



الهيئة السعودية للتخصصات الصحية
Saudi Commission for Health Specialties

Advanced Laparoscopic and Bariatric Surgery



سَبِّحْ لِلَّهِ عَمَّا يُشْرِكُونَ

PREFACE

Bariatric surgery as a surgical subspecialty is becoming a necessity with the alarming increase in the prevalence of obesity and related problems. This surgical subspecialty has been proven to be the most effective method for long-term remission of morbid obesity and its related comorbidities. Further, surgical disorders of the upper gastrointestinal tract (e.g., hiatus hernias and gastroesophageal reflux disease), regardless of denovo being a primary or secondary condition after bariatric surgery, are increasingly affecting patients and becoming complex problems that necessitate high surgical skills and expertise to address. Minimally invasive surgery training that includes laparoscopic, robotic, and endoscopic procedures with minimal cutting approaches is also developing rapidly since the advent of laparoscopic surgery in the early 1990s. This will not obviate the traditional open surgery training in certain surgical conditions or complicated cases. The Curriculum Development Committee (CDC) believes that trainees must understand in detail the objectives of the training and the nature of the skills and competencies that they will need to embrace during the fellowship. Accordingly, the CDC instructs program directors to provide each trainee enrolled in the “Minimally Invasive Upper Gastrointestinal (GI) and Bariatric Surgery” program with a copy of the curriculum prior to the start of the training. The program director must review the content of the curriculum and ensure that all questions from the trainees are addressed during their meetings. The meeting must be also attended by the chief fellow who will offer a perspective on the fellowship from the viewpoint of the trainees. It is recommended that an overview of the curriculum is presented as a debriefing lecture. The curriculum may contain sections outlining some regulations of training; however, such regulations need to be sought from training’s “General Bylaws” and “Executive Policies” published by the Saudi

Commission for Health Specialties (SCFHS), which can be accessed online at the official website of SCFHS (www.scfhs.org.sa). In case of any discrepancy in regulation statements, the one stated in the most updated bylaws and executive policies will be regarded as applicable.



I. CONTRIBUTORS

This curriculum was prepared by the Specialties' Curriculum Development Committee (CDC):

- Prof. Mohammed Y. Alnaami (Chairman)
- Dr. Abdullah S. Alzahrani (Member)
- Dr. Hussam Adi (Member)
- Dr. Abdullah A. Alzahrani (Member)

Reviewed and Approved by Specialties' Scientific Council (SSC) Members:

- Dr. Saud Al Rashedi
- Prof. Hamad Algahtani
- Dr. Saeed Alghamdi
- Dr. Basem Alshareef
- Dr. Thamer Nouh
- Dr. Samar Alhomood
- Dr. Meshaal Alharthi
- Dr. Wael Tashqandi
- Dr. Abdulelah Hummadi
- Dr. Hessa Albuainen

Curriculum Review Committee Members:

- Dr. Nouf Alrumaihi, MBBS, Msc.MedEd., PMP
- Dr. Mai Alajaji, Msc.MedEd, PhD

Approved by Head of Curricula Review Committee:

- Dr. Ali AlYahya, MBBS, Msc.MedEd. FRCS, FACS

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Correspondence: Saudi Commission for Health Specialties P.O. Box: 94656
Postal Code: 11614

Contact Center: 920019393

E-mail: Curricula@scfhs.org.sa

Website: www.scfhs.org.sa



III. FOREWORD

The “Advanced Laparoscopic and Bariatric Surgery” fellowship curriculum development team acknowledges the valuable contributions and feedback of the Scientific Council members in the development of this program. We extend special appreciation and gratitude to all members who have been pivotal to the completion of this booklet, especially the Curriculum Development Committee, Curriculum Specialists, and the Scientific Council. We would also like to acknowledge that the CanMEDS¹ framework used in this curriculum is the copyright of the Royal College of Physicians and Surgeons of Canada and that many of the description’s competencies have been acquired from their resources.

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V. INTRODUCTION

1. Context of Practice

The prevalence of obesity and its related problems are increasing at an alarming rate in the Kingdom of Saudi Arabia due to a combination of complex factors. These factors include an increase in the availability and consumption of unhealthy foods and sweetened drinks, abnormal eating behaviors, inactive and sedentary lifestyles, retention of weight after multiple pregnancies, endocrine diseases, stress and depression, use of some obesogenic drugs, environmental and cultural habits, and genetic syndromes. Recent reports indicate that almost 33% of Saudi adults (37% of female and 29% of male adults) are obese with a body mass index (BMI) ≥ 30 kg/m². The prevalence rate of obesity in children is increasing at a rapid rate of 10–20%.³

Treatments are available for varying levels of obesity, but demand for treatment in the public sector is quite high: Approximately 50% of those seeking treatment for obesity obtain support via private systems as an out-of-pocket expense. Public bariatric surgery institutes can only accommodate 1–2% of the burden of morbid obesity and its co-morbidities and have very long waiting lists. It is only recently that the cooperative health insurance has started to cover obesity patients with a BMI ≥ 45 kg/m² for up to 20,000 SAR. However, the current system is still struggling to meet the demand of about 30% of the whole population needing bariatric surgery.

Surgery programs will provide expertise in the field of upper gastrointestinal and bariatric surgery, which will be able to manage primary, revisional, and complicated surgeries.



This fellowship program is intended to help fellows become proficient in minimally invasive surgical techniques and attain the skills to perform most upper gastrointestinal and bariatric surgeries.

This program is different from other similar programs, as it focuses on bariatric and foregut surgeries.

2. Goal and Responsibility of Curriculum Implementation

The ultimate goal of this curriculum is to guide fellows to become *competent* in their specialty. This goal will require a significant amount of effort and coordination from all stakeholders involved in postgraduate training. As an *adult-learner*, trainees have to demonstrate full engagement with a *proactive* role by carefully understanding learning objectives, engaging in self-directed learning, solving problems, and exhibiting openness and readiness to apply what they have learned through reflective practice based on feedback and formative assessment while maintaining self-wellbeing and seeking support when needed. The program director has a vital role in making the implementation of this curriculum most successful. Training committee members and, in particular, the program administrator and the chief resident, have a significant impact on the program implementation. Trainees should be allowed to share responsibility in curriculum implementation. The Saudi Commission for Health Specialties (SCFHS) will adopt the best models of training governance to provide the best quality training. Academic affairs in training centers and the regional supervisory training committee will have a major role in training supervision and implementation. The SCFHS' Curriculum Development Council (CDC) will be responsible for ensuring that the content of this curriculum is constantly updated so that it matches the best-known standards in postgraduate education for each specialty.

