

**Passed by Academic Council (Resolution No. 355/2006) dtd. 30/05/2006, subject to Uniformity in the Examination pattern.**

## **Maharashtra Health University - Nashik**

A. Duration: 3 years

B. Training programme: 3 years, Residency system.

During this period the candidate is suppose to acquire sound knowledge of clinical, diagnostic investigative and surgical aspects of Gastroenterology. Resident shall be primarily responsible for care of the patients under supervision of faculty members. They should also participate in research and academic activities of the department.

Training should include the following aspects.

1. Clinical and Operative Surgical Gastroenterology. Clinical work will include care of patient in outdoor and in a graduated manner.(including Laparoscopic and complex hepatobiliary, pancreatic Surgery)

1 st year Resident should carry out the basic clinical work up of the patient, and pre and post operative management intensive care. Should assist seniors at surgery.

2nd Year resident : Clinical and operative work under supervision.

3 rd Year resident: Independent decision making overall responsible for taking clinical rounds and training the ist Year residents. Carrying out routine and complex surgeries.

2. G I Endoscopy: Both Diagnostic and therapeutic - With collaboration from Medical GI department.

3. Research :

a) Should work in experimental lab, on a project related to GI surgical techniques or basic research

b) Research in basic sciences related to GI surgery e.g. Pathology, Immunology, Physiology.

c) Should preferably write at least 2 research papers out of which one should be on clinical aspect and one on experimental or basic research.

#### 4. Training in allied subjects:

- a) Interventional GI radiology and Ultrasonography, CT intervention
- b) Diagnostic radiology- Angiography, CT, USG, Doppler, SPG, PTC, ERCP.
- c) Nuclear Medicine
- d) Pathology and Microbiology
- e) Biochemistry

a and b for 3 months

c, d, and e - 3 months Training to learn basic methodology and Liver interpretation.

A **log book** should be maintained by the candidate of the work done and should attain the target fixed by head of Department as per work load before the candidate is allowed to appear for the final examination.

#### **Training Programme**

- I. Clinical end operative teaching should be imparted by faculty member during round and operations.
- II. Common teaching programme with Medical Gastroenterology
  - a) Journal Club
  - b) Seminars
  - c) Weekly combined clinical and radiological meetings
  - d) weekly G I pathology meeting
  - e) Biostatistics and computers
  - f) Research methodology
  - g) CPC
- III. Lecture series - Practicing surgeons from institutions as well as from private sectors will be invited to share their expertise and guide on various specialised subjects.

IV . Monthly - GI Surgical forum. This is to interact with all the practicing surgeons and discuss clinical cases. This will be rotated in various hospitals.

**Basis of selection for MCh ( GI) course:**

1. M S General surgery or equivalent
2. State wide Open merit competitive examination conducted by Govt. of Maharashtra. Director of health services or MUHS as it is for other specialities.

**Scheme for examination (As per Direction No. 01/2008 dtd. 26/05/2008 & practical scheme is as per revised practical marksheet.)**

**Maharashtra Health University - Nashik**

**I BASIC SCIENCES AND PRINCIPLES OF GI SURGERY**

1. Anatomy - Gross and histological anatomy of the abdomen .and its contents including entire GI tract, Liver ( including segmental anatomy), Biliary tract, Pancreas, spleen, portal and Hepatic venous system.
2. Physiology - Normal function of GI tract and related organs including endocrine functions of gut and pancreas. Physiological basis of various tests to study these functions.
3. Pharmacology of drugs used in GI surgical disorders e.g to control acid secretion in the management of ulcerative colitis and immuno-suppressive drugs.
4. Fluid -electrolyte and acid base disturbance- general aspects , imbalance in GI surgical patients Physiological responses to volume and osmolalty abnormalities, Interpretation of blood gas analysis, maintenance and replacement therapy.
5. Nutritional considerations in GI surgical patients.- Nutrient stores and Body compositions, Nutrient requirements, Mal nutrition, Evaluation of nutritional status., Nutritional therapy, enteral and parenteral therapy and complications of these.
6. Wound healing- Principles, Phases, types of healing, influencing factors on wound healing, wound dehiscence and management.

