DM (MEDICAL GASTROENTEROLOGY)

[Syllabus Approved by Board of Studies, Medical & Health Sciences]

Programme Code	:	HLTH10A03
Programme Details	:	DM MEDICAL GASTROENTEROLOGY
Programme Learning Outcomes (PLOs/PSOs)	:	ANNEXED IN THE BELOW FORMAT
Eligibility Criteria	:	**AS PER NMC NORMS**
Duration of the Course	:	3 YEARS
Programme Structure (Credit-Based)	:	NA
Detailed Course Syllabus	:	ANNEXED IN THE BELOW FORMAT
Teaching–Learning Methodologies	:	3 YEARS RESIDENCY PROGRAM
Examination & Evaluation System	:	ANNUAL APPRAISALS FOLLOWED BY FINAL YEAR EXAMINATION AS PER NMC NORMS
Internship / Project / Dissertation Guidelines	:	1 YEAR MANDATORY BOND
Program In Charge	:	HEAD, DEPT OF DIGESTIVE DISEASES & CLINICAL NUTRITION Coordinator: Dr. Aditya Kale adityapkale@yahoo.com
Annexure (Books / Journals etc)	:	ANNEXUED

D.M. (MEDICAL GASTROENTEROLOGY)

Program Code: HLTH10A03

Program Outcome:

- At the end of the DM course in Gastroenterology, the student should be able to: Practice the specialty of gastroenterology in keeping with the principles of professional ethics;
- The student should be able to identify social, economic, environmental, biological and emotional determinants of adult gastroenterology diseases and know the therapeutic, rehabilitative, preventive and promotion measures to provide holistic care to all patients;
- The student should be able to take detailed history, perform full physical examination and make a clinical diagnosis; Perform and interpret relevant investigations (Imaging and Laboratory); Perform and interpret important diagnostic procedures; Diagnose gastroenterological illnesses in adults based on the analysis of history, physical examination and investigative work up;
- The student should be able to plan and deliver comprehensive treatment for illness in adults using principles of rational drug therapy;
- The student should be able to manage gastroenterological emergencies efficiently
- The student should be able to plan and advise measures for the prevention of gastroenterological diseases;
- The student should be able to demonstrate empathy and humane approach towards patients and their families and respect their sensibilities; Demonstrate communication skills of a high order in explaining management and prognosis, providing counselling and giving health education messages to patients, families and communities.

Program Specific Outcome

- The aim is to teach the student to develop skills as a self-directed learner, recognize continuing educational needs; use appropriate learning resources, and critically analyze relevant published literature in order to practice evidence-based medicine;
- Demonstrate competence in basic concepts of research methodology and epidemiology;
- The programme would teach the student to facilitate learning of medical/nursing students, practicing physicians, para-medical health workers and other providers as a teacher-trainer;
- The programme would teach the student to function as a productive member of a team engaged in health care, research and education.

DETAILED SYLLABUS

DEPARTMENT OF DIGESTIVE DISEASES AND CLINICAL NUTRITION

Speciality Training Curriculum

For

DIGESTIVE DISEASES

Luminal Gastroenterology, Hepatology, Biliary and Pancreatic Diseases, Gastrointestinal Oncology, Liver transplant, Endoscopy, Clinical Nutrition

INTRODUCTION

- Gastroenterology is one of the major specialties of internal medicine. The specialty has grown incredibly fast over the past 30 years.

- Several factors that have led to the substantial growth of gastroenterology as a specialty include, the increasing application of endoscopic and radiological intervention to replace surgery, specialized non-surgical therapies for inoperable bowel cancers and liver diseases, development of liver transplant and the need to liaison with surgeons, radiologists, nurse specialists, nutritionists, pathologists and oncologist for successful treatment of such patients. In addition, a number of subspecialties of gastroenterology are now evolving such as pediatric gastroenterology, hepatology, liver transplantation and digestive oncology.

- Diagnosis in gastroenterology requires a combination of the use of fundamental clinical skills along with very complex investigational approaches both radiological and endoscopic, thereby making it challenging branch to practice. While most gastroenterologists provide a broad, comprehensive service, there is a perceived need for some clinicians in the speciality to deliver a high quality service in very specific areas.

- This curriculum has been drawn to meet the above challenges and is focused towards all round development of basic skills and competencies in gastroenterology.

- The purpose of this curriculum is to define the process of training and the competencies required for safe and successful specialist practice in digestive disorders at basic level at also prepare trainees for sub-specialities if they wish to pursue it in future.

KEY FEATURES OF CURRICULUM

1. **Enhanced disease-specific training:** Focused training blocks in specific disease areas, such as motility and functional disorders, advanced inflammatory bowel training, digestive oncology, advanced endoscopy, pediatric gastroenterology (if available) and transplant hepatology will be made available during and the basic three year course.

2. **Endoscopy Training:** Competency based endoscopy training includes in depth training in diagnostic and basic therapeutic endoscopy skills and patient care along with and setting up and management of endoscopy suite and broad training with future prospect of a career in advanced endoscopy based on aptitude and skills. Technical and cognitive milestones will be periodically assessed using standard assessment parameters.

