Curriculum

DrNB Super Specialty

Medical Gastroenterology

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I. PROGRAMME GOAL AND OBJECTIVES

1. PROGRAMME GOAL:

The aim of the course is to develop human resources and personnel in the field of Gastroenterology who shall:

i) Provide the health care to the patients with diseases of the gastrointestinal tract and liver disease.
ii) Teach and train future undergraduate and postgraduate medical students and junior doctors in Gastroenterology and Hepatology in Medical Colleges, Institutions and other Hospitals.
iii) Carry out and guide research to improve the practice of the art and science of Gastroenterology and Hepatology.
iv) 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.
v) Demonstrate skills in documentation of case details, and of morbidity and mortality data relevant to the assigned situation;
vi) Demonstrate empathy and humane approach towards patients and their families and respect their sensibilities;
vii) Demonstrate communication skills of a high order in explaining management and prognosis, providing counseling and giving health education messages to patients, families and communities
viii) Facilitate learning of medical/nursing students, practicing physicians, para-medical health workers and other providers as a teacher-trainer; Play the assigned role in the implementation of national health programs, effectively and responsibly;
ix) Organize and supervise the desired managerial and leadership skills; Function as a productive member of a team engaged in health care, research and education.
x) Have management capabilities to manage personnel and budgets etc. to make health more cost-effective.
xi) Organize health teams to provide care during natural or man-made calamities.

xii) Acquire thorough knowledge of internal medicine and allied general and clinical disciplines and to acquaint himself/herself with relevant education delivery systems and with the preventive aspect of gastrointestinal disease

xiii) The candidate should acquaint himself/herself with the past and current literature on aspects of basic investigative and clinical gastroenterology, acquire skills for diagnostic and therapeutic procedures and interventions, diagnose, plan and interpret investigations and treat various gastrointestinal ailments including emergencies by relevant therapeutic methods

2. PROGRAMME OBJECTIVES:

Departmental objectives: At the end of the DrNB Gastroenterology course, students shall be able to:

i) Practice the art and science of Gastroenterology and Hepatology in his/her field of practice and seek and provide consultation as required.

ii) He will have knowledge, skill and attitude to provide comprehensive GI / liver disease care.

iii) Conduct researches and communicate the findings, results and conclusion to his fraternity.

iv) Acquire necessary skills of teaching and training his junior colleagues and medical students.

v) Keep abreast with the latest developments by self-learning and /or participating in continuing Medical Education programmes

vi) Organize and manage administrative responsibilities for routine day to day work as well as new situations including natural and on man-made accidents/calamities etc. and be able to manage situations calling for emergency interventions in the sphere of renal care and also routine problems in their areas.

vii) Exhibit awareness of the importance of audit and the need for considering cost- effectively in patient management.

viii) Deliver preventive and rehabilitative care.

ix) Understand the impact of climate change, air pollution and heat wave on health and in particular on Gastroenterology and Liver related issues

II. TEACHING AND TRAINING ACTIVITIES

The fundamental components of the teaching programme should include:

1. Case presentations & discussion- once a week

2. Seminar – Once a week
3. Journal club- Once a week
4. Grand round presentation (by rotation departments and subspecialties)- once a week
5. Faculty lecture teaching- once a month
6. Clinical Audit-Once a Month
7. Clinico- pathological conference at least 4 times/year
8. A poster and have one oral presentation at least once during their training period in a recognized conference. Desirable

The rounds should include bedside sessions, file rounds & documentation of case history and examination, progress notes, round discussions, investigations and management plan, interesting and difficult case discussions.

The training program would focus on knowledge, skills and attitudes (behavior), all essential components of education. It is being divided into theoretical, clinical and practical in all aspects of the delivery of the rehabilitative care, including methodology of research and teaching.

Theoretical: The theoretical knowledge would be imparted to the candidates through discussions, journal clubs, symposia and seminars. The students are exposed to recent advances through discussions in journal clubs. These are considered necessary in view of an inadequate exposure to the subject in the undergraduate curriculum.

Symposia: Trainees would be required to present a minimum of 20 topics based on the curriculum in a period of three years to the combined class of teachers and students. A free discussion would be encouraged in these symposia. The topics of the symposia would be given to the trainees with the dates for presentation.

Clinical: The trainee would be attached to a faculty member to be able to pick up methods of history taking, examination, prescription writing and management in rehabilitation practice.