VI. ABBREVIATIONS USED IN THIS DOCUMENT

Abbreviation	Description
CBD	Case-based Discussion Report
CBE	Competency-based Education
CDC	Curriculum Development Committee
F1	(Fellow 1 – First Year)
F2	(Fellow 2 – Second Year)
FITER	Final In-training Evaluation Report
GI	Gastrointestinal
ITER	In-training Evaluation Report
MCQs	Multiple Choice Questions
MPS	Minimum Passing Score
OAGB	One-anastomosis Gastric Bypass
PUD	Peptic Ulcer Disease
SADI	Single Anastomosis Duodenoileal Bypass
SAQs	Short Answer Questions
SCFHS	Saudi Commission for Health Specialties
SOE	Structured Oral Examination
SSC	Specialty Scientific Council



VII. PROGRAM ENTRY REQUIREMENTS

The fellowship entry requirements correlate with the executive policy of the SCFHS on admission and registration. Approval of the requirements is based on the SCFHS' general training bylaws. In addition, the following must be adhered to:

1. The applicant must submit all of the following documents:
 - Application form
 - Curriculum vitae
 - Copy of transcript of records
 - Copy of MBBS or equivalent degree approved by the SCFHS
 - Copy of national ID/Iqama/passport
 - Copy of SMLE
 - Recommendation letters (3)
 - Passport size photos (3)
 - A valid SCFHS Professional Registration Record
2. The applicant must have completed residency training (board eligibility or certification) in general surgery accredited by the SCFHS. No Saudi fellow must have Board Equivalency Specialty Residency Certificate approved by the SCFHS.
3. Candidates must pass the admission interview.
4. Candidates must have a sponsorship source or provide written permission from a sponsoring institution that allows him/her to participate in the fellowship for the entire period on a full-time basis.

VIII. LEARNING AND COMPETENCIES

The training program implements the concept of adult learning principles, where fellows are responsible for their own learning requirements and needs. The program stresses learning defined as a lifelong acquisition of knowledge and clinical and operative skills (Table 1).

Table 1: Competencies, learning objectives, and outcomes

Competency – Roles	Learning Objective and Outcome
As medical experts, fellows should	<ol style="list-style-type: none">1. integrate all of the Can MEDS Roles to provide optimal, ethical, and patient-centered medical care.2. display and maintain clinical knowledge, skills, and behaviors appropriate to their practice.3. synthesize a complete and appropriate assessment of a patient.4. follow preventive and therapeutic interventions effectively.5. practice appropriate use of procedural skills, both diagnostic and therapeutic.6. have appropriate consultation with other health professionals, recognizing the limits of their own expertise.7. contribute as an individual and as a member of a team providing care for the continuous improvement of healthcare quality and patient safety.



Competency – Roles	Learning Objective and Outcome
As communicators, fellows should	<ol style="list-style-type: none"> 1. develop rapport, trust, and ethical therapeutic relationships with patients and their families. 2. accurately elicit and synthesize relevant information and perspectives of patients and families, colleagues, and other professionals. 3. demonstrate a common understanding of issues and problems and work with patients, families, and other professionals to develop a shared plan of care.
As collaborators, fellows should	<ol style="list-style-type: none"> 1. collaborate effectively with physicians and other colleagues in the healthcare profession to promote understanding, manage differences, and resolve conflicts. 2. endorse the care of a patient to another healthcare professional to facilitate continuity of safe patient care.
As health advocates, fellows should	<ol style="list-style-type: none"> 1. respond to every patient's health needs by advocating for the patient within and beyond the clinical environment. 2. respond to the needs of the community or population they serve by advocating alongside them for system-level changes in a socially accountable manner.
As leaders, fellows should	<ol style="list-style-type: none"> 1. contribute to the improvement of healthcare delivery in teams, organizations, and systems. 2. engage in the stewardship of healthcare resources. 3. demonstrate leadership in professional practice.
As scholars, fellows should	<ol style="list-style-type: none"> 1. engage in the continuous enhancement of their professional skills through ongoing learning. 2. educate and train students, residents, and other healthcare professionals, as well as the public. 3. integrate the best available evidence into their practice.

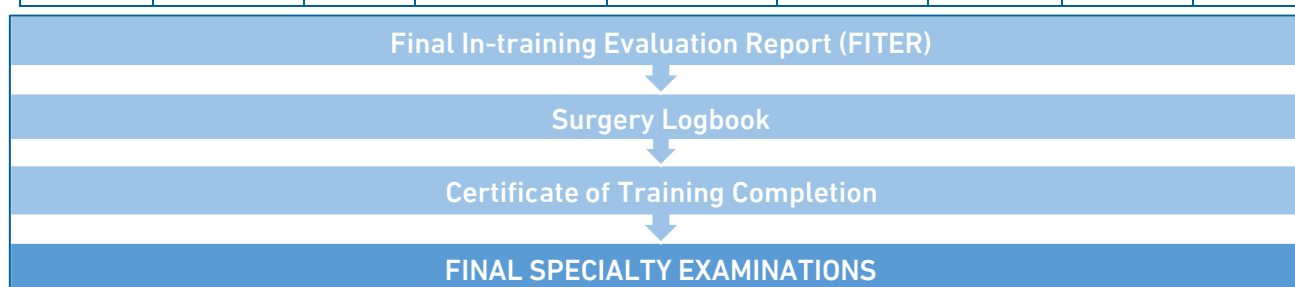
Competency – Roles	Learning Objective and Outcome
As professionals, fellows should	<ol style="list-style-type: none"> 1. demonstrate a commitment to their patients by applying best practices and abiding by high ethical standards. 2. demonstrate a commitment to the profession by adhering to standards and participating in physician-led regulations. 3. demonstrate a commitment to the physician’s health and well-being to foster optimal patient care.

1. Program Duration

This fellowship is a two-year program. In the first year (F1), fellows rotate through minimally invasive upper GI and bariatric surgery, endoscopy, research proposal submission, and annual/educational leaves. In the second year (F2), they continue their rotations through minimally invasive upper GI and bariatric surgery, radiology, submission of their completed research, and annual/educational leaves (Table 2).

Table 2: Program Rotations

Training year	Main Rotations			Selective Rotations			Leaves	
	Rotation name	Duration	Settings	Rotation name	Duration	Settings		
1st year: F1	Minimal invasive upper GI and bariatric surgery	10 blocks	- ER - Inpatient - Outpatient - OR - Group therapy	- Endoscopy - Research proposal submission	2 blocks	Endoscopy department	1 block*	Formative Assessment (Global Ratings/Direct Observation/Case Discussions)
End-of-Year Summative Assessment (MCQs/Structured Oral/Global Ratings)								
2nd year: F2	Minimal invasive, upper GI, and bariatric surgery	10 blocks	- ER - Inpatient - Outpatient - OR - Group therapy	- Radiology - Completed research project submission	2 blocks	Radiology department	1 block	



*One block = 4 weeks

Program rotations should be guarded by continuous monitoring of the following domains' learning objectives and outcomes (Table 3):