3. **Ancillary skill training:** Practical skills required to optimize patient care including basic and advanced clinical nutrition, stoma care and venous insertion device care. A basic course in research methodology and epidemiology (public health) is also provided to cover up for lack of training opportunity during undergraduate and broad speciality training.

TRAINING EXPOSURE

The program consists of four main pathways of learning: clinical activities, procedural training, didactic learning and research experience. Trainees and faculty are expected to follow and complete the curriculum set for a particular year of training (as per the year-wise syllabus described) within this framework in order to ensure completion of training.

Academic Exposure

- Specialty out-patient clinics, indoor care and ward rounds, MDT meetings, grand rounds and mortality meetings: trainees are expected to attend and contribute towards the same. After initial induction, trainees will review patients in outpatient clinics and in-patients under direct supervision of training faculty. The degree of responsibility taken by the trainee will increase as competency increases.
- Formal Didactic Teaching: Case presentations, seminars, journal clubs, landmark studies, evidence based management, Health Technology Assessments.
- Training in endoscopy and other Procedures: The trainee will maintain a log of each procedure performed. A six monthly appraisal will be conducted by the trainers for endoscopy training.
- Rotations in all sub-specialties in digestive diseases: A system of Inter-Hospital Rotation will be used to provide basic training in sub-specialty areas such as hepatology, transplantation, IBD and motility disorders. This will be facilitated by the inter-institutional MOUs.
- Clinical research training, audits and research projects:: A dedicated block for clinical research methodology course in included in the first year curriculum to develop understanding of project design, protocol development, basics of biostatistics, manuscript writing, grant writing and bioethics of research. This has been incorporated in the curriculum to fulfill the deficiency in training at undergraduate and broad specialty levels of training. Second and third year residents will engage in clinical research projects that will result in the preparation of at least one abstract for a national meeting and preparation of a manuscript to be submitted for publication. In addition, trainees will participate in audits which contribute to patient care. Thesis will be completed and submitted to the university at end of 3 year training. Information generated during the research years will be presented at academic and national meetings.
- Attendance at society and other educational Meetings: Each 2nd and 3rd year trainee will be encouraged to attend and present their research at a minimum of one national conference. . In addition, trainees may also attend conferences in which they are presenting research work or any other relevant educational courses approved by the program in-charge .

Mentorship and Career Development

- Trainees will be mentored by department faculty and also encouraged to interact with national and international faculty at meetings to broaden their perspective. and help them plan future career goals and job opportunities. In addition to this guidance faculty can provide input in up-gradation of training infrastructure for basic training and also for development of specific sub-specialty training units in HBNI and in the country.

- **Competency development and evaluation**

    - A detailed competency development guide for both generic competencies and core competencies is being drawn up. Periodical assessment and annual appraisals will be done. More details of the format has been described in the section on "Trainee Competency Development" .

▪ ORIENTATION/INDUCTION PROGRAMME FOR NEW TRAINEES

(A half day orientation will be held by the department within the first two to six weeks of joining)

- The orientation will familiarize the trainee with activities of the department and those of allied departments.

- Orientation topics include but are not limited to:
    a. Overview of program
    b. Introductions of faculty and trainees
    c. Tour of key clinical and research areas.
    d. Review of clinical rotation schedules: Intra-department, inter-department and inter-hospital exchange program.
    e. Financial and leave allowance information.
    f. Appraisal process and schedule.
    g. Academic Meeting and national Conference information.
    h. Distribution of keys, phone, pagers.
    i. Instructions for attendance and accommodation facilities.
    j. Special topics: Clinical Ethics, DNR and autopsy policies.

All the above is described in the Residents Manual (under preparation).

▪ OVERVIEW OF PROGRAM: SUBJECTS INCLUDED IN 3 YEAR FOUNDATION COURSE

1. Main Subjects

a. Luminal Gastroenterology including neurogastroentrology and motility

b. Hepatology

c. Biliary and Pancreatic diseases

d. Basic Endoscopy

2. Sub-specialty : Basic Training to Prepare to Future Sub-specialty Tracks

a. Liver transplant

b. Gastrointestinal Oncology

c. Pediatric and Geriatric Gastroenterology

d. Advanced Endoscopy

3. Ancillary Courses (Compulsory)

a. GI and liver pathology

b. GI imaging

c. Clinical Nutrition

d. Allied Clinical Experience: Catheter care, stoma care, consequences of abdominal surgery, management of end-stage digestive diseases.

e. Clinical Research Methodology

f. Epidemiology and Public health related to digestive diseases

g. Basic Sciences: Genetics, Molecular biology

SUBJECT: YEARWISE DISTRIBUTION OF TEACHING PROGRAM

1st Year Resident :

1. **Basics Gastroenterology**
   (Anatomy, Physiology Approach to GI symptoms & symptom complexes)
2. **Luminal Gastroenterology**