Bedside: The trainee would work up cases, learn management of cases by discussion with faculty of the department.

Journal Clubs: This would be a weekly academic exercise. A list of suggested Journals is given towards the end of this document. The candidate would summarize and discuss the scientific article critically. A faculty member will suggest the article and moderate the discussion, with participation by other faculty members and resident doctors. The contributions made by the article in furtherance of the scientific knowledge and limitations, if any, will be highlighted.

Research: The student would carry out the research project and write a thesis/ dissertation in accordance with NBEMS guidelines. He/ she would also be given exposure to partake in the research projects going on in the departments to learn their planning, methodology and execution so as to learn various aspects of research.

III. SYLLABUS

Broad guidelines

1. For a broad sub specialty like Medical Gastroenterology it is difficult to decode limits of syllabus .
2. Science is very progressive and ever advancing so every candidate getting trained is advised to keep following the developments closely
3. The objective of the syllabus is an outline of scope of available theory.

i) Basic Sciences

Anatomy and Physiology

- Immune system of the gastrointestinal tract (GIT) and its importance in various GI disorders
- Molecular biology in relation to GIT
- Genetic diseases of the GIT and the liver
- Gene therapy
- GI tumors and tumor biology
- Gastrointestinal hormones in health and diseases
- Embryology of the gut, liver, pancreas and congenital anomalies
- Enteric microbiota

ii) Symptoms, Syndromes, and Scenarios

- Heartburn and noncardiac chest pain Dysphagia and odynophagia
- Chronic or recurrent abdominal pain,
  Dyspepsia: ulcer and non-ulcer/bloating and early satiety/belching and rumination
- Nausea and vomiting
- Disorders of defecation
- Diarrhea
- Fecal incontinence
- Rectal bleeding
- Anorectal pain and pruritus ani
- Functional gastrointestinal disease,
- Anorexia nervosa and bulimia nervosa, Weight loss, Gastrointestinal causes of anemia and occult bleeding,
- Intestinal gas
- Upper and lower gastro-intestinal bleeding
- Gastrointestinal tuberculosis

iii) Esophagus

- Basic anatomy, histology and physiology
- Congenital anomalies
- Motility of the esophagus and motor disorders
  Mechanism of deglutition and dysphagia
- Approach to a patient with dysphagia
- Gastro-esophageal reflux disease
- Tumors of the esophagus
- Esophageal webs, membranes and diverticulum
- Management of benign and malignant esophageal strictures
- Esophagus and systemic diseases
- Infectious diseases of the esophagus
- Foreign bodies in the esophagus and stomach
- Esophageal perforation
- Drug induced esophagitis
- EUS: Techniques, diagnosis, therapy

iv) Stomac

- Anatomy, histology, functions
- Physiology of acid and bicarbonate secretion in health and diseases
- Defence mechanisms against acid and pepsin
- Gastroduodenal motor function in health and diseases.
- Gastritis (nonspecific and specific)
- Helicobacter pylori infection
- Peptic ulcer
- Dyspepsia
- Stress and stomach
- Gastric hypersecretory states including Zollinger Ellison syndrome
- Ulcer complications and their management
- Surgery for peptic ulcer
- Post gastrectomy complication
- Bezoars
- Tumors of the stomach
- Diverticuli and hernia of the stomach
- UGI Endoscopy: technique, diagnosis, therapy

v) Small Intestine

- Anatomy, blood supply, histology
- Motility of the small intestine
- Congenital anomalies
- Normal absorption of the nutrients
- Intestinal electrolyte absorption and secretion
- Malabsorption syndromes Pathophysiology, manifestations and approach
- Celiac sprue
- Infection related diseases a. Intestinal microflora in health and diseases b. Tropical sprue c. Whipple's disease d. Infectious diarrhoea and food poisoning e. Parasitic diseases
- Small intestinal ulcers
- Short bowel syndrome and intestinal transplantation.

