transplant patients 	<ul style="list-style-type: none"> - AHD - RCC - DCC

8. Endocrinology and Metabolism Rotation

Description

Fellows on rotation in the endocrinology and metabolism department must obtain all CanMEDS core competencies while learning the basic skills required to diagnose and manage a broad range of endocrinology and metabolic conditions affecting adolescents and adults with diabetes mellitus or glucose metabolism. Fellows should focus on undifferentiated patient problems and those that emerge in previously diagnosed patients.

Requirements:

- A minimum of 12 clinics.

Duration of the rotation for each level of training

- A minimum of 8 weeks of rotation at the senior level (F2).

The specific learning objectives and competency roles of this rotation are as follows:

- Describe the effective and appropriate diagnosis and management of thyroid gland disorders such as hyperthyroidism and thyroid storm, hypothyroidism, goiters, thyroid cancers, and thyroid disease in pregnancy (ME, COM, COL, HA).
- Describe the effective and appropriate screening, diagnosis, and management approach to primary and secondary dyslipidemia (ME, COM, COL, P, HA).
- Recognize the most effective and appropriate management of common calcium metabolism disorders such as hypoparathyroidism, hyperparathyroidism, vitamin D deficiency, and osteoporosis (ME, COM, COL, HA).
- Recognize the most effective and appropriate management of pituitary disorders such as acromegaly and Cushing's disease (ME, COM, COL, P, HA).



- Recognize the most effective and appropriate management of common adrenal gland disorders such as adrenal insufficiency, Cushing's syndrome, and hyperaldosteronism (ME, COM, COL, P, HA).
- Recognize the most effective and appropriate management of such conditions as hirsutism and polycystic ovary syndrome (ME, COM, COL, P, HA).
- Perform the procedures shown in Table 2 in a safe and competent manner, including the following where appropriate (ME, COM, COL, P, HA, L):
 - ✓ Recognize the indications and contraindications.
 - ✓ Obtain informed consent.
 - ✓ Ensure patient comfort, privacy, and adequate pain control.
 - ✓ Complete the necessary documentation.
 - ✓ Perform post-procedure follow-up and handover.

Presenting problem	Underlying key condition	Primary focus in learning	Venue
Thyroid gland disorders	<ul style="list-style-type: none"> - Hyperthyroidism and thyroid storm - Hypothyroidism and myxedema coma - Goiters - Thyroid cancers - Thyroid disease in pregnancy 	<ul style="list-style-type: none"> - Etiology - Pathophysiology - Classification - Manifestation - Diagnosis - Complications - Management 	<ul style="list-style-type: none"> - AHD - CBL - DCC - OBL - RCC
Dyslipidemia	<ul style="list-style-type: none"> - Familial Dyslipidemia - Secondary Dyslipidemia 	<ul style="list-style-type: none"> - Etiology - Pathophysiology - Classification - Manifestation - Diagnosis - Complications - Management 	<ul style="list-style-type: none"> - AHD - CBL - DCC - OBL - RCC

Presenting problem	Underlying key condition	Primary focus in learning	Venue
Calcium metabolism disorders	<ul style="list-style-type: none"> - Hypoparathyroidism - Hyperparathyroidism - Vitamin D deficiency - Osteoporosis 	<ul style="list-style-type: none"> - Etiology - Classification - Diagnosis - Complications - Management 	<ul style="list-style-type: none"> - AHD - CBL - DCC - RCC
Adrenal gland disorders	<ul style="list-style-type: none"> - Adrenal insufficiency - Cushing's syndrome - Hyperaldosteronism 	<ul style="list-style-type: none"> - Etiology - Manifestation - Diagnosis - Screening - Management 	<ul style="list-style-type: none"> - RCC - DCC
Hirsutism	<ul style="list-style-type: none"> - Polycystic ovary syndrome - Cushing's syndrome 	<ul style="list-style-type: none"> - Drugs - Etiology - Pathophysiology - Manifestation - Diagnosis - Management - Prevention 	<ul style="list-style-type: none"> - AHD - RCC - DCC
Pituitary disorders	<ul style="list-style-type: none"> - Acromegaly - Cushing's disease 	<ul style="list-style-type: none"> - Etiology - Manifestation - Diagnosis - Screening - Management 	<ul style="list-style-type: none"> - AHD - RCC

9. Obesity/bariatric medicine and surgery rotation

Description

Fellows on rotation in the bariatric medicine and surgery department must obtain all CanMEDS core competencies while learning the basic skills required for the diagnosis and management of a broad range of bariatric medicine and surgery conditions affecting adolescents and adults with diabetes mellitus.

Requirements:

- A minimum of 8 clinics.



Duration of the rotation for each level of training

- A minimum of 4 weeks of rotation at the senior level (F2).

The specific learning objectives and competency roles of this rotation are as follows:

- Describe the most effective and appropriate screening, diagnosis, and management approach overweight, obesity, and metabolic syndromes in adults and children (ME, COM, COL, P, HA).
- Discuss the indications, contraindications, and complications of various bariatric surgeries (ME, COM, COL, HA).
- Recognize the most effective post-operative evidence-based management of patients with diabetes (ME, COM, COL, P, HA).
- Recognize the most effective and appropriate nutritional management approach to post-surgery patients (ME, COM, COL, P, HA).
- Demonstrate the ability to adjust anti-diabetic medications post-bariatric surgeries (ME, COM, COL, P, HA).
- Perform the procedures shown in Table 2 in a safe and competent manner, including the following where appropriate (ME, COM, COL, P, HA, L):
 - ✓ Recognize the indications and contraindications.
 - ✓ Obtain informed consent.
 - ✓ Ensure patient comfort, privacy, and adequate pain control.
 - ✓ Complete the necessary documentation.
 - ✓ Perform post-procedure follow-ups and handovers.

Presenting problem	Underlying key condition	Primary focus in learning	Venue
Bariatric medicine	<ul style="list-style-type: none"> - Obesity in adults and children - Overweight - Metabolic syndrome 	<ul style="list-style-type: none"> - Etiology - Classification - Manifestation - Diagnosis - Complications - Evidence-based management - Prevention - Nutritional therapy 	<ul style="list-style-type: none"> - AHD - CBL - DCC - OBL - RCC
Bariatric surgery	<ul style="list-style-type: none"> - Gastric bypass surgery (Roux-en-Y) - Adjustable gastric banding (lap band surgery) - Gastric sleeve surgery (vertical sleeve gastrectomy) - Bilio-pancreatic diversion with duodenal switch 	<ul style="list-style-type: none"> - Indications - Contraindications - Complications - Post-operative evidence-based management - Nutritional management post-surgery 	<ul style="list-style-type: none"> - AHD - CBL - DCC - OBL - RCC

10 Cardiology Rotation

Description

Fellows on rotation in the cardiology department must obtain all CanMEDS core competencies while learning the basic skills required to diagnose and manage a broad range of cardiology conditions developed secondary to diabetes mellitus.

Requirements:

- A minimum of 8 clinics.

Duration of the rotation for each level of training

- A minimum of 4 weeks of rotation at the senior level (F2).



The specific learning objectives and competency roles of this rotation are as follows:

- Recognize the most effective and appropriate approach to the prevention, diagnosis, and management of acute coronary complications (ME, COM, COL, P, HA).
- Describe the etiology, manifestation, diagnosis, complications, management, and prognosis of heart failure (ME, COM, COL, HA).
- Describe the etiology, manifestation, diagnosis, complications, management, and prognosis of diabetic cardiomyopathy ME, COM, COL, P, HA).
- Demonstrate the ability to interpret the findings of cardiovascular trial outcomes in patients with diabetes (ME, COM, COL, P, HA).
- Perform the procedures shown in Table 2 in a safe and competent manner, including the following where appropriate (ME, COM, COL, P, HA, L):
 - ✓ Recognize the indications and contraindications.
 - ✓ Obtain informed consent.
 - ✓ Ensure patient comfort, privacy, and adequate pain control.
 - ✓ Complete the necessary documentation.
 - ✓ Perform post-procedure follow-up and handover.

Presenting problem	Underlying key condition	Primary focus in learning	Venue
Acute coronary syndrome	- Unstable Angina	- Etiology	- AHD
	- Non-ST segment elevation myocardial infarction (NSTEMI)	- Classification	- CBL
	- ST segment elevation myocardial infarction (STEMI)	- Manifestation	- DCC
		- Diagnosis	- RCC
		- Complications	- OBL
		- Evidence-based management	
		- Prevention	

Presenting problem	Underlying key condition	Primary focus in learning	Venue
Heart failure	<ul style="list-style-type: none"> - Heart failure with preserved ejection fraction - Heart failure with reduced ejection fraction 	<ul style="list-style-type: none"> - Etiology - Manifestation - Diagnosis - Complications - Management - Prognosis 	<ul style="list-style-type: none"> - AHD - CBL - DCC - RCC
Diabetic cardiomyopathy		<ul style="list-style-type: none"> - Etiology - Pathophysiology - Manifestation - Grades - Complications - Diagnosis - Management - Prevention 	<ul style="list-style-type: none"> - AHD - CBL - DCC - RCC

11. Neurology Rotation

Description

Fellows on rotation in the neurology department must obtain all CanMEDS core competencies while learning the basic skills required to diagnose and manage a broad range of neurology conditions developed secondary to diabetes mellitus.

Requirements:

- A minimum of 8 clinics.

Duration of the rotation for each level of training

- A minimum of 4 weeks of rotation at the senior level (F2).

The specific learning objectives and competency roles of this rotation are as follows:

- Recognize the most effective and appropriate approach to the management of common diabetic neurology conditions such as hyperglycemic neuropathy, generalized neuropathies, focal and



multifocal neuropathies, and superimposed chronic inflammatory demyelinating polyneuropathy (ME, COM, COL, P, HA).