Part - I : Foregut diseases Esophagus, Stomach Functional and Motility disorders of entire GIT]

3. **Mobility Procedure Training**
   Part - I : Level-1 and Level-2

4. **Paediatric Gastroenterology**
   Part - I : Luninal GI (UGIT and LGIT)

5. **GI Oncology**
   Part - I : Basic Approach
   Part - II : Foregut Tumors & GI Lymphomas

6. **Clinical Nutrition**
   Part I : Basic

7. **Applied (related) Pharmacology - I**

8. **Clinical Research Methods, Bio-Statics & Epidemiology – I**

9. **Clinical Research Methods, Bio-Statics & Epidemiology – II**

10. **Endoscopy – I**
    (Basic Skills UGI, sigmoidoscopy, NGT Placement)

11. **Day to Day : Clinical Care and Community Outreach**
    (Diagnostic Tests Radiology IV access, enteral access, Stoma care, palliative care, familial diseases)

12. **Research**
    (Dissertation Planning Small Projects / Audits)

2nd Year Resident :

1. **Luminal Gastroenterology**
   Part - II : Mid and Hindgut diseases Small Bowel Large Bowel

2. **Hepatobiliary and Pancreatic diseases**
   Part - I : Hepatology, General Topics, Basic Sciences

3. **GI Oncology**
   Part – III : Lower GI tumors
   Part – IV : Liver Cancer

4. **Clinical Nutrition**
   Part - II : Advanced

5. **Applied (related) Pharmacology - II**

6. **Clinical Research Methods, Bio-Statics & Epidemiology – III**

7. **Endoscopy – II**
   (Intermediate skills : Colonoscopy, PEG, Hemostasis (EVL, injection), dilatation, Assist in luminal stenting, DBE, NJT placement)

8. Day to Day : Clinical Care and Community Outreach
(GI Consults – hepatobiliary)

3rd Year Resident :

1. Hepatobiliary and Pancreatic diseases
Part - II : Biliary, Pancreatic diseases
Liver Transplant Rotation

2. Paediatric Gastroenterology
Part – II : Specific HPB Disease and
Pediatric Transplant Related Issues

3. GI Oncology
Part – V : BP Cancers, Retroperitoneal Tumors, GIST

4. Applied (related) Pharmacology - III

5. Endoscopy – II
(Higher Skills Side viewing endoscopy, Luminal stenting, polypectomy, EMR EUS- indications and basic interpretation ERCP assisting)

6. Day to Day : Clinical Care and Community Outreach
(GI Consults – hepatobiliary)

7. Research
(Dissertation Submission)

▪ CLINICAL ROTATIONS

Clinical Training	Length (Months)		
	1st Yr	2nd Yr	3rd Yr
Luminal GI: in – patients	4	3*	4
Luminal GI: OPD clinics			
HPB: OPD clinics	4	3*	4
HPB: in – patients			
Liver transplant*	0	0	2*
GI oncology including EUS observation*	0	3*	0
Pediatric Gastroenterology*	0	2	0

Nutrition*	1	0	0
Catheter Clinic*	0.5*	0	0
Stoma Clinic*	0.5*	0	0
Radiology	1	0	0
Motility Clinic and pH Monitoring*	0.5#	0.5#	0
Epidemiology intensive Block	0	0.5	0
Palliative Care	0.5	0	0
Clinical Research Methodology**$**	2 days	2 days	0
Sedation (anesthesia posting)	0.5	0	0
Vacation	0.5	0	1- study leave

*** : Specialty Rotations**

 # : Can be clubbed into continuous 1 month training

$: Weekend intensives

▪ TEACHING STRATEGY

FIRST YEAR

Part- I – Basic Sciences and Allied Clinical Training

I. Basics in Gastroenterology

Theory

- Applied and Integrated Anatomy
- Applied and Integrated Physiology
- Applied Pharmacology: Drug in IBD, IBS, chemotherapy of foregut malignancy, enteral and parenteral formulae

Practical

- Analysis of symptoms and symptom complexes

II. Basics Investigation in Gastroenterology :

Theory

- pH monitoring, H Pylori tests
- Malabsorption Tests
- Normal Pathology of Digestive tract
- Molecular Pathology and applied techniques

Practical

- Clinical case studies, practicals for sampling errrors and interpretation of results.
- Demonstration and recognize normal histology, abnormal GI and liver pathology, aspiration cytology

III. Basic Sciences: Gastrointestinal Cellular and Molecular Physiology :

Theory

- General concepts: Molecular biology/ Techniques/ Testing, Genetics, Cell biology, Pharmacology and cellular signaling, Host environment interaction, Immunology, Genetics,

Practical

- Molecular Techniques/Testing: HTA

IV. Imaging of the Gastrointestinal Tract

Theory

- Barium studies, Enteroclysis USG, CTscan, MRI, Bioimaging (PET, SPECT)
- Virtual imaging Specific aspects related to the diseases of GI tract