Table 3: Learning objectives and outcomes of different domains

Domain	Knowledge	Clinical skill	Technical skill
Advanced Laparoscopic Skills	<p>Fellows will be able to</p> <ol style="list-style-type: none"> 1. explain the physiology of pneumoperitoneum 2. determine proper selection and placement of trocars safely and effectively. 3. execute proper positioning of patients for a particular procedure with emphasis on the safety and protection of the patient and personnel. 4. conduct the proper placement of monitors and personnel to optimize the operative approach. 5. select the proper choice of instrumentation, equipment, and energy sources. 6. manage to troubleshoot MIS equipment such as monitors, insufflation, and recording components. 7. practice a safe use of energy sources with an understanding of the advantages and limitations of each. 	<p>Fellows will be able to</p> <ol style="list-style-type: none"> 1. describe the clinical manifestations of pneumoperitoneum. 2. describe clinical indications of laparoscopic surgery. 3. perform clinical assessment of patients for laparoscopic surgery. 4. practice clinical assessment and monitoring of patients during laparoscopic surgery. 5. perform clinical assessment of patient post-laparoscopic surgery. 6. describe clinical manifestations of post-laparoscopic surgery complications. 	<p>Fellows will be able to perform</p> <ol style="list-style-type: none"> 1. laparoscopic exposure of all intraabdominal areas, as well as use retractors. 2. proper tissue handling and two-handed surgical techniques. 3. intracorporeal and extracorporeal laparoscopic suturing. 4. endoscopic stapling. 5. intracorporeal anastomosis—linear and circular. 6. laparoscopic adhesiolysis. 7. laparoscopic running of the bowel. 8. placement and fixation of prosthetic materials. <p>They will also be able to interpret</p>



Domain	Knowledge	Clinical skill	Technical skill
			9. Intraoperative ultrasound. 10. Intraoperative endoscopy.
Esophagus	Fellows will be able to <ol style="list-style-type: none"> 1. explain the embryology, anatomy, and physiology of the thoracic and abdominal esophagus and the gastroesophageal junction. 2. explain physiologic and radiographic tests used in the evaluation and treatment of esophageal disorders. 3. explain the roles of <ol style="list-style-type: none"> i. esophageal manometry, ii. barium/gastrograffin swallow, iii. computed tomography. iv. pH studies—bravo probe, 24-h with proximal and distal measurements. 4. explain indications for <ol style="list-style-type: none"> i. upper GI endoscopy <ul style="list-style-type: none"> - Biopsy - Dilation - Ablative therapy - Plication of the gastroesophageal junction 	Fellows will be able to <ol style="list-style-type: none"> 1. perform clinical assessment of esophageal disorders. 2. request investigations of common esophageal disorders. 3. identify and recognize the anatomic structures of the gastroesophageal junction both on imaging and intra-operatively. 4. demonstrate the salient features of the esophageal physiologic studies and interpret them, including: <ol style="list-style-type: none"> i. esophageal manometry, ii. barium/gastrograffin swallow, iii. computed tomography, iv. pH studies—Bravo probe, 24-hour with proximal and distal measurements, 	Fellows will be able to: <ol style="list-style-type: none"> 1. perform endoscopy and biopsy or ablation as indicated. 2. master operative strategies, including port positioning and patient positioning for the following minimally invasive esophageal procedures: <ol style="list-style-type: none"> i. Laparoscopic Heller myotomy, ii. Laparoscopic hiatal hernia repair, iii. Fundoplication <ul style="list-style-type: none"> - Nissen fundoplication - Toupet fundoplication - Dor fundoplication

Domain	Knowledge	Clinical skill	Technical skill
	<p>ii. explain the role of endoscopic ultrasound in</p> <ul style="list-style-type: none"> - Achalasia - Gastroesophageal reflux disease - Esophageal diverticula - Hiatal hernia - Gastroesophageal carcinoma - Lower esophageal structure 	<p>5. describe indication for esophagogastroduodenoscopy, with biopsy or ablation where indicated.</p> <p>6. describe indications for endoscopic ultrasound and interpret reports.</p> <p>7. describe indication, patient selection, and outcomes for endoscopic plication of the gastroesophageal junction. This may include performing the procedure in some programs.</p> <p>8. describe indications, clinical assessments, common investigations, potential complications of open and minimally invasive procedures, and postoperative and long-term management plans for all commonly performed procedures for the following disorders of the esophagus:</p> <ul style="list-style-type: none"> a. Achalasia b. Esophageal diverticula 	<ul style="list-style-type: none"> - Collis gastroplasty <p>iv. Laparoscopic lower esophagectomy.</p>



Domain	Knowledge	Clinical skill	Technical skill
		<ul style="list-style-type: none"> c. Hiatal hernia d. Adenocarcinoma of the gastroesophageal junction. 	
Stomach and Duodenum	<p>Fellows will be able to</p> <ol style="list-style-type: none"> 1. explain the embryology, physiology, and anatomy of the stomach and duodenum. 2. explain physiologic and radiographic tests used for the evaluation of stomach and duodenal disorders. 3. explain the roles of <ul style="list-style-type: none"> a. computed tomography, b. magnetic resonance imaging, c. upper GI series, d. gastric emptying study, e. gastroduodenoscopy and endoscopic procedures, f. endoscopic ultrasound. 4. explain benign gastric diseases including the following: <ul style="list-style-type: none"> a. Peptic ulcer diseases (PUD) <ul style="list-style-type: none"> - Epidemiology - Natural history - Pathophysiology, including the importance of 	<p>Fellows will be able to</p> <ol style="list-style-type: none"> 1. perform clinical assessment of stable and unstable patients with gastroduodenal disorders. 2. request and interpret corresponding investigations. 3. interpret the significance of the reports and images from the following physiologic and radiographic studies of the stomach and duodenum: <ul style="list-style-type: none"> a. Computed tomography, b. Magnetic resonance imaging, c. Upper GI series, d. gastric emptying study. 4. interpret the results of gastroduodenoscopy. 5. interpret the findings of endoscopic ultrasound. 	<p>Fellows will be able to</p> <ol style="list-style-type: none"> 1. perform gastroduodenoscopy. 2. develop an operative strategy and master port-positioning, patient positioning, and instrument selection. 3. perform or assist in the following procedures: <ul style="list-style-type: none"> a. Partial gastrectomy, b. Wedge resection, c. Antrectomy, d. Billroth I reconstruction, e. Billroth II reconstruction, f. Roux-Y reconstruction, g. Total gastrectomy, h. Vagotomy,

Domain	Knowledge	Clinical skill	Technical skill
	<p>helicobacter pylori infection diagnosis, such as malignant potential.</p> <ul style="list-style-type: none"> - treatment (medical and surgical) - complications of PUD, including stricture, gastric outlet obstruction, etc. <p>b. Gastric polyps</p> <p>c. Mortality disorders</p> <p>d. Malignant gastric tumors</p> <ul style="list-style-type: none"> i. Carcinoid tumor, ii. Adenocarcinoma, iii. Lymphoma, iv. Stromal tumor. <p>e. Bariatric procedures</p> <ul style="list-style-type: none"> i. Sleeve gastrectomy, ii. Roux-Y gastric bypass, iii. One-anastomosis gastric bypass (OAGB), iv. Laparoscopic adjustable gastric banding, v. Single anastomosis duodenoileal bypass (SADI), vi. other surgical procedures. 	<p>6. describe the indications, options, potential complications, postoperative, and long-term follow-up of open and minimally invasive procedures done for the following disorders of the stomach and duodenum:</p> <ul style="list-style-type: none"> a. Peptic ulcer disease, b. Gastric Neoplasms and polyps, c. Carcinoid tumors, d. Adenocarcinoma, e. Morbid obesity, f. Roux-Y gastric bypass, g. Sleeve gastrectomy, h. One-anastomosis gastric bypass (OAGB), i. Single anastomosis duodenoileal bypass (SADI), j. Other operative interventions. 	<ul style="list-style-type: none"> i. Omental patch for ulcer disease (Graham patch) j. Palliative intestinal bypass for unresectable or intractable duodenal or pyloric disease, k. Bariatric procedures.