- Describe the etiology, manifestation, diagnosis, complications, management, and prevention of autonomic neuropathy in patients with diabetes such as gastroparesis, orthostatic hypotension, and erectile dysfunction (ME, COM, COL, HA).
- Perform the procedures shown in Table 2 in a safe and competent manner, including the following where appropriate (ME, COM, COL, P, HA, L):
 - ✓ Recognize the indications and contraindications.
 - ✓ Obtain informed consent.
 - ✓ Ensure patient comfort, privacy, and adequate pain control.
 - ✓ Complete the necessary documentation.
 - ✓ Perform post-procedure follow-up and handover.

Presenting problem	Underlying key condition	Primary focus in learning	Venue
Cerebrovascular diseases	<ul style="list-style-type: none"> - Stroke - TIA 	<ul style="list-style-type: none"> - Etiology - classification - Pathophysiology - Manifestation - Complications - Diagnosis - Management - Prevention 	<ul style="list-style-type: none"> - AHD - CBL - DCC - RCC - OBL

Presenting problem	Underlying key condition	Primary focus in learning	Venue
Diabetic neuropathy	<ul style="list-style-type: none"> - Hyperglycemic neuropathy - Generalized neuropathies <ul style="list-style-type: none"> ▪ Sensorimotor polyneuropathy ▪ Acute painful sensory neuropathy ▪ Autonomic neuropathy - Focal and multifocal neuropathies <ul style="list-style-type: none"> ▪ Cranial neuropathies ▪ Thoracolumbar radiculoneuropathy ▪ Focal limb neuropathies (including compression and entrapment neuropathies) ▪ Proximal diabetic neuropathy - Superimposed chronic inflammatory demyelinating polyneuropathy 	<ul style="list-style-type: none"> - Screening - Etiology - Manifestation - Diagnosis - Complications - Evidence-based management - Prevention 	<ul style="list-style-type: none"> - AHD - CBL - DCC - RCC
Autonomic neuropathy	<ul style="list-style-type: none"> - Gastroparesis - Orthostatic hypotension - Erectile dysfunction - Blunting of physiological heart rate variation - Bladder dysfunction 	<ul style="list-style-type: none"> - Etiology - Pathophysiology - Manifestation - Complications - Diagnosis - Management - Prevention 	<ul style="list-style-type: none"> - AHD - CBL - DCC - RCC

12 Psychiatry rotation

Description

Fellows on rotation in the psychiatry department must obtain all CanMEDS core competencies while learning the basic skills required to diagnose and



manage the broad range of psychiatric conditions developed secondary to diabetes mellitus. Fellows should focus on undifferentiated patient problems and those that emerge in those previously diagnosed with diabetes.

Requirements:

- A minimum of 8 clinics.

Duration of the rotation for each level of training

- A minimum of 4 weeks of rotation at the senior level (F2).

The specific learning objectives and competency roles of this rotation are as follows:

- Recognize the most effective and appropriate approach to the management of acute psychiatric illnesses such as acute depression with suicidal ideation and anxiety (ME, COM, COL, P, HA).
- Describe the etiology, screening, manifestation, diagnosis, complications, management, and prevention of depression and anxiety disorders (ME, COM, COL, HA).
- Recognize common psychiatric medications (ME, P, HA).
- Describe the etiology, screening, manifestation, diagnosis, complications, management, and prevention of psychological issues in adolescents with diabetes (ME, COM, COL, HA).
- Demonstrate the ability to proactively communicate and liaise with patients and families regarding the patient's condition, management plan, and disposition (ME, COM, COL, HA).
- Recognize the roles and responsibilities of a psychologist in the management of diabetes distress (ME, COM, COL, P, HA).
- Develop patient-centered care that values individual and family preferences as well as societal and religious norms.

Presenting problem	Underlying key condition	Primary focus in learning	Venue
Acute psychiatric illnesses in DM	<ul style="list-style-type: none"> - Acute depression with suicidal ideation - Anxiety 	<ul style="list-style-type: none"> - Etiology - Manifestation - Diagnosis - Complications - Evidence-based management 	<ul style="list-style-type: none"> - AHD - CBL - DCC - OBL - RCC
Chronic psychiatric illnesses in DM individuals	<ul style="list-style-type: none"> - Chronic depression - Chronic anxiety 	<ul style="list-style-type: none"> - Screening - Etiology - Manifestation - Diagnosis - Evidence-based management - Prevention - Gain knowledge about common drugs used for depression/anxiety 	<ul style="list-style-type: none"> - AHD - CBL - DCC - OBL - RCC
Psychological issues in adolescents with DM		<ul style="list-style-type: none"> - Etiology - Manifestation - Diagnosis - Complications - Evidence-based management - Communication skills 	<ul style="list-style-type: none"> - AHD - CBL - DCC - OBL - RCC



VIII. TEACHING METHODS

1. Program-specific learning activities

- **Academic half-day activities (AHD):**
 - Emergency and non-emergency topic lectures
 - Procedures
 - Approaches to common conditions and symptoms
 - Clinical skills
 - Communication skills
 - Medical ethics
 - Data interpretation
 - Research and evidence-based practice
- **Workshops**
 - Diabetes technology workshop
 - Ophthalmology workshop
 - Podiatry workshop
 - Nutrition workshop
- **Rotational (practice-based) components of the curriculum**

1. Program-specific learning activities

The program-specific activities are educationally based in that they are specifically designed and intended for trainees' teaching during training. The trainees are required to attend these activities; non-compliance may subject trainees to disciplinary action. It is advisable to link attendance and participation to the continuous assessment tools (see the formative

assessment section below). Program administrators should support these activities by providing “protected time” for trainees that would allow them to attend and participate therein.

1.1. AHD:

- Each training center should have weekly diabetes AHD conducted at the regional level.
- AHD consists of several types of sessions scheduled by the fellows and program director, and includes:
 - Basic science.
 - Diabetes emergencies and non-emergencies.
 - Clinical problem solving.
 - Demonstration and practice of procedures.
 - Communication skills.
 - Data interpretation.
 - Medical research and statistics.
- The AHD program is a mandatory component of the diabetes fellowship program. It is designed to complement the clinical experience that fellows gain during their clinical rotations. Substantial effort should be made towards making these sessions interesting and relevant.
- Educational activities should be conducted on a weekly basis and contain different educational methods and strategies. These methods include but are not restricted to the following: problem solving, case discussion, interactive mini-lectures, group discussion, tutorials, workshops, and assignments.
- In all educational sessions, emphasis should be placed on important issues relating to ethics, evidence-based medicine, practice management, disease prevention, health promotion, proper communication skills, and professionalism. Please adhere to the training preprogram mission and the Saudi Commission manual.



- Attendance should be registered and a copy of the attendance record must be retained for reporting documentation.
- Trainees must attend all AHD sessions unless excused by the program director. During the first three months of the academic year, trainees with poor attendance records shall receive a reminder or warning letter concerning their unjustified absences. Trainees who continue to show poor attendance without providing an acceptable reason will be sent a second warning letter. Further action will be taken according to the Saudi Commission rules and regulations in this regard.

1.1.1 Emergency and non-emergency topic lectures (Table 1)

Lectures concerning emergency and non-emergency conditions are to be prepared and presented by a senior staff member. The series of topics is repeated annually to ensure adequate attainment of learning objectives.

The objective of these sessions is as follows:

- Review common emergency and nonemergency situations with respect to diagnosis and management.
- Apply relevant information to clinical practice.
- Practice contemporary, evidence-based, and cost-effective medicine.
- Formulate an appropriate management and follow-up plan for each patient.

Table 1: Emergency and non-emergency diabetes-related topics

Topic	Presenter	Date
Emergency diabetes-related topics		
General diabetes		
Diabetes Emergencies <ul style="list-style-type: none"> ▪ Diabetes ketoacidosis ▪ Hyperglycemic hyperosmolar state ▪ Severe hypoglycemia 		

Topic	Presenter	Date
Diabetic foot		
Acute Charcot joint		
Acute lower limb ischemia		
Ophthalmology		
Retinal hemorrhage		
Retinal detachment		
Nephrology		
Acute renal failure		
Hypertensive emergency		
Non-emergency diabetes-related topics		
History of diabetes		
Diabetes mellitus: pathophysiology, classification, and diagnosis		
Why are cardiovascular outcome trials of new antidiabetic drugs a must? And how does one make interpretations thereof?		
Screening and prevention of diabetes		
Evaluation and treatment of hypoglycemia in patients with diabetes		
Endocrine causes of diabetes		
Pharmacological interventions in diabetes mellites		
Macro and microvascular complications of diabetes		
Young onset of Type 2 diabetes		
Management of diabetes and gestational DM in pregnancy		
Type 3C diabetes and drug-induced diabetes		



Topic	Presenter	Date
Monogenic vs polygenic diabetes		
Diabetes kidney disease		
Peripheral diabetes neuropathy and painful diabetes neuropathy		
Ophthalmological complications of diabetes		
Autonomic neuropathy in patients with diabetes		
Dermatological changes in patients with diabetes		
Management of diabetic foot		
Hypertension management in patients with diabetes		
Lipid management in patients with diabetes		
Diabetes management in patient with chronic liver disease		
Psychological issues associated with diabetes		
Diabetes in Ramadan and Hajj		
Approach to patients with severe insulin resistance		
Insulin pump (concept, system set up, practical benefits)		
Interpretation of ECG		
Technology in diabetes (CGM) system set-up and practical benefits		
In-patient management of patients with diabetes		
Utilization of diabetes education in practice		
Obesity management		
Nutrition therapy in diabetes		

1.1.2 Procedures (Table 2)

Objectives:

- Apply knowledge and technical expertise in performing procedures, interpreting results, and understanding relevant limitations.
- Demonstrate effective, appropriate, and timely performance of therapeutic procedures.
- Demonstrate evidence-based physical examination skills that are relevant and precise.
- Demonstrate procedures on a task trainer.
- Learn ultrasound-guided procedures and develop familiarity with general ultrasound technology.
- The fellow should master the following for each procedure: indications, contraindications, complications and complication rate, procedural technique, sterile technique, consent for the procedure, and reporting complications.