Practical

- Orientation and image interpretation during the radiology posting
- HTA

V. Allied Clinical Training: Stoma Care, Catheter Care, End-stage Care :

Theory

- Enterostomies- complications, diet, home care and counseling
- IV Access Catheter insertions and care
- Enteral access devices, counseling and care
- Palliative care- palliation of GI symptoms in end stage digestive diseases and GI cancers, familiarity with, and at least limited experience with stenting, pain control, hospice and home care in advanced and terminally ill patient
- GI and related interventions: obtaining consent, benefits and risks of procedures, post procedure care, treating complications, delayed sequele of therapy

Practical

- Procedures: paracentesis, pleural tappings, liver biopsy, FNAC of cervical nodes and superficial lumps, bone marrow exam. Each procedure must be prepared for discussion by the trainee
- In addition, practical sessions and clinical exposure obtained during dedicated rotation
- Assessment of this must be included in the appraisal

VI. Basic in Biostatistics and Clinical Research Methodology

Theory

- Sampling: concept of population and sample and need for statistics, random sampling, standard error, confidence intervals
- Properties of "Normal and Gaussian Distribution" Curve
- Types of Data: Paired unpaired; categorical continuous; numerical data (discrete & continuous), bar charts, histograms
- Comparing mean and median: χ student "t" test etc.
  Measurement and tests of association between variables: correlation and regression scatter plots, sensitivity and specificity, positive and negative predictive value

Practical

- Assessment of quality of a clinical trial- exercises
- Guidelines for authorship and disclosures

Part-II: Digestive Diseases

I. Luminal Gastroenterology, Public Health related disorders, Women's Digestive Health:

Theory

- Functional, and Motility Disorders and Foregut diseases
- GI inflammation, enteric and infectious Diseases
  a. adult and Pediatric, HIV, Iflammatory Bowel Disease (IBD) - it includes immunology, microbiology, and molecular biology aspects of these diseases.
  b. Develop skills for long term care of these patients, especially IBD patients Public health aspects of Infectious and diarrhoeal, diseases in India
- "Tropical digestive diseases"
- Specific issues in women's digestive health: in general and related to Pregnancy and childbearing

Practical

- Observe/ assist motility related procedures like manometry, pH metry, biofeedback etc.

II. Basics of Oncology Care

Theory

- Principles of staging of cancers
- Assessment, Investigations (tumor markers, imaging, metastatic workup, nodal stations),
- Joint clinic forum (outline of Rx plans), symptom control, reviews and treatment checks, follow up
- Principles of adjuvant, neo-adjuvant and palliative therapy and Multimodality therapy
- Sequele of chemotherapy, radiation, surgery
- Counseling: informing diagnosis, treatment plan,
- Rehabilitation- fertility, organ removal
- Cancer survivorship

Practical

Nil

III. GI Oncology – Part-I

Theory

- Early GI cancers : Recognition, Polyps, pre-neoplastic lesions
- Polypectomy, screening and surveillance
- Differentiating benign from malignant strictures
- Surveillance for IBD
- Familial GI cancer syndromes and related genetic/molecular testing
- Upper GI Cancers: Esophagus, Stomach, NHL
- Pathology, tumor staging, familial cancers, prognostic factors, management, surgery, drug therapy (cytotoxic chemotherapy and targeted therapy), palliative therapy, prevention and public health issues, early diagnosis and referral

Practical

- Basic knowledge about Landmark articles and chemotherapy protocols.
- Seeing OPD patients.

IV. Geriatric Gastroenterology

Theory

- Normal function, drug metabolism/elimination, nutrition, specific GI conditions in the elderly.

Practical

Nil

V. Pediatric Gastroenterology – Part-I

- General concepts and the unique aspects of pediatric GE luminal pediatric GE, Foregut diseases

Practical

- Case presentations

Part-III: Preparation for Research

Concept Sheet

Fellows are required to propose a hypothesis-based research project in any clinical area of their interest after discussing with their mentor in the form of a 2-3 page concept sheet before the final quarter of their first year of training. This concept sheet will be discussed in the department and DMG and then converted to a protocol which will be submitted to the IRB for approval and includes :

1. Title of the proposal
2. Mentor: a faculty member (Principal Investigator)
3. Backgound information
4. Specific research plan, aims and objectives, study design, methods, sample size and statistical plan, as appropriate.
5. References.
6. Significance to Gastroenterology
7. Timeline for completion of the project.
8. Source of proposed funding for this project

SECOND YEAR

Part- I – Basic Sciences and Allied Clinical Training

I. Basics in Gastroenterology

Theory

- Applied and Integrated Anatomy – liver, portal circulation, abdominal vascular anatomy, bile duct, pancreas mid and hindgut, Anorectum Applied and Integrated Physiology
- Applied and Integrated Physiology – liver, biliary, pancreas
- Applied Pharmacology: Drug in liver, biliary and pancreatic diseases, PHT, foregut oncology, GI emergencies