Domain	Knowledge	Clinical skill	Technical skill
Spleen	<p>Fellows will be able to</p> <ol style="list-style-type: none"> 1. explain the embryology, physiology, and anatomy of the spleen. 2. request appropriate physiologic tests used in the evaluation of the following splenic disorders: <ol style="list-style-type: none"> a. Biochemical studies, b. Hematologic studies, 3. request radiographic test used in the evaluation of splenic disorders such as <ol style="list-style-type: none"> a. Computed tomography, b. Magnetic resonance imaging 4. explain benign splenic diseases. 5. explain hematologic disorders, including the following: <ol style="list-style-type: none"> a. ITP, TTP, polycythemia vera b. Indications for splenectomy 6. explain splenic cysts. 7. explain malignant splenic diseases. 8. explain splenic lymphoma. 	<p>Fellows will be able to</p> <ol style="list-style-type: none"> 1. practice clinical assessment of patients with splenic disorders. 2. interpret the images and significance of reports of the following radiographic studies of the spleen: <ol style="list-style-type: none"> a. Computed tomography, b. Magnetic resonance imaging 3. describe indications, limitations, options, and potential complications of minimally invasive procedures done for the following disorders of the spleen: <ol style="list-style-type: none"> a. Hematologic disorders of the spleen, b. Splenic cysts, c. Lymphoma. 4. construct a post-operative and long-term plan for post-splenectomy patients. 	<p>Fellows will be able to</p> <ol style="list-style-type: none"> 1. develop operative strategies and perform procedures such as port-positioning, patient-positioning, and instrument selection. 2. perform or assist in the following procedures: <ol style="list-style-type: none"> a. Laparoscopic splenectomy b. Laparoscopic and open splenorrrhaphy and traumatic splenectomy.

Domain	Knowledge	Clinical skill	Technical skill
Morbid Obesity Part 1 - Understanding Morbid Obesity	<p>Fellows will be able to</p> <ol style="list-style-type: none"> 1. explain the epidemiology of obesity, including obesity in children and adolescents, and geriatric obesity. 2. explain the inflammatory and pathophysiologic mechanisms of morbid obesity. 3. explain the psycho-social issues associated with morbid obesity. 4. identify and manage nutritional deficiencies post bariatric surgery. 5. Discuss the outcomes of bariatric surgery. 	<p>Fellows will be able to</p> <ol style="list-style-type: none"> 1. apply their knowledge to evaluate obese patients for appropriate management. 2. request appropriate evaluation measures of obese patients, including end-organ by-products of the disease including <ol style="list-style-type: none"> a. cardiac diseases, b. pulmonary diseases, c. musculoskeletal diseases, d. psychological diseases, e. metabolic diseases 3. provide patients with the necessary information to choose appropriate management options. 4. participate in the multidisciplinary team for the management of obesity. 5. attend bariatric surgery patient support group meetings. 	



Domain	Knowledge	Clinical skill	Technical skill
Morbidity Obesity Part 2 – Non-operative Management of Obesity	<p>Fellows will be able to explain non-surgical management options for obesity caloric management including</p> <ol style="list-style-type: none"> 1. exercise physiology, 2. pharmacologic management 3. gastric balloon 4. staged management of severely or high-risk obese patients. 	<p>Fellows will be able to</p> <ol style="list-style-type: none"> 1. describe various diet and caloric management systems, including how they work and their short- and long-term outcomes. 2. predict potential complications of low-calorie diets and monitor adverse outcomes. 3. describe different exercise programs and the benefits/risks of each for the obese patient. 4. prescribe medications for weight control, including appropriate dosing and usage. This will require an understanding of outcomes, side effects, and risks. 5. describe gastric balloon indication, complications, and staged (bridging) management. 	<p>Fellows will be able to perform</p> <ol style="list-style-type: none"> 1. gastric balloon insertion, 2. gastric balloon removal, 3. laparoscopic treatment of gastric balloon complications.

Domain	Knowledge	Clinical skill	Technical skill
Morbid Obesity Part 3 – Primary Operative Management of Morbid Obesity	<p>Fellows will be able to describe</p> <ol style="list-style-type: none"> 1. laparoscopic and open surgical access, 2. restrictive operations, 3. gastric bypass, 4. malabsorptive procedures, 5. preoperative evaluation and postoperative management of the bariatric patient, including obesity-related conditions, 6. complications identification and management. 	<p>Fellows will be able to</p> <ol style="list-style-type: none"> 1. perform clinical assessment of obese patients for surgery. 2. request preoperative evaluations, including <ol style="list-style-type: none"> a. ordering and interpreting appropriate testing, b. consulting with non-surgical specialists when needed, c. predicting the most appropriate surgical options, d. educating patients on the benefits and risks of each option. 3. conduct postoperative patient care and postoperative outpatient evaluations. 	<p>Fellows will be able to</p> <ol style="list-style-type: none"> 4. assist in all weight loss operations. 5. perform common bariatric surgical procedures as primary surgeons. <p>assist in the management of complex operations and the treatment of complications.</p>
Morbid Obesity Part 4 - Revisional Operative Management of Morbid Obesity	<p>Fellows will be able to explain</p> <ol style="list-style-type: none"> 1. revisional surgical options, including indications, risks, and benefits; 2. failure of weight loss and weight regain causes and management; 3. preoperative and postoperative evaluation of revisional surgery. 	<p>Fellows will be able to</p> <ol style="list-style-type: none"> 1. participate in preoperative evaluations for surgical revision: <ol style="list-style-type: none"> a. Order and interpret appropriate testing; b. Consult with non-surgical specialists when needed; 	<p>Fellows will be able to perform appropriate operative skills of primary and revisional procedures.</p>



Domain	Knowledge	Clinical skill	Technical skill
		<ul style="list-style-type: none"> c. Evaluate the most appropriate surgical options; d. Educate patients on the benefits and risks of each option. <ul style="list-style-type: none"> 2. Acquire appropriate skills through primary and revisional procedure management of immediate post-operative care plan and long-term follow-up. 	
Morbidity Part 5 - Management of Complications of Bariatric Surgery	<p>Fellows will be able to</p> <ul style="list-style-type: none"> 1. describe comprehensive management of complications and obesity-related conditions. 2. recognize and manage early and late complications, including: <ul style="list-style-type: none"> a. understanding the common presentation of these complications, b. etiology and risk factors. 	<p>Fellows will be able to</p> <ul style="list-style-type: none"> 1. detect post-operative complications through history and clinical examination. 2. describe the physiologic impact of delaying diagnosis or the treatment of post-operative complications. 3. demonstrate and practice appropriate use and interpretation of diagnostic tests to determine the presence and magnitude of post-operative complications. 	<p>Fellows will be able to</p> <ul style="list-style-type: none"> 1. acquire operative skills to manage complications. 2. request appropriate management procedures for intraabdominal sepsis. 3. demonstrate appropriate management of internal hernia, leak, and bowel ischemia. 4. execute damage control emergency surgery.