7. Principles and disorders of hemostasis.
8. Immunology in GI surgery. Especially in relation to organ transplantation.
9. Elements in Biostatistics.- Mean, Median, Mode, measures of central tendency, types of distribution, tests of statistical significance, confidence intervals, sensitivity, specificity & accuracy of tests.
10. Medicolegal aspects and Consumer protection act

## II. CLINICAL SURGERY

1. Oesophagus - Inflammatory and Peptic disorders, Strictures, Motility disorders, Hiatus hernia, Injuries, malignant tumours.
2. Stomach and duodenum. Peptic ulcer disease, Benign and malignant tumours, Obstructive disorders. ( Gastric outlet obstruction and volvulus of stomach), complications specific to gastric surgery.
3. Small Intestine- Fistulae, short bowel syndrome, mesenteric vascular ischemia, tuberculosis, benign and malignant tumours.
4. Colon, rectum and anus : diagnostic procedures, disorders of motility-constipation, diarrhoea and incontinence, ileus, trauma, pseudo-obstruction, mega colon, large bowel obstruction, polyps, lower GI bleed, carcinoma, infectious disorders, inflammatory disorders, volvulus, disorders of anorectum (haemorrhoids, fissure, abscess, fistulae and prolapse)
5. Liver - Liver biopsy, Benign and malignant tumours, hepatic abscesses and cysts, portal hypertension,( anatomical considerations, etiology, prognosis, clinical findings, methods of controlling acute haemorrhage, shunt and non-shunt procedures, hypersplenism) , Principles of liver resection, ascites (patho-physiology and management), Hepatic venous outflow obstruction, transplantation & trauma.
6. Gall bladder & Extra hepatic biliary system- Radiological diagnostic procedures, etiopathogenesis of gall stones, cholecystitis, Post cholecystectomy syndrome, choledocholithiasis, primary sclerosing cholangitis, biliary fistulae, neoplasms, biliary atresia, choledochal cysts, trauma & bile peritonitis.
7. Pancreas - Tests for pancreatic exocrine function, Acute and chronic pancreatitis with complications, pancreatic injuries, pancreatic and periampullary malignancies including islet cell tumours.

8. Spleen- Indications for splenectomy, hypersplenism, rupture (traumatic, spontaneous & its management), complications of splenectomy including OPSI.
9. Abdominal wall hernia- Basic features, types and their management.
10. Peritoneum, omentum and mesentery- Peritonitis, Intra & retroperitoneal abscess, & omental and mesenteric cysts.
11. GI & Biliary fistulae- Definition, etiology, complications, types, classification, evaluation, management & results.

### III RECENT ADVANCES, EMERGENCY SURGERY & PRACTICAL SURGERY:-

1. General principles of GI surgery- Access to the abdomen & lower chest, exploratory laparotomy, intestinal & vascular anastomosis.
2. Operating room techniques- sterilisation of instruments, aseptic techniques, designs of an operation theatre.
3. GI Surgical tubes- post operative drainage tubes, conditions requiring drainage, caveates, complications and removal.
4. Surgical infections and management
5. Postoperative complications
6. Emergency management of common life-threatening disorders. - Duodenal, small and large bowel perforations, Intestinal obstruction, volvulus, upper and Lower GI bleed, Cholangitis, abdominal trauma.
7. Endoscopy - Upper GI endoscopy, ERCP, enteroscopy, choledochoscopy, sigmoidoscopy and colonoscopy
8. Laparoscopy and laparoscopic surgical procedures.
9. Operative techniques
  - Oesophagus- repair of hiatus hernia, management of achalasia, total oesophagectomy, gastric and colonic pull - up.
  - Stomach and Duodenum - Operations for benign and malignant gastric ulcer. Operations for complications of chronic duodenal ulcer, types of vagotomy, types of gastrectomy, replacement procedures for stomach, remedial procedures for post-gastric surgery complications.
  - Types of gastrostomy, ileostomy and colostomy- management, methods of closure and complications
  - Drainage of intraabdominal abscess

- Portal hypertension - Leinorenal shunt, portacaval shunt, mesocaval shunt, devascularisation and splenectomy
- Splenectomy
- Liver - Management of hydatid cyst, injuries and hepatic resection.
- Biliary tract - Cholecystectomy - (Laparoscopic and open), CBD exploration, Bilioenteric bypass procedures, Operations for carcinoma gall bladder and cholangiocarcinoma
- Pancreas - Pancreatico jejunostomy, Whipples procedure, distal pancreatectomy, operations for pseudocysts, pancreatic necrosis and abscess.
- Peritoneo venous shunts, mesoatrial shunts
- Minilaparotomy
- Large Intestine - hemicolectomy and pancolectomy, Mucosal proctectomy and ileoanal anastomosis , Anterior resection and Abdomino-perineal resection.

10. Transplantation - Liver, pancreas and small bowel

11. Use of staplers in GI surgery

12. Use of RFA and lasers in GI surgery.