Practical

- Analysis of symptoms and symptom complexes

II. Basics Investigation in Gastroenterology

Theory

- Normal Pathology of Liver, Bile ducts and pancreas
- Molecular Pathology and applied techniques

Practical

- Normal and abnormal liver, bile ducts and pancreatic pathology
- Foregut tumor pathology including molecular path

III. Basic Sciences: Gastrointestinal Cellular and Molecular Physiology :

Theory

- Specific molecular & genetic tests used in digestive diseases

Practical

- Demonstrate Molecular Techniques/Tests.
- HTA

IV. Imaging of the GI Tract

Theory

- Angiography: CT, MRI, DSA
- Assessment of Liver volume
- Detailed evaluation of Intra and extra hepatic BD
- Detailed pancreatic anatomy and its relation Pelvic MRI

Practical

- Orientation and image interpretation during the radiology posting
- Use 3-D Anatomy Modules
- HTA

V. Allied Clinical Training: Digestive Tract Surgery – Bowel, Liver, Portal HTN, Emergency

Theory

1. Digestive Surgery: Bowel and Liver resection
    - Basic knowledge of surgical anatomy, especially relationships of ductile, vascular and luminal structures
    - Endoscopic vs. interventional radiology vs. surgical procedure and when to pursue which one
    - Indications and contraindications for surgery, bowel and liver resection
    - Post-op care of patients after major and minor procedure
    - Recovery and rehabilitation after major abdominal surgery
    - Morbidity and management of post resection nutritional deficiencies and bowel disturbances
    - Long –term rehabilitation after organ removal
    - Pre-anesthesia Risk evaluation: Anesthesia, analgesia, sedation – in deranged liver Profiles
2. Emergencies in GE and Hepatology

Practical

- Each topic must be prepared for discussion by the trainee
- In addition, practical sessions and clinical exposure obtained during dedicated rotation
- Assessment of this must be included in the appraisal

VI. Basic in Epidemiology, Public Health and Database Management :

Theory

- Principles of statistical inference: hypothesis testing, sample size, Type I and II errors, interpretation of p-values, statistical and clinical significance.
- Survival analysis in cancer: types of time-to-event data, Kaplan Meier and Acturial Survival curves
- Comparing groups: log-rank test, use of Cox's proportional hazards regression model, hazard ratio, and their interpretation
- Clinical Trial Methodology: Phase I-IV trials, randomization and stratification methods, problem of non-randomized studies and historical controls, blinding/masking, design of clinical trials, content of trial protocol, ethics and informed consent, sample size calculation, interim analysis
- Measures of Response; Tumor regression, morbidity, local-regional recurrence, distant mets, death, quality of Life, intention to treat analysis
- Epidemiology: retrospective case- control studies, prospective cohort studies, Odds ratio and relative risk, mortality rates, cancer registration and follow –up, trends in cancer incidence Multivariate analysis, Meta-analysis and Systematic Reviews.

Practical

- Acturial Survival curves for a given data set
- Estimating sample size for a given type I and II error
- Information management: retrieving data from the internet, Medline, PubMed, Cochrane Data base searches
- Medical Writing: research articles for scientific journals
- Research Proposal: Designing a research study and protocol writing
- Designing and writing protocols for phase I, II and III studies
- Multivariate analysis
- Meta-analysis and Systematic Reviews
- Relational Databases and use of MS Access

Part-II: Digestive Diseases

I. Luminal Gastroenterology

Theory

- Diseases of mid and hind gut
- Anorectal disorders – adults and children

Practical

- Observe/ assist motility related procedures.

II. Hepatology

Theory

- Viral Hepatitis
- Drug induced LD
- CLD, Cirrhosis
- Portal circulation and portal HTN

Practical

- Observe and review fibroscans.

III. GI Oncology Part II

Theory

1. Risk evaluation, screening and surveillance in GI cancers
2. Mid and Hind gut cancers: small bowel, colon rectum and Liver cancers and hepatoblastoma : Pathology, tumor staging, familial cancers, prognostic factors, management, surgery, drug therapy (cytotoxic chemotherapy and targeted therapy), palliative therapy, prevention and public health issues

Practical: Nil

IV. GI Oncology Part II

Theory

- Luminal pediatric GE of mid and hind gut
- Pediatric liver, Biliary and Pancreatic diseases

Practical

- Case presentations

THIRD YEAR

PART I – BASIC SCIENCES AND ALLIED CLINICAL TRAINING

- **Basic in Gastroenterology**

Theory

- Applied and Integrated Anatomy – liver, portal circulation, abdominal vascular anatomy, bile duct, pancreas mid and hindgut, Anorectum
- Applied and Integrated Physiology – liver
- Applied Pharmacology: Drug in liver diseases, PHT, foregut oncology, GI emergencies

Practical

- Analysis of symptoms and symptom complexes

- **Basic Investigation in GE**

Theory

- Pathology Tumors: bile duct, pancreas, GIST, Retroperitoneal tumors

Practical

- Tumor pathology including molecular path

- **Imaging of the GI Tract**

Theory

- Applied Radiology: related to therapy planning
- CT, MRI, DSA, angiograms
- Assessment of Liver volume