Table 2: Procedure list

Procedures to be performed independently	Procedures to be performed under supervision	Procedures to be observed
Venipuncture	Central venous line insertion	Principles of endocrine dynamic tests: <ul style="list-style-type: none"> - Insulin Tolerance Test - Oral Glucose Tolerance Test with Growth Hormone Level - Low-Dose Dexamethasone Suppression Test - Synacthen Test - Water Deprivation Test
Cardiopulmonary resuscitation	Indirect funduscopy	



Procedures to be performed independently	Procedures to be performed under supervision	Procedures to be observed
Blood gas sampling	Slit lamp	
Urine analysis and microscopy	Optical Coherence Tomography (OCT)	
Direct funduscopy examination	Simple debridement of foot ulcer/gangrene and callus	
External cardioversion/defibrillator	Dressing of diabetic foot	
Fundus photography	In-grown nail removal	
Ankle brachial index		

Resources: New England Journal of Medicine; videos:

<http://content.nejm.org/misc/videos.dtl>; standard books or journal articles

<http://stanfordmedicine25.stanford.edu/index.html>

1.1.3 Approaches to common conditions and symptoms (Table 3)

These are lecture series concerning systematic approaches to common diabetes-related conditions with symptoms compiled and presented by a fellow during AHD under the supervision of a specialized senior staff member. These series are repeated annually.

The objectives of this activity are as follows:

- Demonstrate diagnostic and therapeutic skills.
- Access and apply relevant information to clinical practice.
- Practice contemporary, evidence-based, and cost-effective medicine.
- Avoid unnecessary or harmful investigations or management.

Table 3: Approach topics in AHD activities

Topic	Presenter	Date
Approach to hypertension in DM patients		
Approach to diabetic foot ulcer		
Assessment of nutritional status in DM patients		
Approach to weight gain and loss		
Approach to renal failure		
Approach to acid-based disturbance		
Approach to hyponatremia/hyponatremia		
Approach to hypokalemia/hyperkalemia		
Approach to hypocalcemia/hypercalcemia		
Approach to the management of gestational DM		
Approach to dyslipidemia		

1.1.4 Clinical skills (Table 4)

Most clinical skills sessions will be conducted at the bedsides of patients. This includes taking their history, conducting physical examinations, and improving communication skills. However, lectures and video demonstrations can be added to AHD activities before bedside practice.

The objectives of the clinical skills session are as follows:

- Recognize the many facets of the doctor–patient relationship and be able to apply a bio-psychosocial model to issues in health and medicine.
- Master basic interview and communication skills and demonstrate competence in advanced interview and communication skills.
- Master basic physical examination skills and be able to perform and interpret focused examinations of the cardiovascular, pulmonary, musculoskeletal, and neurological systems; breasts; and genitalia in men and women.



- Exhibit professional behaviors, including the demonstration of respect for patients, colleagues, faculty members, and others in all settings.
- Help fellows pass their clinical exams.

Table 4: Clinical skills

Please refer to the following link:

<http://stanfordmedicine25.stanford.edu/index.html>

Topic	Presenter	Date
Comprehensive diabetes history-taking		
General physical examination		
Cardiovascular examination: <ul style="list-style-type: none"> • Examination of pulses • Examination of JVP • Pericardial examination 		
Abdominal examination		
Respiratory examination		
Neurological examination <ul style="list-style-type: none"> • Higher mental function testing • Cranial nerves examination • Motor and sensory examination • Coordination 		
Thyroid examination		
Eye examination		
Foot examination		

1.1.5 Communication skills (Table 5)

The competencies for this role are essential for establishing rapport and trust, formulating a diagnosis, delivering information, striving for mutual understanding, and facilitating a shared care plan. Poor communication can lead to undesirable results and effective communication is critical for optimal

patient outcomes. Physicians enable patient-centered therapeutic communication via decision-making as well as effective and dynamic interactions with patients, families, caregivers, fellow professionals, and other important individuals. A series of communication skills lectures concerning common situations are regularly delivered by experienced staff members during AHD and are repeated annually.

Table 5: Communication scenarios

Topic	Presenter	Date
Dealing with medical errors		
Documentation		
Delivering bad news		
Expressing empathy		
Dealing with patient emotions (anger, fear, and sadness)		
Cultural diversity		
End-of-life discussion		
Informed consent		
Special-needs patients (learning disabilities and low literacy)		
Disclosing adverse events		
Establishing boundaries		
Explaining diagnosis, investigation, and treatment		
Involving the patient in decision-making		
Communicating with relatives and dealing with difficult patients/families		
Communicating with other healthcare professionals		
Seeking informed consent/clarification for an invasive procedure or obtaining consent for a postmortem		



Topic	Presenter	Date
Providing instructions regarding discharge		
Providing advice regarding lifestyle, health promotion, or risk factors		

1.1.6 Medical ethics (Table 6)

Ethical issues are frequently encountered during clinical practice. Discussing medico-legal aspects of care with experts is of paramount importance for better and safer training and practice. A senior staff member will raise a particular medico-legal issue to be interactively discussed with fellows during AHDs.

The competencies of this activity are as follows:

- Recognize the humanistic and ethical aspects of a career in medicine.
- Examine and affirm personal professional moral commitments.
- Equip fellows with a foundation of philosophical, social, and legal knowledge.
- Apply knowledge that has been gained in clinical reasoning and provide fellows with the skills required to apply this insight, knowledge, and reasoning to clinical care.

Table 6: Ethical issues in medicine

Topic	Presenter	Date
Principles of medical ethics		
Code of conduct and professionalism		
Good death		
Principles of research ethics		
Consent		
Truth-telling		

Topic	Presenter	Date
Confidentiality and patient autonomy		
Improving ethical practices in ward settings		
Ethics and moral aspects of genetics		
Ethics in treating mentally ill patients		
Medical negligence and professional misconduct		
Ethics of transplantation and organ donation		
Principles of resource allocation in healthcare systems		
Resource allocation in healthcare systems		
Withholding treatment and euthanasia <ul style="list-style-type: none"> • Code of conduct and professionalism • Good death • Principles of research ethics • Consent • Truth-telling • Confidentiality and patient autonomy • Improving ethical practices in ward settings • Ethics in treating terminally ill patients • Ethics and moral aspects of genetics • Ethics in treating mentally ill patients • Medical negligence and professional misconduct • Ethics of transplantation and organ donation • Principles of resource allocation in healthcare systems 		
Professional misconduct and negligence		

1.1.7 Data Interpretation

A full range of laboratory data encountered during daily practice (e.g., blood tests, ABG, fundal photos, and ECGs) is presented during AHDs. A case-based approach is used to assist trainees in digesting and understanding the



plethora of investigations with which they should be familiar. All fellows are expected to participate in this activity.

The objectives of the activity are as follows:

- Describe the various investigational tools used in internal medicine.
- Describe ways to appropriately interpret different investigational data.
- Demonstrate knowledge about the appropriate utilization of investigational tools
- Discuss the advantages and limitations of various investigational tools.

1.1.8 Research and evidence-based practice (Table 7)

The SCFHS promotes and supports research conducted by trainees. Therefore, all fellows are expected to participate in a research project. The presentation and dissemination of the work produced can occur during formal research days that can be held annually at various centers.

The objectives of the research aspect of the diabetes program are as follows:

- To effectively generate and disseminate research via oral presentations, poster presentations, and abstract preparations as well as to attend to core academic teaching applicable to research, including ethics, study design, abstract-writing, and presentation skills.
- To effectively conduct literature reviews, data synthesis and analysis, and interpretation.

Table 7: Evidence-based medicine and clinical research

Topics	Presenter	Date
Evidence-based practice definition and applications		
Biostatistics		
Research methodology		
How to start your research project		
How to write and publish your paper		

2.1. Workshops

During the training period, the fellow must attend 4 mandatory annual workshops that are approved and organized by the Saudi diabetes fellowship committee. The workshops are usually conducted over one or two days and the program director should release the fellow to attend.

These workshops include:

- Diabetes technology workshop.
- Ophthalmology workshop.
- Podiatry workshop.
- Nutrition workshop.

The objectives of the diabetes technology workshop are as follows:

- Describe the different types of insulin pumps and how they work.
- Recognize the indications and contraindications of insulin pumps.
- Demonstrate the necessary skills to initiate, operate, and install the available types of insulin pumps and the preparation for transition from insulin MDI to the insulin pump and what to expect.
- Identify the complications of insulin pumps.
- Interpret insulin pump reports.
- Demonstrate CGM insertion and monitoring.
- Interpretation of AGP report.
- Formulate an appropriate management and follow-up plan for each patient.

The objectives of the ophthalmology workshop are as follows:

- Recognize the extant knowledge on the acute and chronic complications of diabetic eye disease.
- Perform and interpret visual acuity testing.
- Demonstrate ability in how to use an indirect ophthalmoscope.
- Demonstrate ability in how to conduct a direct funduscopy examination.
- Interpret retinal photographs.



- Dispense advice on driving vehicles.
- Formulate an appropriate management and follow-up plan for each patient.

The objectives of the podiatry workshop are as follows:

- Demonstrate the necessary foot care skills.
- Demonstrate the necessary skills for preventive foot care measures for patients with diabetes.
- Demonstrate the necessary skills for the simple debridement of foot ulcers/gangrene, calluses, and in-grown nail removal
- Describe the extant knowledge on the different types of diabetic foot dressing.
- Recognize acute diabetic related foot conditions such as gas gangrene, acute Charcot joint, acute ischemic leg, acute foot ulcers, and osteomyelitis.
- Identify chronic diabetic related foot conditions such as bacterial gangrene, chronic Charcot joint, chronic ischemic leg, and chronic foot ulcers.
- Describe the role of different radiologic imaging techniques used in diagnosing osteomyelitis and Charcot foot.
- Formulate an appropriate management and follow-up plan for each patient.