Domain	Knowledge	Clinical skill	Technical skill
		4. demonstrate and practice a safe and logical plan of action, and show expediency in implementing the management of post-operative complications.	

2. Research General Plan

One block rotation is conducted in research. This block is divided into two halves, the first half in year 1 (F1) and the next half in year 2 (F2).

1st half (F1)

1. The fellow will choose a research project and submit a research proposal.
2. The fellow will choose a supervisor to help in accessing the essential resources that will allow an appropriate understanding of research skills and periodically discuss the progress.
3. The fellow will submit the research team members and progress plan.
4. The fellow will complete all research requirements to start the research project.
5. The attendance of dedicated courses or workshops that enhance research skills may be required by the program.

2nd half (F2)

1. The fellow will finish the research project and should be accepted by the research committee.
2. The research paper will be submitted.
3. It is highly desirable for the fellows to work on presenting the research results at national and/or international meetings and work hard to publish their work in indexed journals.



3. Evaluation

1. Attendance at designated courses/lectures will be monitored and incorporated into the annual evaluation score.
2. Panel scoring of the research abstract presentation will be conducted at the end of the second year.
3. Research awards will be offered to fellows who publish in high-impact journals.

IX. CONTINUUM OF LEARNING

Training in Minimally Invasive Upper GI and Bariatric Surgery is a continuous process that is achieved through various activities to achieve competency in specialty surgery similar to other specialties. Continuous professional development (CPD) is a lifelong process to keep up with the new development and progress in a medical career. The following shows how the role is progressively expected to develop throughout the F1 and F2 levels of practice (Table 4).

Table 4: Continuum of learning from F1 to F2

General Specialty	F1 (Minimal Invasive, Upper GI, and Bariatric Surgery)	F2 (Minimal Invasive, Upper GI, and Bariatric Surgery)
General surgery board	Dependent/supervised practice.	- Achieve competent and independent practice/supervised practice.
Obtain basic health science and foundational level to core discipline knowledge	<ul style="list-style-type: none"> - Obtain fundamental knowledge related to the core clinical practice of minimal invasive upper GI and bariatric surgery specialty. - Acquire further knowledge in all aspects of this specialty to progress to higher competencies. 	- Acquire advanced and up-to-date knowledge related to core clinical problems of the specialty.
General clinical and surgical skills	<ul style="list-style-type: none"> - Apply clinical and technical skills relevant to practice. - Acquire further competencies in clinical and procedural technical related to the core of the specialty. 	<ul style="list-style-type: none"> - Achieve independent practice in certain well-practiced procedures, participation in more complex - demanding procedures.



X. TEACHING METHODS

The training program implements the concept of adult learning in all educational activities, in which the fellows are responsible for their own learning requirements. Formal training includes the following teaching and learning activities:

1. Fellowship General Educational Activities

- A) formal training time should be supplemented by
 - a. Journal club every month
 - b. Grand rounds weekly
 - c. Involvement in quality improvement committees and meetings, as required
 - d. Morbidity and mortality (M&M) monthly.

2. Fellowship-Specific Educational Activities

- A) Fellowship academic half-day

A weekly academic half-day covers all the theoretical components of the teaching methods and shall be presented and supervised by the fellows in collaboration with junior and senior colleagues. Two interactive lectures could be scheduled weekly (Table 5).

Table 5: Weekly academic half-day presentations

TOPIC	PRESENTER	DATE
Anatomy and physiology of the esophagus, stomach, duodenum, and small bowel.		
Anatomy and physiology of the spleen		
Physiology of pneumoperitoneum		
Etiology and management of upper GI bleeding		
Achalasia, etiology, presentation, and treatment		
Gastroesophageal reflux disease		
Esophageal diverticula		
Hiatal and paraesophageal hernias		
Esophageal carcinoma and junctional tumors		
Diagnostic imaging in upper GI and bariatric surgery		
Peptic ulcer disease		
Gastric polyps		
Carcinoid tumor of the stomach		
Adenocarcinoma of the stomach		
Lymphoma of the stomach		
Gastrointestinal stromal tumors (GIST)		
ITP, TTP, polycythemia vera, and splenectomy		
Splenic cysts		
Lymphoma of the spleen		



TOPIC	PRESENTER	DATE
Ventral hernia, classification, diagnosis, treatment, and graft materials		
Epidemiology of obesity		
History of bariatric surgery		
Physiology and interactive mechanisms in morbid obesity		
Preoperative evaluation of the bariatric patient		
Psychology of the morbidly obese patient		
Essentials of a bariatric program		
Postoperative management of the bariatric patient		
Gastric bypass		
Biliopancreatic diversion/duodenal switch		
Revisional weight loss surgery		
Managing postoperative complications, early and definitive management		
Nutritional deficiencies		
Obesity in childhood and adolescence		
Outcomes of bariatric surgery		
Role of endoscopy in bariatric surgery and its complications		
Psychology of the morbidly obese patient Personality and psychopathology Eating behavior and social integration Quality of life, homogeneity, and treatment vs. no treatment		

3. Knowledge Topics and Skills are Presented in Appendix A

These are mandatory knowledge topics and skills that a fellow must attain and assess.

4. Universal Topics (Appendix B)

These are high-value, interdisciplinary topics that are of the utmost importance to trainees. They must be centrally delivered to ensure that every trainee receives high-quality teaching and obtains the essential core knowledge. These topics are common to all specialties, with each topic having a suggested time of 1.5 hours.

These topics will be delivered in a modular fashion. At the end of each module, there will be an online formative assessment. After all of the topics have been completed, there will be a combined summative assessment that is rich in content, and the assessment will be in the form of multiple choice questions. All trainees must attain at least the minimum competency in the summative assessment. In Appendix B, the required topics are to be completed in F1 and F2.

5. Daily Activities

Training programs should consider similar daily activities schedule, as suggested in Table 6, since the fellows should cover all of these aspects.