Practical

- Orientation and image interpretation during the radiology posting

- **Allied Clinical Training: Digestive Tract Surgery – Bowel, Liver, Portal HTN, Emergency Mx**

  Theory

  - Digestive Surgery: Bowel and Liver resection

  Practical

  - Long Case presentations based on theory knowledge learnt in first and second year. Assessment of this must be included in the appraisal

- **Dissertation and Research Project Evaluation**

- **Luminal Gastroenterology**

  Theory

  - Diseases of bile ducts and pancreas- adults and children

  Practical : Nil

- **Hepatology**

  Theory

  - Viral Hepatitis
  - Drug Induced LD
  - CLD, Cirrhosis
  - Portal Circulation and Portal HTN

  Practical : Nil

- **GI Oncology Part II**

  Theory

  - Risk evaluation, screening and surveillance in GI cancers
  - Mid and Hind gut cancers: small bowel, colon rectum and Liver cancers and hepatoblastoma : Pathology, tumor staging, familial cancers, prognostic factors, management, surgery, drug therapy (cytotoxic chemotherapy and targeted therapy), palliative therapy, prevention and public health issues

  Practical : Nil

- **Miscellaneous**

Theory

- Investigational techniques in clinical and laboratory
- HTA and outcome measures
- Economics in Gastroentrology and GI endoscopy
- Setting up of GI Endoscopy, Liver Transplant and GI oncology and Nutrition therapy units

▪ ENDOSCOPY SYLLABUS: Diagnostic and Basic Therapeutic Endoscopy Training

Educational Goals

- Learn the proper indications, contraindications, special needs, and procedural preparations for diagnostic and therapeutic gastroenterology procedures.
- Understand the role of endoscopic management in a multidisciplinary approach to various patient disorders and problems
- Practice detailed informed consent and informed refusal: Learn to interact effectively with patients and families to communicate the purpose of procedures and their results, and complications of procedures if necessary.
- Understand the system under which outpatient and inpatient endoscopic procedures are provided and collaborate with other team members in helping patients effectively negotiate the system.
- Learn management of an endoscopy unit: set-up of endoscopy suite, its management issues, learn the role and function of other members of the endoscopic procedure team and to interact effectively with other members of the endoscopy suite team in order to optimize patient care and co-ordinate working.
- Learn how to safely administer conscious sedation to provide for patient comfort during procedures, and when general anesthesia is appropriately indicated.
- Learn appropriate endoscopic surveillance regimens for various forms of upper and lower endoscopic pathology.
- Correlate visual and pathologic findings at endoscopy with clinical conditions.
- Identify areas of personal deficiency in skill and knowledge in the performance of endoscopic and other core procedures. In gastroenterology and hepatology and develop and implement strategies for correcting these deficiencies.
- Learn to identify procedure complications and formulate strategies for avoiding those complications.
- Learn to formulate comprehensive, clear and concise procedure reports to referring physicians and image capture.

- Identify and understand risk management issues in the performance of endoscopic procedures.

Achieve technical competence in the performance of Gastroenterology core diagnostic and basic therapeutic procedures - should be able to perform :

1. By Completion of First Year

a. Diagnostic Esophago-Gastro-Duodenoscopy to the second portion of the duodenum

b. Diagnostic sigmoidoscopy

c. Diagnostic Colonoscopy to the cecum with limited assistance.

2. By Completion of Second Year

a. Gain proficiency in all Year I upper endoscopic skill requirements. Additionally, begin to develop competency in performing therapeutic procedures like banding of varices, injection therapy and thermal coagulotion of bleeding vessels, luminal dilatation, enteral access (NGT, NJT)

b. Gain proficiency in all Year I colonoscopic skill requirements. Additionally, perform cold snare polypectomy of small polyps, dilatations and thermal coagulotion of bleeding vessels.

3. By Completion of Third Year

a. Gain proficiency in gastroscopy and colonoscopy.

b. Perform side viewing scope to identify the papilla or lesions difficult to observe with forward viewing scope

c. Perform advanced maneuvers, such as placing clips on bleeding vessels or argon plasma laser coagulation**, and EMR**

d. Learn the unique functions of the procedure assistant especially ERCP and therapeutic EUS.

e. Expand clinically applicable knowledge base of biliary/pancreatic disorders, including patient's tolerance of ERCP in their management.

f. Expand clinically applicable knowledge for endoscopic ultrasound with respect to indication and application of the procedure for maximal impact on patient care.