The objectives of the nutrition workshop are as follows:

- Recognize the extant knowledge on all type of diets including the low fat and low carbohydrate diet.
- Recognize the extant knowledge on diets for pregnant women with diabetes.
- Demonstrate the ability to conduct carbohydrate counting
- Demonstrate the ability to determine the glycemic indices of different foodstuffs.

- Estimate a patient's caloric needs.
- Formulate an appropriate management and follow-up plan for each patient.

3.1. Rotational (practice-based) components of the curriculum

Training exposures during bedside, laboratory, radiology, and other work-related activities represent excellent targets for learning. Trainees are expected to build their capacity based on the model of self-directed learning. On the other hand, practice-based learning allows the educator to supervise trainees to become competent in the program's required practical skills, thereby ensuring the fulfilment of all knowledge, psychomotor, and/or attitude learning domains. Each trainee needs to maintain a minimum number of DOPs that are observed, performed under supervision, and independently performed. It would be prudent to determine the minimum number of procedures to be performed before training completion and the minimum number needed to maintain competency after certification.

3.1.1. Daily round-based learning

The daily round is a good opportunity to conduct bedside training for small groups of fellows (usually those involved in caring for patients).

The objectives are as follows:

- Document historical and physical examination findings, including complete written databases; problem lists; and focused subjective, objective, assessment, and plan notes as per the accepted formats.
- Generate differential diagnoses appropriate to the level of training.
- Review admission notes, discharge summaries, and medical reports.
- Develop evidence-based management plans.
- Interpret lab investigation results (e.g., imaging and blood tests).
- Consult with the professionals of other disciplines.
- Communicate risk factors and prevention with patients and their families.



- Write discharge and follow-up plans.

3.1.2. On-call duty-based learning

All fellows are required to undertake a minimum of 5–7 on-call duty shifts per month, each lasting 24 hours.

Fellow (F1)

- Elicit a comprehensive history and perform a complete physical examination on admission, record the patient's assessment and a differential diagnosis of medical problems clearly, and initiate a management plan.
- Discuss the management plan, including investigations and the treatment plan, with seniors.
- Communicate the plan to the nurse assigned to the patient's care.
- Perform the basic procedures necessary for diagnosis and management.

Fellow (F2)

- Supervise residents' and fellows' admission notes and orders and discuss/supervise the implementation of proposed management plans.
- Supervise junior residents and fellows' skills in taking history and conducting physical examinations.
 - Assist junior residents and fellows in interpreting laboratory investigations and performing bedside diagnostic and therapeutic procedures.
 - Attend to consultations, including those involving emergencies, within and outside the department and participate in outpatient clinics once or twice per week.

3.1.3 CBL

Fellow (F1): Minimum 5 clinics per week and maximum 7 clinics per week including longitudinal diabetes clinics.

Fellows are strictly prohibited from covering outpatient clinics without supervision.

Objectives:

- Elicit a focused history and perform a physical examination.
- Present clinical findings, in brief, to the attending consultant or senior staff.
- Discuss differential diagnoses and management plans with attending consultants.
- Record patients' assessments, differential diagnoses, and management plans.
- Develop communication skills with the attending consultant.

Fellow (F2): Minimum 5 clinics per week and maximum 7 clinics per week including longitudinal diabetes clinics.

Objectives:

- Fellows are strictly prohibited from covering outpatient clinics without supervision.
- Senior fellows conduct patient follow-ups under the supervision of the attending consultant for a prolonged period.
- Supervise junior residents' and fellows' notes and orders.
- Record concise notes for in-patients at least three times a week while on call.
- Discuss management plans, including investigations, treatments, and referral to other disciplines, with the consultant.
- Discuss the need for specialized procedures with the consultant.
- Elicit clinical signs for junior fellows/residents.
- Interpret and discuss laboratory results with junior fellows.
- Assess the performance of junior fellows in terms of communication skills, focused history taking, and physical examination.

Fellows' longitudinal diabetes clinics

- Each fellow in the training program should have one longitudinal diabetes clinic per week for the whole training period.



- The fellow should attend the clinic even if they are rotating in a different department.
- The training center should provide the necessary regulations for fellows to conduct the clinic.
- The program director of the center or an assigned consultant should be the reference for the fellow in case they need assistance or advice; they should monitor the performance of the fellow.
- The program director/assigned consultant should provide an annual report on the performance of the fellow to the regional training committee.

The objectives of doing this clinic are as follows:

- Encourage fellows to assess and manage diabetes patients independently.
- Demonstrate communication skills with patients and colleagues.
- Demonstrate appropriate liaison with other services.
- Advise patients on their self-management plan.

3.1.4 SDL

Characteristics:

- Achieving personal learning goals beyond those of the essential core curriculum.
- Maintenance of a personal portfolio (self-assessment, reflective learning, and a personal development plan).
- Auditing and researching projects.
- Reading journals.
- Attendance at training programs organized on a regional level (e.g., symposia, conferences, and board reviews).
- Undertaking universal topics.
- Each fellow should attend one SDL session per week.

The SCFHS intends to deliver an e-learning platform to provide high-value interdisciplinary topics of the utmost importance for trainees to ensure that all receive high-quality teaching and develop essential core knowledge. These topics are common to all specialties and are delivered in a modular fashion. At the end of each unit, there is an online formative assessment. Upon completion of all topics, trainees undergo a combined summative assessment in the form of context-rich multiple-choice questions (MCQ) in which they should attain minimum competency.

The following are mandatory modules to be completed at each level:

- F1: Module 1, Module 2, and Module 3
- F2: Module 4, Module 5, Module 6, and Module 7
- The trainee does not need to repeat any of these modules if it was done previously during the residency program, except for Module 3, which must be repeated during the fellowship.

2. Universal topics:

Intent

These are high-value interdisciplinary topics of the utmost importance to the trainee. The reason for delivering the topics centrally is to ensure that every trainee receives high-quality teaching and develops essential core knowledge. These topics are common to all specialties.

Topics included here meet one or more of the following criteria:

- Impactful: topics that are common or life-threatening.
- Inter-disciplinary: topics that are difficult to teach through a single discipline.
- Orphan: topics that are poorly represented in the undergraduate curriculum.
- Practical: topics that trainees will encounter in hospital practice.



Development and delivery

- Core topics for the PG curriculum will be developed and delivered centrally by the Commission through the e-learning platform. A set of preliminary learning outcomes for each topic will be developed. Content experts, in collaboration with the central team, may modify the learning outcomes.
- These topics will be didactic in nature with a focus on the practical aspects of care. These topics will be more content-heavy compared to workshops and other face-to-face interactive sessions.
- The suggested duration of each topic is 90 min.

Assessment

- The topics will be delivered in a modular fashion. At the end of each learning unit, there will be an online formative assessment. After the completion of all topics, there will be a combined summative assessment in the form of a context-rich MCQ. All trainees must attain minimum competency in the summative assessment. Alternatively, these topics can be assessed in a summative manner along with a specialty examination.
- These may include case studies, high-quality images, worked examples of prescribing drugs in disease states, and internet resources.
- The trainee does not need to repeat any of these modules if it was done previously during the residency program, except for Module 3, which must be repeated during the fellowship.

Module 1: Medical Fundamentals (Introduction)

1. Blood Transfusion
2. Hospital-acquired Infections
3. Antibiotic Stewardship
4. Sepsis; SIRS; DIVC
5. Safe Drug Prescriptions

Module 2: Cancer

6. Introduction
7. Colon Cancer
8. Breast Cancer
9. Lung Cancer
10. Prostate Cancer

Module 3: Diabetes and Metabolic Disorders

11. Introduction
12. Diabetic Emergencies
13. Management of Diabetic Complications
14. Obesity
15. Cardiovascular Risk

Module 4: Medical and Surgical Emergencies

16. Introduction
17. Acute Chest Pain
18. Acute Breathlessness
19. Altered Sensorium
20. Hypotension
21. Hypertension
22. Upper GI Bleeding
23. Lower GI Bleeding

Module 5: Acute Care

24. Pre-Operative Assessment
25. Post-Operative Care
26. Acute and Chronic Pain Management
27. Fluid Management in the Hospitalized Patient
28. Management of Electrolyte Imbalances



Module 6: Frail Elderly

29. Introduction

30. Second Consultation

31. Third Consultation

32. Hospital Consultation

33. Final Consultation

Module 7: Ethic and Healthcare

34. Introduction

35. Occupational Hazards of Healthcare Workers

36. Evidence-based Approach to Smoking Cessation

37. Patient Advocacy

38. Organ Transplantation

39. Autonomy and Treatment Refusal

40. Death and Dying

41. Ethics and Healthcare: References

42. Ethics and Healthcare Assessment

3. General Learning Opportunities:

General learning opportunities arise from several teaching activities, which include the following:

General didactic-centralized components of the curriculum:

- Daily morning meetings.
- Morning report.
- Morbidity and mortality conferences.
- Grand rounds/guest speaker lectures.
- Case presentation.
- Journal clubs, critical appraisal, and evidence-based medicine.
- Joint specialty meetings (radiology, pathology, and surgery).

3.1. Daily morning meetings:

3.1.1. Morning report

The morning report is a universal component of the diabetes fellowship program. Although there is wide variation in terms of format, attendance, and timing, all fellows share the common goal of case presentation for the purposes of educating the resident physicians, monitoring patient care, and reviewing management decisions and their outcomes. The weekly morning report is conducted from Sunday to Thursday mornings and lasts for 45–60 min. The team that has been on call the previous night briefly presents and discusses all the admitted patients with the audience, with an emphasis on history, clinical findings, differential diagnoses, acute management, and future plans. The morning report moderator decides the format or theme of the meeting. The meeting should include short cases, long cases, data interpretation, and a topic presentation lasting a total 5 minutes.