Table 6: Suggested daily activities

Day	AM Activity	PM Activity
Sunday	<ul style="list-style-type: none"> ▪ Early morning pre-op. rounds ▪ OR cases 	<ul style="list-style-type: none"> ▪ OR cases
Monday	<ul style="list-style-type: none"> ▪ Early morning bedside round ▪ OPD clinic ▪ OR 	<ul style="list-style-type: none"> ▪ OPD clinic ▪ OR ▪ Pre-operative round
Tuesday	<ul style="list-style-type: none"> ▪ Early morning bedside round ▪ OR 	<ul style="list-style-type: none"> ▪ OR
Wednesday	<ul style="list-style-type: none"> ▪ Early morning bedside round ▪ OPD ▪ OR 	<ul style="list-style-type: none"> ▪ OPD ▪ OR
Thursday	<ul style="list-style-type: none"> ▪ Grand rounds ▪ Section activity / journal club meeting ▪ M&M conference 	<ul style="list-style-type: none"> ▪ Weekend endorsement round ▪ Library hours

XI. ASSESSMENT AND EVALUATION

1. Purpose of Assessment

Assessments play a vital role in the success of postgraduate training. It will guide trainees and trainers to achieve defined standards, learning outcomes, and competencies. The assessment will provide feedback to learners and faculty regarding curriculum development, teaching methods, and the quality of the learning environment. A reliable and valid assessment is an excellent tool for evaluating curriculum alignments between objectives, learning methods, and assessment methods. Finally, assessment assures patients and the public that health professionals are safe and competent to practice. It can serve the following purposes:

- a. **Assessment for learning:** Trainers use information from trainees' performance to inform their learning for improvement. It enables educators to use information about trainees' knowledge, understanding, and skills of providing feedback to them about learning and how to improve.
- b. **Assessment as learning:** It involves trainees in the learning process, which enables them to monitor their own progress. Trainees use self-assessment and educators' feedback to reflect on their progression. It develops and supports trainees' metacognitive skills. Assessment as learning is crucial to helping the students become lifelong learners.
- c. **Assessment of learning:** It is used to demonstrate the achievement of learning. This is a graded assessment and usually counts toward the trainee's end-of-training degree.



d. **Feedback and evaluation:** Assessment outcomes will represent quality metrics that can improve the learning experience.

For the sake of organization, assessments will be further classified into two main categories: formative and summative.

2. Formative Assessment

2.1 General principles

Formative assessment (also referred to as continuous assessment) is a component of assessment that is distributed throughout the academic year, aiming to primarily provide trainees with effective feedback. Adult learners should make every effort for feedback throughout their training journey. Inputs from the overall formative assessment tools will be utilized at the end of the year to make the decision to promote each individual trainee from the current-to-subsequent training level. Formative assessment implies a continuous monitoring and feedback processes of fellows throughout the program. Candidate fellows should be periodically made aware of their performance in knowledge acquisition, skills development, and soft skills (attitude, communication, interpersonal relations, ethics, teamwork, etc.) development.

2.2 Formative assessment tools (Table 7)

Table 7: Formative assessment tools against competency domains

Learning Domain	Formative Assessment Tools	Important details (e.g. frequency, specifications related to the tool)	F1	F2
Knowledge	<ul style="list-style-type: none"> - Structured Oral Exam (SOE) - Annual Written Progress Test (local) - Structured academic activities - Case-based discussion (CBD) report 	<ul style="list-style-type: none"> - SOE at the end of Year 1 and Year 2: Done by the program director and trainers as examiners, addressing elective and emergency case scenarios, problem-solving, and operative skills. (5 stations; 3 bariatric, and 2 upper GI) - 100 MCQs (case scenarios stem from type A-based responses) at the end of Year 1 and Year 2, addressing the cognitive domain and problem-solving skills - The fellow must present and discuss a minimum number of topic presentations (F1 = 5; F2 = 10 topics) - The fellow must submit a minimum number of case presentation sessions (CBD) reports. 	<p>MPS* ≥60%</p> <p>MPS ≥60%</p> <p>5 5</p>	<p>MPS ≥70%</p> <p>MPS ≥70%</p> <p>10</p> <p>10</p>



Learning Domain	Formative Assessment Tools	Important details (e.g. frequency, specifications related to the tool)	F1	F2
Skills	- Logbook	Logbook** (Appendix C)	1	1
	- Research activities	Writing and publishing research papers at the end of the rotation	1	1
	- Selective/elective activities or rotations will be evaluated by the ITER			
Attitude	- ITER: In-Training Evaluation Report - 3600 Global Ratings	- Done by the Program Director and Trainers using the global rating evaluation report (ITER) every six months. (F1: $\geq 60\%$)	$\geq 60\%$	$\geq 70\%$

*MPS: minimum passing score

**Target Logbook: A log of all operative procedures must be kept and provided to the program director at the middle and end of each year for approval and signature. Minimum requirements are presented in Appendix D.

The evaluation of each component will be based on the following equation:

Percentage	< 50%	50–59.9%	60–69.9%	>70%
Description	Clear fail	Borderline fail	Borderline pass	Clear pass

To achieve unconditioned promotion, the candidate must score a minimum of “borderline pass” in all five components.

- The program director can still recommend the promotion of candidates if the above equation is not met in some situations:
- The candidate scored “borderline failure” in one or two components at maximum, and these scores should not belong to the same area of

assessment (for example, both borderline failures should not belong both to skills).

- The candidate must have passed all other components and scored a minimum of “Clear pass” in at least two components.

2.3. Progressive examinations from F1 to F2

2.3.1 Written (100 MCQs) testing knowledge, case-based, and problem solving

- a) 60 % bariatric surgery questions
 - Assessment, multidisciplinary roles, non-surgical management, etc. (20%)
 - Primary bariatric surgery (20%)
 - Revisional bariatric surgery (10%)
 - Bariatric surgery complications (10%)
- b) 20% benign GI diseases
- c) 15% malignant upper GI diseases
- d) 5% spleen diseases

2.3.2 Structured oral examination (5 stations: 3 bariatric and 2 upper GI)

2.3.3 Direct observation of procedural skills (DOPS assessment)

2.3.4 Global rating (ITER) by the trainers’ committee

3. Summative Assessment

3.1 End of the program (F2) examinations (final graduation examinations)

3.1.1 Written (100 MCQs) testing knowledge, case-based, and problem-solving

- a) 60 % bariatric surgery questions:
 - Assessment, multidisciplinary roles, non-surgical management, etc. (20%)
 - Primary bariatric surgery (20%)



- Revisional bariatric surgery (10%)
- Bariatric surgery complications (10%)
- b) 20% benign upper GI diseases
- c) 15% malignant upper GI diseases
- d) 5% spleen diseases

3.1.2 Structured oral examination (5 stations: 3 bariatric and 2 upper GI)

(External Examiners)

3.1.3 Direct observation of procedural skills (DOPS assessment)

3.1.4 Global rating (ITER) by the trainers' committee

3.2 Final in-training evaluation report (FITER)

Besides the approval of the completion of clinical requirements by the supervising committee, the FITER is also prepared by fellowship directors for each fellow at the end of his or her final year of training. This report shall be the basis for obtaining the certificate of training fellowship completion as well as the qualification for the final examination. For further details on this section, please refer to the general bylaws and executive policy of assessment (available online: www.scfhs.org).

3.3 Certification of training completion

To be eligible for the final exam, each trainee is required to obtain the “Certification of Training Completion” based on the training bylaws and executive policy. Trainees will be granted the “Certification of Training Completion” once the following criteria are fulfilled:

- i. Successful completion of all training rotations
- ii. Completion of training requirements (e.g., logbook, research, others), as outlined in the FITER that is approved by the scientific council/committee of the vascular program
- iii. Passing all promotion exams

- iv. Clearance from SCFHS training affairs that ensure compliance with tuition payments and the completion of universal topics.