Basic Endoscopy Training Yearwise Schedule

First Year Basic Skills	Second Year Intermediate Skills	Third Year Introduction to Advanced Skills	Objective performance criteria after prescribed numbers performed
General Aspects			
1. Obtaining consent for different endoscopy procedures 2. Infection control, universal precaution, cleaning and disinfection of endoscopes, reuse of accessories 3. Image capture, reporting of endoscopy procedures, endoscopy database 4. Preparation for UGI, LGI endoscopy, ERCP 5. Pre and Post Procedure care	1. Sedation and Monitoring 2. Quality Assurance in endoscopy	1. Setting up an endoscopy unit 2. Cost- evaluation in endoscopy	Appraisal evaluation
Procedures to be Performed			
1. UGI endoscopy examination 2. Sigmoidoscopy 3. Simple therapeutic procedures- enteric access - NGT insertion and luminal dilation 4. Hemostasis	Diagnostic Colonoscopy Polypectomy Esophageal Bougie Dilation Enteral Access: NJT Variceal therapy PEG	a. Sideviewing scopy b. Chromoscopy NBI, FICE, iScan etc. c. Luminal stents d. Pyloric and colonic dilation Capsule endoscopy and its interpretation EUS indications and image interpretation, applications(optional) ERCP if likely to pursue second tier in hepatology	1. Intubations of different areas 2. Recognition of normal / abnormal 3. Appropriate knowledge and treatment of findings See details for endoscopy appraisal Appraisal to be taken for procedures observed

Basic Endoscopy Training Year wise Schedule

First Year Basic Skills	Second Year Intermediate Skills	Third Year Introduction to Advanced Skills	Objective performance criteria after prescribed numbers performed
Procedures to be Observed/Assisted			
1. Observation of colonoscopy and management of loop reduction 2. Theory pertaining to and practical assistance for higher procedures: PEG, APC, luminal stenting, hot biopsy polypectomies	ERCP EUS Enteroscopy Capsule Endoscopy 3. Diagnosis of early cancers and chromoendoscopy	ERCP: applications, complications, post-procedure management, discharge, re-interventions, interpretation of ERCP images. EUS observation and image interpretation, learning indications and applications Animal / mechanical Model training if available: ERCP, EUS, EMR, ESD Enteroscopy	Appraisal to be done for procedures observed Conduct teaching program of Nurses and Technicians

MINIMUM NUMBER OF ENDOSCOPY PROCEDURES PERFORMED INDEPENDENTLY TO BE ELLIGIBLE FOR COMPETENCY EVALUATION

Sr. No.	Procedures	ACGME Procedure Requirement	Proposed at HBNI
1.	Esophagogastroduodenoscopy	130	200
2.	Flexible Sigmoidoscopy	025	025
3.	Colonoscopy	140	150
4.	Colonoscopy with Polypectomy	030	015
5.	Esophageal Dilation	020	025
6.	Wire Guided Enteral Access- NGT, NJT	-	NGT- 10, NJT- 10
7.	Variceal Hemostasis	20 cases, including 5 active bleeders	25 cases including 5 active bleeders
8.	Nonvariceal Hemostasis (upper & lower)	25 cases, including 10 active bleeders	25 cases including 10 active bleeders
9.	Side-viewing endoscopy and biopsy		010
10.	Other Diagnostic & Therapeutic Procedures Utilizing Enteral Intubation (Enteroscopy, Ileoscopy)	010	010
11.	Video-capsule endoscopy	010	010
12.	Luminal Stenting	-	005
13.	Percutaneous Endoscopic Gastrostomy	020	025
14.	Conscious Sedation	-	050
15.	ERCP Basic: observe and assist Advanced: Hands on training		Level 1: basic: 100 Level 2 Advanced : 100
16.	EUS Basic and advanced : observation	-	Mediastinal: 20 HPB: 20 Interventions 20
17.	Foreign body removal		005
18.	GI manometry and pH probe studies		010

NOTE:

The number of procedures given here, indicates the number to be performed before undertaking an assessment or appraisal. ACGME (The American Council for Graduate Medical Education) requires fellows to complete the specified number of procedures during the three training years. If there is no number provided in the following chart, this indicates that the ACGME does not require a specific number of these procedures. D.N. B has similar specification, although numbers may vary. The Society of GI Endoscopy of India and Indian Society of Gastroenterology do not have any guidelines for the same.

Proficiency is defined as understanding the clinical indications and contraindications, proper sedation techniques and intra-procedural monitoring, physical performance of the procedure, interpretation of abnormal and normal findings and proper post-procedural monitoring. Fellows are required to maintain a written log of each procedure performed, the date, patient identification, findings and comments and to submit procedure log forms to trainer.

Program directors/ Head of Departments will sign the procedure log. The endoscopy procedure log is given in log book format section. During each of these procedure log submissions, fellows are required to submit in the following format.

- All procedures submitted since the start of their fellowship with a numerical total of each type of procedure.
- All procedures submitted since the last procedure log submission, assessment and appraisal.
- Improvement in specific areas after last appraisal.