The objectives of the morning meetings are as follows:

- To discuss patient care and review management decisions and their outcomes.
- Develop competence in the short presentation of details regarding all admitted patients in a scientific and informative fashion.
- Develop confidence in presenting long cases in a systematic fashion.
- Develop appropriate differential diagnoses and suitable management plans.
- Practice a topic presentation of the disease of interest lasting 5 minutes.

3.1.2. Morbidity and mortality conferences

These conferences are conducted at least once every 4–8 weeks. The program director and department chairperson assign the task to a group of trainees who prepare and present the cases to all department members. The proceedings are generally kept confidential by law.



The objectives of the mortality and morbidity conferences are as follows:

- Explain the goal of improving patient care and identify areas of improvement for clinicians involved in case management.
- Prevent errors that lead to complications.
- Modify behavior and judgment based on previous experiences.
- Identify system issues, such as outdated policies and changes in patient identification procedures, that may affect patient care.

3.1.3. Grand rounds/guest speaker lectures

These events are presented by experienced senior staff members on a weekly or monthly basis. The topics will be selected from the core curriculum knowledge base.

The objectives of the grand rounds are as follows:

- Identify the requisite medical knowledge and skills and ultimately improve patient care.
- Apply current practice guidelines in the field of diabetes.
- Describe the latest advances and research in the field of diabetes.
- Identify areas of controversy in the field of diabetes.

3.1.4. Case presentation

This is conducted weekly by an assigned fellow under the supervision of a consultant. The cases presented are those that involve interesting findings, unusual presentations, and difficult diagnoses or management.

The objectives of case presentation are as follows:

- Present a comprehensive history and physical examination with details pertinent to the patient's problem.
- Formulate a list of all the problems identified in the patient's history and physical examination.
- Develop an appropriate differential diagnosis for each problem.
- Formulate a diagnosis and treatment plan for each problem.

- Present a follow-up patient's case in a focused, problem-based manner that includes pertinent new findings and diagnostic and treatment plans.
 - Demonstrate a commitment to improving case presentation skills by regularly seeking feedback regarding presentations.
- Record and present data accurately and objectively.

3.1.5. Journal clubs, critical appraisal, and evidence-based medicine

The journal club meeting is conducted at least once every 4 weeks. The fellow or program director chooses a new article from a reputed journal and forwards it to one of the fellows at least 1–2 weeks before the scheduled meeting.

The objectives of the journal club are as follows:

- Promote continued professional development.
- Recognize advances in the extant literature.
- Disseminate information and construct a debate on good practice.
- Apply evidence-based practice.
- Practice critical appraisal skills.
- Provide an enjoyable and educational social occasion.

3.1.6. Joint specialty meetings (radiology, pathology, and surgery)

Meetings involving radiologists, pathologists, and surgeons are conducted once per week/month (based on the institution, but at least once per month).

The objectives of the joint specialty meeting are as follows:

- Interpret and correlate pathological changes with clinical findings and laboratory data for procedures such as radiological imaging by utilizing the requisite knowledge, technical skills, and experience.
- Exhibit effective communication and sharing expertise with peers and colleagues.
- Develop effective investigative skills to improve the understanding of pathological processes as they apply to both individual patients and the general patient population.



- Attain knowledge and experience under laboratory direction and management and take a leadership role in the education of other physicians and allied health professionals.



IX. ASSESSMENT AND EVALUATION

1. Purpose of assessment

Assessment plays a vital role in the success of postgraduate training. Assessment will guide both trainees and trainers to achieve defined standards, learning outcomes, and competencies. On the other hand, assessment provides feedback to learners and faculty regarding curriculum development and implementation, teaching methods, and the overall quality of the learning environment. Reliable and valid assessment is essential for assessing curriculum alignment in respect to its objectives, learning methods, and assessment tools. Finally, assessment assures both patients and the public that the health professionals are competent and qualified to practice.

Assessment can serve the following purposes:

- A. **Assessment for learning:** Trainers will use the trainees' performances to inform their learning improvement plans. Assessment enables educators to use the information on trainees' knowledge, understanding, and skills to provide feedback on how to improve.
- B. **Assessment as learning** involves trainees in the learning process to enable them to monitor their own progress. Trainees use self-assessment and educators' feedback to reflect on their progress, thereby developing and supporting their metacognitive skills. Assessment as learning is crucial in helping residents/fellows become lifelong learners.



- C. **Assessment of learning** is used to demonstrate the achievement of learning. It is a graded assessment and usually counts towards the trainees' end-of-training degree.
- D. **Feedback and evaluation** as assessment outcomes will represent quality metrics that can improve the learning experience.

Miller's Pyramid of Assessment provides a framework for assessing the trainees' clinical competencies, which acts as a guide for the trainers to select the assessment methods to target different clinical competencies, including "knows," "knows how," "shows how," and "does" (Appendix 2).

For the sake of organization, assessment will be further classified into two main categories: *Formative* and *Summative*.

2. Formative assessment:

2.1 General Principles

As adult learners, trainees should strive to seek and develop their performance based on the feedback they receive throughout their journey from "novice" to "mastery" levels. Formative assessment is a component of the assessment process that is distributed throughout the academic year, aiming primarily to provide trainees with effective feedback.

Every 2 weeks, at least 1 hour should be assigned for trainees to meet with their mentors in order to review their performance reports (e.g., ITER, e-portfolio, mini-CEX, etc.). Input from the overall formative assessment tools will be utilized at the end of the year to determine whether individual trainees are to be promoted from their current to a subsequent training level. Formative assessment will be defined based on the scientific (council/committee) recommendations, usually updated and announced for each individual program at the start of the academic year.

According to the executive policy (available online: www.scfhs.org), formative assessment will have the following features, based on Miller's Pyramid (Appendix 2):

- a. **Multisource:** A minimum of four tools.
- b. **Comprehensive:** Covering all learning domains (knowledge, skills, and attitude).
- c. **Relevant:** Focusing on workplace-based observations.
- d. **Competency milestone-oriented:** Reflecting trainee's expected competencies that match their developmental level.

Trainees should play an active role in seeking feedback during their training and trainers are expected to provide timely formative assessments. The SCFHS will provide an e-portfolio system to enhance communication and analysis of data from formative assessment. Trainers and trainees are expected to follow the recommendations of the scientific council regarding the updated forms, frequency, distribution, and deadlines related to the implementation of evaluation forms.

2.2 Formative assessment tools:

2.2.1. Promotion written exam:

The end-of-year examination will be limited to F1 Fellows. The number of examination items, eligibility, and passing scores are established in accordance with the Commission's training and examination rules and regulations.

Blueprint outlines: The content of the following table is for demonstration only; please refer to the most updated version published on the SCFHS website.

- A blueprint of the promotion exam is shown in the following table:

Examination blueprint for promotion examination:

No.	Sections	Proportions	Medical science	Diagnosis	Management	Investigations
1.	Type 1 DM	16%	4	4	4	4
2.	Type 2 DM	34%	6	10	10	8
3.	Gestational DM	9%	2	2	3	2
4.	Diabetes in special populations	8%		2	3	3
5	Nutrition/ DM education	8%	2		6	
6.	Advanced diabetes technology (including: CGM and insulin pump therapy)	5%	0	1	3	1
7.	In-hospital management of diabetes	10%	0	2	6	2
8.	Research, ethics and professionalism, and patient safety	10%				
	Total	100%				

2.2.2. Structured oral exam (SOE):

This refers to an annual training progress test performed by the training center for all F1 fellows with a minimum of 4 stations. Collaboration between multiple training centers can be done.

2.2.3 Academic activities:

Records of educational training evaluation of a minimum of 6 and a maximum of 8 presentations per year should be maintained (Appendix 3), which may include any of the following:

1. Scientific topics in AHD.
2. Journal clubs.

3. Research activity.
4. Morning report.
5. Case presentations.
 - Further descriptions are detailed in Teaching and Learning Activities section
 - The program director has the authority to assign each fellow of any of the academic assignments mentioned above, according to the fellow's needs and requirements.

2.2.4. Portfolio:

Description:

This component of formative assessment evaluates fellows' performance in a wide array of clinical and non-clinical skills through the academic year. The portfolio can be defined as a collection of evidence of fellows' activities that outlines fellows' own learning experience. The portfolio can be electronic-based or paper-based according to the preferences of the individual program or academic affairs. The portfolio contains a component of self-reflection on the contents, which is key for professional development. Portfolios are used as a tool to increase fellows' self-awareness and their ability to learn independently and to encourage them to reflect on their own performance. It is composed of four items:

- A- Mini-Clinical Evaluation Exercise (Mini-CEX).
- B- Direct Observation of Procedural Skills (DOPS).
- C- Research.
- D- Community Activity.

Portfolio items:

A- Mini-Clinical Evaluation Exercise (Mini-CEX): (Appendix 4)

Mini-CEX is a universal tool used to assess fellows' performances in patient encounters. To ensure the successful application of the tool, the following rules must be implemented in the program:



- It is applicable for all general diabetes rotations and should be used in different domains of diabetes.
- The evaluation session must be arranged in advance.
- It should be conducted as a direct observations model.
- The trainer must provide instant verbal feedback after the session is completed and written feedback in a 1-week period.
- The program should maintain a minimum of 4 Mini-CEX evaluations for every fellow per year with a minimum satisfaction level. However, the PTC can arrange more frequent evaluations for all fellows or an individual fellow, as required.
- To complete the process, the fellow should evaluate the assessment session and reflect on its findings.

Score: 100 %

Interpretation:

Clear fail	Borderline fail	Borderline pass	Clear pass
<50 %	50–59.4%	60–69.4%	>70%

B- Direct Observation of Procedural Skills (DOPS): (Appendix 5)

DOPS is a universal tool used to assess fellows' performances in the required essential and advanced clinical skills. The tool can be applied for assessing fellows' skills in real or simulated situations involving insulin pumps and continuous glucose monitoring (CGMs). To ensure the successful application of the tool, the following rules must be implemented in the program:

- The evaluation session must be arranged in advance if applicable.
- It should be conducted as a direct observation model.
- The trainer must provide instant verbal feedback after the session is completed and written feedback in a 1-week period.
- The program should maintain a minimum of 2 DOPS evaluations for every fellow every year with a minimum satisfaction level.