The “Certification of Training-Completion” will be issued and approved by the supervisory committee or its equivalent according to SCFHS policies.

Table 8: Summative assessment

Category	Assessment					
	Sections	Written Exam	Oral Exam	(ITER)	F1 MPS	F2 MPS
Knowledge Appendix (A)	Principles of surgery	✓	✓		≥60%	≥70%
	Benign esophageal conditions	✓	✓		≥60%	≥70%
	Hiatus and paraesophageal hernias (plus other congenital diaphragmatic defects)	✓	✓		≥60%	≥70%
	Primary, secondary, and recurrent gastroesophageal reflux disease (GERD)	✓	✓		≥60%	≥70%
	Peptic ulcer disease (PUD) and its complications	✓	✓		≥60%	≥70%
	Benign and malignant gastric tumors	✓	✓		≥60%	≥70%
	Diseases of the spleen and post-splenectomy complications	✓	✓		≥60%	≥70%
	Morbid obesity	✓	✓		≥60%	≥70%



Category	Assessment					
	Sections	Written Exam	Oral Exam	(ITER)	F1 MPS	F2 MPS
Skills Appendix (A)	Mastery of the history, physical examinations, and differential diagnoses of Upper GI conditions and Morbid obesity			✓	≥60%	≥70%
	Ordering appropriate, relevant, and cost-effective investigations			✓	≥60%	≥70%
	Non-surgical treatment of upper GI conditions and morbid obesity	✓	✓		≥60%	≥70%
	Non-surgical management of upper GI / bariatric emergencies and complications	✓	✓		≥60%	≥70%
	Basic laparoscopic techniques		✓	✓	≥60%	≥70%
	Advanced laparoscopic skills, including oversewing and stapling techniques		✓	✓	≥60%	≥70%
	Laparoscopic repair of hiatus/paraesophageal hernia (+/- use of mesh)		✓	✓	≥60%	≥70%
	Laparoscopic fundoplication (Nissen/Toupet/Dor)		✓	✓	≥60%	≥70%

Category	Assessment					
	Sections	Written Exam	Oral Exam	(ITER)	F1 MPS	F2 MPS
	Laparoscopic Heller's myotomy		✓	✓	≥60%	≥70%
	Laparoscopic splenectomy		✓	✓	≥60%	≥70%
	Laparoscopic gastric banding		✓	✓	≥60%	≥70%
	Laparoscopic sleeve gastrectomy		✓	✓	≥60%	≥70%
	Laparoscopic gastrointestinal anastomosis (OAGB, RYGB, etc.)		✓	✓	≥60%	≥70%
	Laparoscopic gastrectomy (partial or total with anastomosis)		✓	✓	≥50%	≥70%
	Laparoscopic revisional upper GI and bariatric surgeries		✓	✓	≥60%	≥70%
	Laparoscopic/open management of upper GI / bariatric emergencies and complications		✓	✓	≥60%	≥70%
	Diagnostic upper GI endoscopy		✓	✓	≥60%	≥70%
Attitude	Communicator			✓	≥60%	≥70%
	Collaborator			✓	≥60%	≥70%
	Leader			✓	≥60%	≥70%



Category	Assessment					
	Sections	Written Exam	Oral Exam	(ITER)	F1 MPS	F2 MPS
	Health advocate			✓	≥60%	≥70%
	Professional			✓	≥60%	≥70%
Scholarly Activities and Research	Researcher and scholar			✓	≥60%	≥70%
Total						

Percentage	< 50%	50–59.9%	60–69.9%	>70%
Description	Clear fail	Borderline fail	Borderline pass	Clear pass

Table 9: Summative assessment blueprint

Domain	Assessment					
	Sections	Knows	Knows How	Shows How	Does	Test Instrument
Knowledge Appendix (A)	Principles of surgery	✓	✓			MCQs, SAQs
	Benign esophageal conditions	✓	✓			Case-based MCQs, SOE
	Hiatus and paraoesophageal hernias (plus other congenital diaphragmatic defects)	✓	✓			Case-based MCQs, SOE
	Primary, secondary, and recurrent gastroesophageal reflux diseases (GERD)	✓	✓			Case-based MCQs, SOE

Domain	Assessment					
	Sections	Knows	Knows How	Shows How	Does	Test Instrument
	Peptic ulcer disease (PUD) and its complications	✓	✓			Case-based MCQs, SOE
	Benign and malignant gastric tumors	✓	✓			Case-based MCQs, SOE
	Diseases of the spleen and post-splenectomy complications	✓	✓			Case-based MCQs, SOE
	Morbid obesity	✓	✓			Case-based MCQs; SAQs; SOE
Skills Appendix (A)	Mastery of the history, physical examinations, and differential diagnoses of upper GI conditions and morbid obesity			✓	✓	CBD, Reports;
	Ordering appropriate, relevant, and cost-effective investigations			✓	✓	Case-based, MCQs; SOE
	Non-surgical treatment of upper GI conditions and morbid obesity	✓	✓	✓	✓	Case-based MCQs; SOE; FITER
	Non-surgical management of upper GI/bariatric emergencies and complications	✓	✓	✓	✓	Case-based, MCQs, SOE, FITER
	Basic laparoscopic techniques			✓	✓	SOE, FITER



Domain	Assessment					Test Instrument
	Sections	Knows	Knows How	Shows How	Does	
	Advanced laparoscopic skills including oversewing and stapling techniques			✓	✓	SOE, FITER
	Laparoscopic repair of hiatus/paraesophageal hernia (+/- use of mesh)			✓	✓	SOE, FITER, Log book
	Laparoscopic fundoplication (Nissen/Toupet/Dor)			✓	✓	SOE; FITER; Log book
	Laparoscopic Heller's myotomy		✓	✓	✓	SOE; FITER
	Laparoscopic splenectomy			✓	✓	SOE; FITER
	Laparoscopic gastric banding		✓	✓	✓	SOE; FITER
	Laparoscopic sleeve gastrectomy			✓	✓	SOE; FITER; Log book
	Laparoscopic gastrointestinal anastomosis (OAGB, RYGB, etc.)			✓	✓	SOE; FITER; Log book
	Laparoscopic gastrectomy (partial or total with anastomosis)			✓	✓	SOE; FITER; Log book
	Laparoscopic revisional upper GI and bariatric surgeries			✓	✓	SOE; FITER; Log book

Domain	Assessment					
	Sections	Knows	Knows How	Shows How	Does	Test Instrument
	Laparoscopic/open management of upper GI / bariatric emergencies and complications			✓	✓	SOE; FITER; Log book
	Diagnostic upper GI endoscopy			✓	✓	SOE; FITER; Log book
Attitude	Communicator				✓	FITER
	Collaborator				✓	FITER
	Leader				✓	FITER
	Health advocate				✓	FITER
	Professional				✓	FITER
Scholarly Activities and Research	Researcher and scholar				✓	FITER; The Fellow has to submit at least 1 published research paper



XII. PROGRAM AND COURSE EVALUATION

The SCFHS applies variable measures to evaluate the implementation of this curriculum. The training outcomes of this fellowship will undergo the quality assurance framework endorsed by the Central Training Committee at the SCFHS. Trainees' assessment (both formative and summative assessment) results will be analyzed and mapped to curriculum content.