▪ PROFESIONAL COMPETENCY DEVELOPMENT AND ASSESSEMENT PARAMETERS

A detailed guide of competency development both generic and core competencies is under preparation. Competencies include both generic and core competencies as briefly outlined below

- **Development of Generic Competencies**

'Generic competencies' are the knowledge, skills, attitudes and behaviors (KSA) required by physicians in all medical specialties to practice effectively. Generic competencies are therefore based on *Good Clinical Practice.* All trainees will be assessed for these periodically. These are described in the table on page no 30. These include :

A. **Mandatory (Level 1) Competencies:** *Good Clinical Practice* that a trainee **must** have achieved by the end of this training and is mandate for his graduation.

B. **Desirable (Level 2) Competencies:** In addition, it is highly desirable that Specialist trainees demonstrate acquisition of further competencies termed in the domains of Good Clinical Practice. This will help trainees to grow develop from being 'competent' to becoming an 'experts.

- **Core Competencies in Gastroenterology**

Related to the speciality as proposed in the teaching strategy.

Generic Competency to be achieved during training

Focus Areas	Level 1 Mandatory CT Competency Areas	Level 2 Desirable CT Competency Areas
Good Clinical Care	1.1 History Taking	-
	1.2 Physical Examination	-
	1.3 Medical Record Keeping and Information Management Skills	-
	1.4 Diagnosis, Clinical Reasoning and Decision Making Skills	-
	1.4 Therapeutics and safe prescribing	-
	1.6 Time Management and Organizational skills	-
	1.7. Patient Centric service and Patient Education	-
	1.8 Patient Safety Concerns	-
	1.9 Infection Control	-
		1.10 Quality Improvement and Health Promotion
	1.11. Medical Ethics: Valid Consent	1.12. Medical Ethics and Legal Framework for Practice
		1.13. Managing Long Term Conditions & Promoting Patient Self- Care
Maintaining Good Clinical Practice	2.1. Medical Knowledge, evidence and guidelines	2.2. Clinical Audits
Communication Skills	3.1 Communication with Patients within a Consultation	3.2 Breaking Bad News 3.3 Complaints and Medical Error
Multidisciplinary Team Work	Working with Colleagues	-
Teaching and Training	Basic Teaching and Training skills	-
Professionalism	Professional Behavior	-
Research Ethics	Basic Ethics of Clinical Research	-

TRAINEE ASSESSMENT METHODS

Both generic and core competencies described will be assessed using "Workplace-based assessments" and examination of knowledge and clinical skills. The formal workplace-based assessment tools will include mini-CEX (mini- Clinical Examination) case based discussions (CBD) for clinical work, objective structure clinical examination (OSCE) for theoretical knowledge and DOPS (Direct Observation of Procedural Skills) for endoscopy and other procedures.

Mini-Clinical Evaluation Exercice (Mini-CEX)

- A method of assessment of skills essential for the provision of a good standard of clinical care. It will be done during monthly case presentations.

Case Based Discussion (CBD)

- This method is designed to assess clinical judgment, decision-making and the application of medical knowledge in relation to patient care in cases for which the trainee has been directly responsible. CBD is conducted during routine case discussions during the OP clinics and ward rounds.
- The method is particularly designed to test higher order thinking and synthesis as how trainees compile, prioritize and apply knowledge.
- By using clinical cases that offer a challenge to the trainee, rather than routine cases, the trainee is able to explain the complexities involved and the reasoning behind choices they made. It also enables the discussion of the ethical and legal framework of practice.
- It uses patient records as the basis for dialogue, for systematic assessment and structured feedback.
- As the actual record is the focus for the discussion, the assessor can also evaluate the quality of record keeping and the presentation of cases. Most assessments take no longer than 15-20 minutes.

Direct Observation of Procedural Skills (DOPS)

- This is used to assess the trainees' technical, operative and professional skills in a range of basic diagnostic and interventional procedures, or parts of procedures, during routine practice and will facilitate developmental feedback.

▪ TRAINEE APPRAISAL

- Log Book
- Endoscopy DOPS evaluation format
- Annual Appraisal review format

▪ Log Book

Enlists : details of case presentations during evaluations, seminars, journal clubs, meetings and conference attendances. A log of endoscopy procedures done and assisted will be maintained separately as described below.

▪ Endoscopy Procedure Evaluation

Method: Direct Observation of Fellow by Supervising Training Faculty

- The trainees performance will be evaluated periodically. Proficiency and competence in technique is based upon the observations from close supervision of the faculty in Endoscopy.
- Year I, II and III trainees will receive a focused direct observation evaluation of procedural competency for upper endoscopy and colonoscopy as per year of training. The evaluator will be the in-house consultant . The evaluation will take place as part of the routine endoscopy procedures scheduled.
- Given that competency develops over the three fellowship years, and certain aspects of procedural skills are learned with time, the task being evaluated is done according to the level of training expectation for each year. Related to the colonoscopy procedure, for example, insertion of scope into rectum should be achieved by all three years, whereas intubation of terminal ileum is expected only of Year III trainee.

▪ At the completion of the evaluation, the faculty will provide feedback with a remediation plan if needed.

- Certification of procedural competence requires maintenance of a procedural log book as per standard department format with details of cases including patient name, file numbers, diagnoses, procedure done, complications etc.