Score: 100 %

Interpretation:

Clear fail	Borderline fail	Borderline pass	Clear pass
<50 %	50–59.4%	60–69.4%	>70%

C- Research: (Appendix 6)

- All fellows are required to conduct at least 1 research project during training.

F1: Research proposal with an IRB approval

- All F1 fellows are required to submit a research proposal with IRB approval.

Score: 100 %

Interpretation:

- Clear fail: Not completed.
- Borderline failure: Incomplete proposal.
- Borderline pass: Completed and approved by the program training or research committee.
- Clear pass: Approval completed by IRB.

Clear fail	Borderline fail	Borderline pass	Clear pass
<50 %	50–59.4%	60–69.4%	>70%

F2: Complete research manuscript:

- All F2 fellows are required to complete the analysis and writing of the final research manuscript. Fellows are highly encouraged to publish the research manuscript.

Score: 100 %

Interpretation:

Clear failure: Not completed.



- Borderline failure: Incomplete manuscript.
- Borderline pass: Completed manuscript approved by the program training or research committee.
- Clear pass: Published in one of the following journals:
 - ❖ PubMed indexed
 - ❖ Thomson Reuters indexed
 - ❖ Affiliated Saudi Journal

Clear fail	Borderline fail	Borderline pass	Clear pass
<50 %	50–59.4%	60–69.4%	>70%

D- Community Activities: (Appendix 7)

These include activities aimed toward improving community healthcare such as quality assurance projects and health volunteering during health promotion community activities or medical crises.

Suggested volunteer activities:

1. An awareness event related to diabetes diseases (e.g., World Diabetes Day), held either by local hospitals or organizations.
2. Being an active member in the scientific or organizing committees of any conferences related to Diabetes.
3. Writing an article to increase public awareness of diabetes in a newspaper, magazine, or website.
4. Research (published paper or accepted for publishing) as either a research paper or a poster presentation. The fellow can be either a primary or co-author.
5. Charity diabetes clinics (at least 2 sessions).
6. Participation in a Hajj mission.
7. Giving a public lecture about diabetes (at least once).

8. Participating in a quality assurance project, a health promotion event, or as health volunteer.

Score: 100 %

Interpretation:

Clear fail	Borderline fail	Borderline pass	Clear pass
<50 %	50–59.4%	60–69.4%	>70%

The scoring system for the portfolio:

- It is the average of all 4 portfolio items.

Clear fail	Borderline fail	Borderline pass	Clear pass
<50 %	50–59.4%	60–69.4%	>70%

2.2.5. In-Training Evaluation Report (ITER): (Appendix 8)

- This is a continuous evaluation performed at the end of each rotation. It aims to assess the trainee's core competency achievements as a medical expert, professional, communicator, collaborator, scholar, health advocate, or leader.

Scoring system and promotion decision:

- The performance of the fellow will be evaluated according to the rules for assessment set forth by the SCFHS. Each evaluation item is evaluated according to the following:

Clear fail	Borderline fail	Borderline pass	Clear pass
<50 %	50–59.4%	60–69.4%	>70%

A fellow will be eligible for promotion from one training level to the next if they have attained a minimum of a borderline pass in all continuous assessment tools. In case the trainee has attained borderline failure in one evaluation, they can still be considered for promotion as long as the



remaining assessment tools are fulfilled with a minimum clear pass in at least one assessment tool, provided the promotion decision has been supported by the SCFHS Scientific Committee. Please refer to the executive policy for continuous assessment and annual promotion available at www.scfhs.org.

Summary of formative assessment during the 2-year diabetes fellowship program:

Learning domain	Formative assessment tools	Details
Knowledge	<ul style="list-style-type: none"> ▪ Structured oral exam (SOE) ▪ Promotion written exam ▪ Academic activities 	<ol style="list-style-type: none"> 1. At the end of training level F1 2. At the end of training level F1 3. Minimum of six and maximum of eight presentations per year at level F1 and F2
Skills	Portfolio: <ul style="list-style-type: none"> ▪ Mini-CEX ▪ DOPS ▪ Community activity ▪ Research 	At the F1 and F2 levels <ol style="list-style-type: none"> 1. 4 Mini-CEX per year 2. 2 DOPS per year 3. 1 community activity per year 4. Research proposal with IRB approval by the end of F1, complete research manuscript in F2
Attitude	ITER: In-Training Evaluation Report	At the end of each rotation at the F1 and F2 levels

3. Summative Assessment:

3.1 General principles

Summative assessment is a component of the assessment that primarily aims to make informed decisions on trainees' competency levels. In comparison to the formative one, *summative* assessment does not aim to provide constructive feedback. For further details on this section, please refer to the General Bylaws of Training in Postgraduate Programs and

General Assessment Bylaws (available online: www.scfhs.org). In order to be eligible to sit for the final exams, trainees will be granted a “Certification of Training Completion” upon the successful completion of all the training rotations.

3.2 Final In-training Evaluation Report (FITER): (Appendix 9)

The FITER is a summative evaluation prepared at the end of the fellowship training program; it grants the candidate with a full range of competencies (knowledge, skills, and attitudes) required for a specialist and readiness to sit the Saudi certification examinations. The FITER is not a composite of the regular in-training evaluations; rather, it is a testimony of the evaluation of competencies at the end of a training program. The FITER will be completed as late as possible in fellows’ training but no later than 2 months before the final exam. The FITER of individual candidates is available only to the Chair of the Examination Committee, who must maintain confidentiality regarding the name of the candidate, the training center, and the Program Director at all times

3.3 Certification of training completion:

To be eligible to apply for final specialty examinations, each trainee is required to obtain a “Certification of Training Completion.” It will be granted once the following criteria are fulfilled:

- A- Successful completion of all training rotations.
- B- Completion of training requirements as outlined by the scientific committee of specialty (e.g., academic activities, complete portfolio, clinical observation (ITERS: In-training Evaluation Report from the faculty), Diabetes Final in Training Evaluation Report (FITER), and other evaluations).



3.4. Summative Assessment tools:

Final examinations:

Eligibility for the final exam:

The successful completion of all training requirements, according to the SCFHS policies and rules for eligibility for the final examination:

A- Final written examination: This examination assesses the theoretical knowledge base (including recent advances in the field) and the problem-solving capabilities of candidates in the specialty of Diabetes. It is delivered in an MCQ format and is held once a year. The number of exam items, eligibility, and passing scores are determined in accordance with the commission's training and examination rules and regulations. Examination details and blueprints are published on the commission website: www.scfhs.org.sa.

B- Final clinical examination: The trainee needs to pass a written exam to be eligible for the clinical exam. This examination assesses a broad range of high-level clinical skills, including data gathering, patient management, and communication and counseling skills. The clinical examination will be in the form of a multi-station OSCE and/or structured oral examination.

- Blueprint outlines: The content of the following table is for demonstration only; please refer to the most updated version published on the SCFHS website.
- The blueprint of the final written and clinical/practical exams are shown in the following table:

Examination blueprint for the final written examination:

No.	Sections	Proportions	Medical science	Diagnosis	Management	Investigations
1.	Pre-diabetes	5%	0	1	3	1
2.	Type 1 DM	18%	2	2	10	4
3.	Type 2 DM	27%	3	3	16	5
4.	Gestational DM	6%	0	1	4	1

No.	Sections	Proportions	Medical science	Diagnosis	Management	Investigations
5.	Diabetes in special populations	8%	0	2	5	1
6.	Other endocrine disorders related to diabetes	8%	0	2	4	2
7.	Dyslipidaemia	5%	1	1	2	1
8.	Hypertension	5%	0	1	3	1
9.	In-hospital management of diabetes	10%	0	1	8	1
10.	Advanced diabetes technology (including: CGM and insulin pump therapy)	8%		1	6	1
	Total	100%				

Examination Blueprint for the Final Clinical Examination:

		DIMENSIONS OF CARE				
		Health promotion & illness prevention	Acute	Chronic	psychological Aspects	# Station (s)
DOMAINS FOR INTEGRATED CLINICAL ENCOUNTER	Patient care	1	2	4		7
	Patient safety & procedural Skills		1			1
	Communication & interpersonal Skills			1	1	2
	Professional behaviors					0
	Total stations	1	3	5	1	10



For further details on the final exams, please refer to the General Bylaws of Training in the Postgraduate Programs and General Assessment Bylaws (available online: www.scfhs.org.sa).

Summary of summative assessments during the 2-years diabetes fellowship program

Learning domain	Summative assessment tools	Important details
Knowledge	Final written examination	At the end of training level F2
Skills	Final clinical exam	At the end of training level F2
Attitude	FITER: In-Training Evaluation Report	At the end of training level F2

Appeal request:

- The fellow has the option to submit an appeal request and formal review (please refer to the formal review of SCFHS examination in www.scfhs.org.sa).

Certification:

- Candidates who pass the final written and clinical examinations are awarded the “Saudi Diabetes Fellowship” certificate as per the training bylaws and executive policy.

X. PROGRAM AND COURSE EVALUATION

The SCFHS will apply variable measures to evaluate the implementation of this curriculum. The training outcomes of this program will undergo the quality assurance framework endorsed by the Central Training Committee at the SCFHS. Trainee assessment (both formative and summative) results will be analyzed and mapped to the curriculum content. Other indicators that will be incorporated are:

- Report of the annual trainees' satisfaction survey.
- Reports from trainees' evaluation of faculty members.
- Reports from trainees' evaluation of rotations. (Appendix 10)
- Reports from the annual survey of program directors.
- Data available from program accreditations.
- Reports from direct field communications with trainees and trainers.