Other indicators that will be incorporated are as follows:

- Report of the annual trainees' satisfaction survey
- Reports from trainees' evaluation of faculty members
- Reports from trainees' evaluation of rotations
- Reports from the annual survey of fellowship directors
- Data available from fellowship accreditations
- Reports from direct field communications with trainees and trainers

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

In addition to subject matter opinions and best practices from benchmarked international fellowships, the SCFHS will apply a robust method to ensure that this curriculum utilizes all the data available during the time of the revision of this curriculum in the future.

XIII. POLICIES AND PROCEDURES

This curriculum represents the means and materials outlining learning objectives with which trainees and trainers will interact to achieve the identified educational outcomes. The SCFHS has a full set of “General Bylaws” and “Executive Policies” (published on the official SCFHS website) that regulate all processes related to training. General bylaws of training, assessment, and accreditation, as well as executive policies on admission, registration, continuous assessment and promotion, examination, trainees’ representation and support, duty hours, and leaves, are examples of regulations that need to be applied. Trainees, trainers, and supervisors need to apply this curriculum in compliance with the most updated bylaws and policies that can be accessed online (via the official SCFHS website, www.scfhs.org).



XIV. APPENDICES

Appendix A: Knowledge topics and procedure list

TOPIC	PROCEDURE
Anatomy and physiology of the esophagus, stomach, duodenum, and small bowel	Port sites and trocars insertion, safe access to the abdomen, eye-hand coordination
Anatomy and physiology of the spleen	Laparoscopic ergonomics, intracorporeal and extracorporeal suturing and stapling, and proper selection and use of energy devices
Physiology of pneumoperitoneum	Hiatus and paraesophageal hernia repair (+/-) Mesh types and indications for use
Etiology and management of upper GI bleeding	Congenital diaphragmatic hernia defects (Morgagni, Bochdalek) repair
Achalasia, etiology, presentation, and treatment	Nissen/Toupet/Dor Fundoplication
Gastroesophageal reflux disease	Hillier's Myotomy, esophageal diverticulectomy
Esophageal diverticula	Splenic cystectomy and elective splenectomy
Hiatal and paraesophageal hernias	Sleeve gastrectomy (LSG)
Esophageal carcinoma and junctional tumors	One-anastomosis gastric bypass (OAGB)
Diagnostic imaging in upper GI and bariatric surgery	Roux-en-Y gastric bypass (LRYGB)
Peptic ulcer disease	Gastric banding, banded bariatric surgery procedures, LINX®, etc.

TOPIC	PROCEDURE
Gastric polyps	Single-anastomosis duodenoileal bypass (+/-) sleeve gastrectomy (SADI, SADI-S)
Carcinoid tumor of the stomach	Partial gastrectomy for benign gastric tumors
Adenocarcinoma of the stomach	Subtotal and total gastrectomy for malignant gastric tumors with esophago-jejunal or gastro-jejunal anastomoses; omentectomy and level 2 or 3 lymph node dissection
Lymphoma of the stomach	Re-do bariatric procedures such as gastric band removal without or with SG, OAGB, RYGB. Re-sleeve, SG to OAGB, SG to RYGB, SG to SADI, OAGB to RYGB, re-do RYGB, reversals, etc.
Gastrointestinal stromal tumors (GIST)	Emergency bariatric surgery complications such as postoperative bleeding and leaks, strictures and twists, internal hernias, etc.
ITP, TTP, polycythemia vera, and splenectomy	Concomitant procedures such as cholecystectomy, distal pancreatectomy, colectomy, hernia repairs, with or without mesh
Splenic cysts	
Lymphoma of the spleen	
Ventral hernia, classification, diagnosis, treatment, and graft materials	
Epidemiology of obesity	
History of bariatric surgery	
Physiology and Interactive mechanisms in morbid obesity	
Preoperative evaluation of bariatric patients	



TOPIC	PROCEDURE
Psychology of morbidly obese patients	
Essentials of a bariatric program	
Postoperative management of bariatric patients	
Gastric bypass	
Biliopancreatic diversion / Duodenal switch	
Revisional weight loss surgery	
Management of postoperative complications, early and definitive management	
Nutritional deficiencies	
Obesity in childhood and adolescence	
Outcomes of bariatric surgery	
Role of endoscopy in bariatric surgery and its complications	
Psychology of morbidly obese patients Personality and psychopathology Eating behavior and social integration Quality of life, homogeneity, treatment vs no treatment	

Appendix B: SCFHS universal modules and topics

Training Year	Modules		Topics name	
	Number	Name	Number	Name
1 st year (F1)	Module 1	Introduction	Topic 2	Hospital acquired infections
			Topic 3	Sepsis; SIRS; DIVC
			Topic 4	Antibiotic stewardship
	Module 2	Cancer	Topic 6	Principles of management of cancer
	Module 3	Diabetes and Metabolic Disorders	Topic 11	Recognition and management of diabetic emergencies
			Topic 13	Comorbidities of obesity
	Module 4	Medical and Surgical Emergencies	Topic 19	Management of upper GI bleeding
	Module 5	Acute Care	Topic 21	Pre-operative assessment
			Topic 22	Post-operative care
			Topic 23	Acute pain management
2 nd year (F2)	Module 2	Cancer	Topic 7	Side effects of chemotherapy and radiation therapy
			Topic 8	Oncologic emergencies
			Topic 9	Cancer prevention
			Topic 10	Surveillance Follow-up of cancer patients
	Module 7	Ethics and Healthcare	Topic 31	Occupational hazards of HCW
			Topic 33	Patient advocacy
			Topic 35	Ethical issues: Treatment refusal; Patient autonomy
			Topic 36	Role of doctors in death and dying



Appendix C: Procedures logbook minimum requirements

By the end of the training period, the fellows are expected to perform the following:

1. A minimum of 20 laparoscopic Hiatal hernia repair procedures as an assistant and 10 cases as the primary surgeon
2. A minimum of 10 laparoscopic (Nissen/Troupet/Dor) fundoplication as an assistant and 5 cases as the primary surgeon
3. A minimum of 20 upper GI endoscopy
4. A minimum of 5 laparoscopic splenectomy as an assistant and 1 case as the primary surgeon
5. A minimum of 75 laparoscopic sleeve gastrectomy as the primary surgeon
6. A minimum of 20 gastrointestinal bariatric procedures (e.g., laparoscopic one-anastomosis gastric bypass (OAGB), laparoscopic Roux-en-Y gastric bypass (LRYGB)) as assistant and 5 as the primary surgeon
7. A minimum of 20 revisional bariatric procedures as the first assistant and 5 as the primary surgeon.
8. A minimum of 25 bariatric emergency surgeries as the first assistant.

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