Goal-Based Evaluation: The achievement of the intended milestones will be evaluated at the end of each stage to assess the progress of the curriculum delivery; any deficiencies will be addressed in the following stage, utilizing the time devoted for trainee-selected topics and professional session.

In addition to subject-matter opinion—best practices from benchmarked international programs—the SCFHS will apply a robust method to ensure that this curriculum will utilize all the data that will be available during the time of revising the curriculum in the future.



XI. POLICIES AND PROCEDURES

This curriculum represents the means, materials, and outlines of the learning objectives with which trainees and trainers will interact for the purpose of achieving the identified educational outcomes. The SCFHS has a full set of “General Bylaws of Training in Postgraduate Programs” and “Executive Policies” (published on the official SCFHS website) that regulate all training-related processes. The general bylaws of training, assessment, and accreditation as well as executive policies on admission, registration, formative assessment and promotion, examination, trainees’ representation and support, and duty hours and leave are examples of regulations that need to be implemented. Under this curriculum, trainees, trainers, and supervisors must comply with the most-updated bylaws and policies, which can be accessed online via the official SCFHS website.

XII. APPENDICES

- Appendix 1: Suggested Learning Resources
- Appendix 2: Miller's Pyramid
- Appendix 3: Presentation Evaluation Form
- Appendix 4: Mini-Clinical Evaluation Exercise (Mini-CEX)
- Appendix 5: Direct Observation of Procedural Skills
- Appendix 6: Research Evaluation
- Appendix 7: Community Activities Performance Evaluation
- Appendix 8: In-training Evaluation Report (ITER)
- Appendix 9: Final In-training Evaluation Report (FITER)
- Appendix 10: Rotation Evaluation (BY THE TRAINEE)
- Appendix 11: References

Appendix 1

Suggested learning resources

Fellows are requested to use the major textbooks and electronic resources suggested by the faculty.

These include:

- Endocrinology textbooks (Williams or Becker).
- Up-to-date practice guidelines of the American Diabetes Association (<http://www.diabetes.org>).
- American Association of Clinical Endocrinologists (<http://www.AACE.com>).
- The Endocrine Society (<http://www.endo-society.org>).
- The European Association for the Study of Diabetes



(<http://www.EASD.com>).

- Diabetes Canada Clinical Practice Guidelines (<http://guidelines.diabetes.ca/cpg>).
- *Pumping Insulin: Everything You Need for Success with an Insulin Pump* by John Walsh and Ruth Roberts.
- *Professionalism and Ethics Handbook for Residents (PEHR): A Practical Guide*. Citation: (Hussein GM, Alkabba AF, Kasule OH. *Professionalism and Ethics Handbook for Residents (PEHR): A Practical Guide*. Ware J, Kattan T (eds). 1st Edition. Riyadh, Saudi Arabia: Saudi Commission for Health Specialties, 2015.

Fellows are encouraged to read the following on a monthly basis:

- *The Journal of Clinical Endocrinology and Metabolism*
- *Endocrine Reviews*
- *Diabetes*
- *Diabetes Care*
- *Diabetes Reviews*
- *The Journal of Clinical Investigation*
- *The Lancet Diabetes & Endocrinology*
- *The Cochrane Database of Systematic Reviews*
- *New England Journal of Medicine*
- As well as others depending on their specific interests

Universal online topics:

- Macleod's Clinical Examination
- Hutchison's Clinical Methods
- Bates' Clinical Examination

<http://stanfordmedicine25.stanford.edu/index.html>

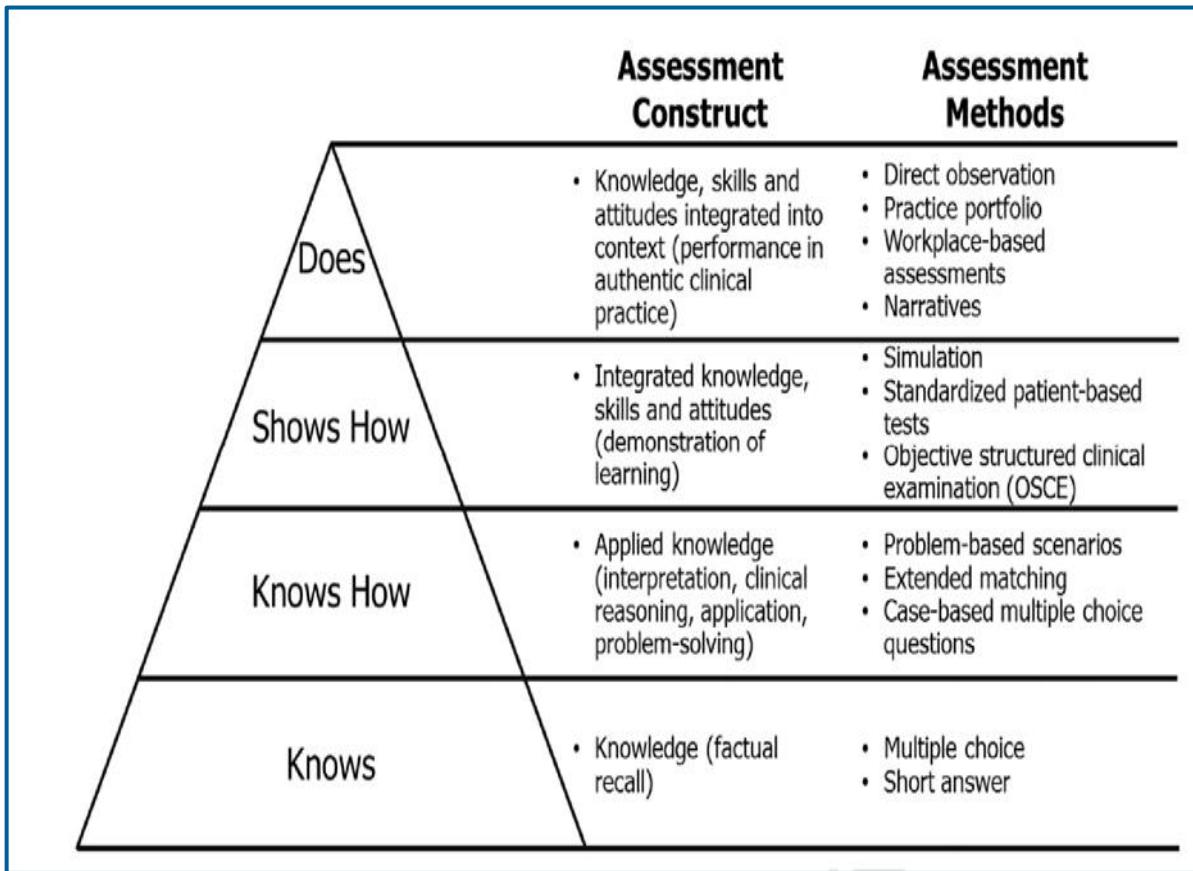
Fellows are encouraged to attend at least one per year of the following meetings/seminars/symposia/conference/workshops and provides a certificate of attendance to the program director:

- Saudi Society of Endocrinology and Metabolism (SSEM)
- Saudi Scientific Diabetes society (SSDS)
- Saudi Osteoporosis Society (SOS)
- Saudi Arabia Society of Metabolic and Bariatric Surgery (SASMBS)
- World Diabetes Day
- American Association of Clinical Endocrinologist (AACE)
- Endocrine Society (US-ES)
- American Diabetes Association (ADA)
- European Association of Diabetes Study (EASD)
- International Diabetes Federation Meeting
- International DSD Meeting
- Diabetes Canada Annual Meeting



Appendix 2

Miller's Pyramid ^(7,8)



Appendix 3

Presentation evaluation form



Saudi Commission for Health
Specialties
*SCFHS - Diabetes

Evaluated By: **evaluator's name**
Evaluating : **person (role) or moment's name (if applicable)**
Dates : **start date to end date**

* indicates a mandatory response

Presentation Evaluation Form

	1 Very weak	2 weak	3 Acceptable	4 Good	5 Very good
*A) Medical Expert :					
1- Demonstrated thorough knowledge of the topic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*2- Presented at an Appropriate level and with Adequate details	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*3 - Comment (Optional)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*B) Communicator :					
4- Provided objectives & outline	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*5- Presentation was clear & Organized	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*6- Used clear , Concise , and legible materials	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*7- used an effective method/style of presentation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*8- Established good rapport with the audience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*C) Collaborator :					
9- Invited Comments from learners & lead discussion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*10- Work effectively with staff supervisor in preparing the session	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*11- Comments (Optional)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*D) Health Advocate :					
12 - Managed time Effectively	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*13- Addressed preventive aspects of care if relevant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*14- Comments (Optional)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*E) Scholar :					
15- Posed an appropriate learning Questions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*16- Accessed & interpreted the relevant literature	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*17- Comment (optional)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*F) Professional :					
18- maintained patients' confidentiality if clinical material is used	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*19- Identified & managed relevant conflict of interest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*20 Comments (Optional)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

additional comments:

The following will be displayed on forms where feedback is enabled...
(for the evaluator to answer...)

*Did you have an opportunity to meet with this resident to discuss their performance?

Yes

No

(for the evaluatee to answer...)

*Are you in agreement with this assessment?

Yes

No

Please enter any comments you have (if any) on this evaluation.



Appendix 4

Mini-Clinical Evaluation Exercise (Mini-CEX)



Saudi Commission for Health Specialties
*SCFHS - Diabetes

Evaluated By: **evaluator's name**
Evaluating : **person (role) or moment's name (if applicable)**
Dates : **start date to end date**

* indicates a mandatory response
*Brief Summary of Case:

	n/a	Below expectations (1)	Borderline (2)	Meets expectations (3)	Above expectation (4)
*1) Medical Interview Skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*2) Physical Examination Skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*3) Counselling and Communications Skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*4) Clinical Judgement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*5) Consideration for Patient/Professionalism	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*6) Organisation/Efficiency	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*7) Overall Clinical Competence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Comments :

*Which aspects of the encounter were done well?

*Suggested areas for improvement / development?

*Agreed Actions / learning plan:

*Student's reflections on patient and areas of learning:

*Assessor's position:

- Consultant
- Associate Consultant
- Senior Registrar
- Registrar
- Fellow

Others (specify):

*Time taken for Observation & Feedback (in minutes):

The following will be displayed on forms where feedback is enabled...
(for the evaluator to answer...)

*Did you have an opportunity to meet with this resident to discuss their performance?

- Yes
- No



(for the evaluatee to answer...)

*Are you in agreement with this assessment?

Yes


No

Please enter any comments you have (if any) on this evaluation.



Appendix 5

Direct Observation of Procedural Skills

 Saudi Commission for Health Specialties *SCFHS - Diabetes	Evaluated By: evaluator's name	
	Evaluating : person (role) or moment's name (if applicable)	
	Dates : start date to end date	

* indicates a mandatory response

Direct Observation Of Procedural Skills – DOPS Assessment

*Procedure:

	n/a	Below expectations 1	Borderline 2	Meets expectations 3	Above expectation 4
*Domain & Comments:					
Professional Approach (to include communication, consent and consideration of the patient.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*Knowledge (indication, anatomy, technique)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*Demonstrate appropriate pre-procedure preparation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*Appropriate analgesia or/and sedation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*Technical Ability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*Aseptic Technique	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*Post Procedure Management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Needs more practice	May need supervision if complications arise	Competent to perform unsupervised
*Overall Ability to perform Procedure:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Comments:

*Assessor's position:

- Consultant
- Associate Consultant
- Senior Registrar
- Registrar
- Fellow
- Senior Resident
- Nurse
- other

Others (specify):

*Complexity of procedure:

- Low
- Average
- High

*Time taken for Feedback & Observation (in minutes):

The following will be displayed on forms where feedback is enabled..

(for the evaluator to answer..)

*Did you have an opportunity to meet with this resident to discuss their performance?

- Yes
- No

(for the evaluatee to answer..)

*Are you in agreement with this assessment?

- Yes
- No

Please enter any comments you have (if any) on this evaluation.

Appendix 6

Research evaluation: F1 and F2

Component of research conduct	Clear fail	Borderline fail	Borderline pass	Clear pass
F1				
Research proposal				
• Original research question				
• Aim and objectives				
• Hypothesis				
• Literature review				
• Methodology				
• References				
IRB Proposal				
F2				
Research manuscript				
• Title page				
• Abstract				
• Introduction/background				
• Methodology				
• Results (data analysis and presentation)				
• Discussion, conclusions, and recommendations				
• Ethical considerations				
• References				
• Style, structure of text, tables, and diagrams				



Component of research conduct	Clear fail	Borderline fail	Borderline pass	Clear pass
Publication				

F1 scoring interpretation:

- Clear failure: Not completed.
- Borderline failure: Incomplete proposal.
- Borderline pass: Completed and approved by training or research committee.
- Clear pass: Approval completed by IRB.

F2 scoring interpretation:

- Clear failure: Not completed.
- Borderline failure: Incomplete manuscript.
- Borderline pass: Completed manuscript approved by training or research committee.
- Clear pass: Published in one of the following journals:
 - PubMed indexed
 - Thomson Reuters indexed
 - Saudi Journals

Process of writing:

- The research paper should be written and edited properly in English with no grammar or spelling mistakes and with an abstract in both Arabic and English (abstract should not exceed 300 Words)
- The cover page should include the following:
 1. Name of the training program on the right side of the page
 2. Title of the research
 3. Name of the researcher
 4. Date of submission
 5. The following statement: "This research was submitted in Partial Fulfillment of the Saudi Diabetes fellowship."
- The second page should contain the name of the supervisor/s.

- The paper should be printed on white A4 paper in black ink and on one side per page.
- The style should be as shown in the Style Table below.
- The last page should contain a short curriculum vitae of the researcher.

Process of writing Style:

Font	Arial
Font size	14
Margins	Once inch on all sides
Font Color	Black
Line Spacing	Double
Indent	Six spaces
Page Numbers	Top right corner
Charts/graphs	Titles and numbered in separate pages



Appendix 7

Community Activities Performance Evaluation

Fellow name: _____	Date: _____			
Activity type:	<input type="checkbox"/> Quality assurance project	<input type="checkbox"/> Health promotion event		
	<input type="checkbox"/> Health volunteer			
	<input type="checkbox"/> Other			
Activity date: _____				
Briefly describe the goals and objectives of the community activity in which this physician is involved:				

Overall performance:				
Clear fail	Borderline fail	Borderline pass	Clear pass	Outstanding
Indicate the strategies used to evaluate the physician's activities: _____				
General comments:				

Evaluator's name _____ Evaluator's signature: _____				

Appendix 8

In-training Evaluation Report (ITER)



Saudi Commission for Health Specialties
*SCFHS - Diabetes

Evaluated By: evaluator's name
Evaluating : person (role) or moment's name (if applicable)
Dates : start date to end date

* indicates a mandatory response

ITER - IN-TRAINING EVALUATION REPORT (M.F.Diabet)

	N/A (0)	Clear Fail (1)	Borderline (2)	Clear Pass (3)	Exceed Expectations (4)
*A. MEDICAL EXPERT:					
History & Physical Examination:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1. Comprehensive, accurate & concise with all relevant details					
*Diagnostic Tests:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Used in a cost-effective manner & understands limitations & predictive value.					
*Clinical Decision:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Able to formulate appropriate differential diagnosis.					
*4. Able to analyze, integrate, and formulate effective management strategies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*Medical Knowledge:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Broad Clinical & Basic knowledge of a wide variety of medical problems and develops a plan of secondary prevention.					
*Emergency Management:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Able to identify and respond appropriately to urgent cases					
*Evidence-based Practice/Critical Appraisal Skills:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Aware of the role of evidence in clinical decision-making.					
*8. Able to apply relevant information in problem-solving.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*9. Demonstrates knowledge of medications used, mechanisms of action, clinically relevant pharmacokinetics, indications, contraindications, and adverse effects.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*Procedural Skills:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Perform diagnostic & therapeutic procedures, understands indications, limitations & complications.					
*B. COMMUNICATOR	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Communicates effectively with patients, their families, and HCPs.					
*12. Able to maintain clear, accurate & appropriate records.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*13. Written orders and progress notes are well organized & legible.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*14. Discharge summaries are concise & completed promptly.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*C. COLLABORATOR:	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Works effectively in a team environment with attending, juniors & nursing staff.					
*D. MANAGER :	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Serves in administration and leadership roles as appropriate.					
*17. Appropriate & efficient use of health care resources.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*E. SCHOLAR :	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. Attends and contributes to rounds, seminars, and other learning events.					
*19. Accepts and acts on constructive feedback.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*20. Contributes to the education of patients, junior residents, house staff, and students.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*21. Contributes in scientific research.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*F. HEALTH ADVOCATE :	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. Able to identify the psychosocial, economic, environmental & biological factors which influence the health of patients and society.					
*23. Offers advocacy on behalf of patients at practice and general population levels.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*G. PROFESSIONAL :	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. Delivers the highest quality of care with integrity & compassion. Recognizes limitations and seeks advice and consultations when necessary.					
*25. Reflects the highest standards of excellence in clinical care and ethical conduct.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Comments (areas of strengths/areas for improvement)

The following will be displayed on forms where feedback is enabled...



(for the evaluator to answer...)

*Did you have an opportunity to meet with this resident to discuss their performance?

- Yes
- No

(for the evaluatee to answer...)

*Are you in agreement with this assessment?

- Yes
- No

Please enter any comments you have (if any) on this evaluation.

Appendix 9

Final In-training Evaluation Report (FITER)

Final In-training Evaluation Report (FITER)

Diabetes Fellowship

Name of the fellow:

SCFHS registration #:

Training center:

Evaluation covering the last year as a fellow (F2)

In the view of the fellowship program committee, this fellow has acquired the competencies of the subspecialty as prescribed in the Objectives of Training and is competent and board/fellowship eligible.

The following sources of information were used for this evaluation (underlines are mandatory):

- Written examination
- Academic activities
- Complete portfolio
- Clinical observation (ITERS: In-training Evaluation Report from the faculty)
- Diabetes Final in Training Evaluation Report (FITER)
- Other evaluations

Program Director Signature Date

Name of the fellow Signature Date

Identification number



Appendix 10

Rotation Evaluation (BY THE TRAINEE)



Saudi Commission for Health
Specialties
*SCFHS - Diabetes

Evaluated By : evaluator's name
Evaluating : person (role) or moment's name (if applicable)
Dates : start date to end date

* indicates a mandatory response

Rotation Evaluation (BY THE TRAINEE)

	Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
*1. I found this rotation to be useful to my training	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*2. The objectives and clinical competencies were clear to me at the beginning of the rotation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*3. I was provided positive and constructive feedback in a timely manner that helped me improve during the rotation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*4. I was treated with respect by the faculty and staff and functioned as part of the healthcare team.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
*5. I was provided the opportunity to demonstrate my knowledge, skills, and attitudes during this rotation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*Any other comments to improve the rotation ?

The following will be displayed on forms where feedback is enabled...
(for the evaluator to answer..)

*Did you have an opportunity to meet with this resident to discuss their performance?

Yes

No

(for the evaluatee to answer..)

*Are you in agreement with this assessment?

Yes

No

Please enter any comments you have (if any) on this evaluation.



Appendix 11

References:

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6. Alfadhli, E. M., Osman, E. N., Basri, T. H., Mansuri, N. S., Youssef, M. H., Assaaedi, S. A., & Aljohani, B. A. (2015). Gestational diabetes among Saudi women: prevalence, risk factors and pregnancy outcomes. *Annals of Saudi Medicine*, 35(3), 222–230. <https://doi.org/10.5144/0256-4947.2015.222>



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