- Eosinophilic gastroenteritis
- Food allergies
- Intestinal obstruction and pseudo-obstruction
- Short bowel syndrome
- Acute appendicitis
- Malrotation of the gut
- Bezoars
- Management of diarrhea
- GI lymphomas
- Small intestinal tumors
- Small intestinal transplantation
- Enteroscopy: Technique, diagnosis, therapy

vi) Colon

- Basic anatomy blood supply, histology and functions
- Motility of the colon and disorders of motility
- Congenital anomalies
- Megacolon
- Constipation
- Colonic pseudo-obstruction
- Fecal incontinence
- Antibiotic associated diarrhea
- Inflammatory bowel disease a. Ulcerative colitis b. Crohn's disease c. Indeterminate colitis d. Ileostomies and its management
- Diverticular disease of the colon
- Radiation entero-colitis
- Colonic polyps and polyposis syndromes
- Malignant diseases of the colon
- Other inflammatory diseases of colon including a. Solitary rectal ulcer syndrome
  b. Diversion colitis c. Collagenous and microscopic colitis d. Non specific ulcerations of the colon e. Malakoplakia f. Pneumatoses cystoids intestinalis
- Hemorrhoids

- Diseases of the anorectum
- Tubercosis of g.i. tract peritoneum
- Colonoscopy and iloscopy: Technique, Diagnosis, therapy

vii) Pancreas

- Anatomy, physiology, blood supply, developmental anomalies
- Physiology of the pancreatic secretion
- Pancreatic function tests
- Acute pancreatitis
- Recurrent acute pancreatitis
- Chronic pancreatitis
- Malignancies of the pancreas(Exocrine and endocrine)
- Cystic fibrosis and other childhood disorders of the pancreas
- Hereditary pancreatitis
- Pancreatic transplantation
- Pancreatic ERCP: Techniques, Diagnosis, therapy

viii) Biliary Tree

- Anatomy, Physiology
- Physiology of bile formation and excretion
- Enterohepatic circulation
- Bilirubin metabolism.
- Approach to a patients with jaundice
- Gallstones, its complications, and management
- Acute acalculous cholecystitis
- Miscellaneous disorders of the gallbladder
- Acute cholangitis
- Benign biliary structure
- Benign and malignant neoplasms of the biliary system.
- Endoscopic management of biliary obstruction.
- Motility and dysmotility of the biliary system and sphincter of Oddi dysfunction

- Congenital diseases of the biliary systems
- Biliary ERCP and cholangioscopy: Diagnosis and therapy

ix) Liver

- Anatomy, physiology, blood supply
- Functions of the liver
- Microcirculation of liver
- Liver function tests
- Portal hypertension i. Extrahepatic portosplenic vein obstruction ii. Non cirrhotic portal fibrosis iii. Cirrhosis
- Acute viral hepatitis
- Chronic hepatitis
- Fulminant hepatic failure
- Subacute hepatic failure
- Cirrhosis of liver
- Ascites
- Hepatorenal syndrome
- Autoimmune liver disease
- Metabolic liver disease
- Sclerosing cholangitis- primary and secondary
- Primary biliary cirrhosis
- Hepatic venous outflow tract obstruction
- Fibrocystic diseases of the liver
- Wilson's disease
- Hemochromatosis
- Liver in porphyria
- Hepatic tumors
- Infections of the liver
- Liver in pregnancy
- Liver in congestive heart failure ,Liver diseases and pregnancy,
- Liver biopsy
- Liver transplantation and artificial liver support Liver transplantation

- Liver transplantation: indications and selection of candidates and immediate complications

x) Peritorium and Retroperitoneum

- Ascites
- Chronic peritonitis
- Budd-Chiari syndrome
- Malignant ascites
- Diseases of the retroperitoneum

xi) Diseases of Multiple Organ Systems

- Oral Disease and Oral-Cutaneous Manifestations of Gastrointestinal and Liver Disease
- Disorders of Mouth and Tongue,
- Mucocutaneous Candidasis, Mucocutaneous Features of HIV Infection,
- Mucocutaneous Ulcerative Disease,
- Eosinophilic disorder
- Vesiculobullous Diseases,
- Cutaneous Manifestations of Intestinal Disease
- Collagen vascular and vasculitic disorders
- AIDS and the gut,
- Graft-versus-host disease,
- Radiation and other physicochemical injury
- Systemic amyloidosis,
- Foreign bodies
- Porphyria
- Cutaneous manifestations of GI diseases

xii) Psychosocial factors

- A Biopsychosocial Understanding of Gastrointestinal Illness and Disease Case Study:
- A Typical Patient in a Gastroenterology Practice,
- The Biomedical Model,

- The Biopsychosocial Model

xiii) Nutrition

- Normal nutritional requirements
- Assessment of nutritional status
- Protein energy malnutrition
- Manifestations and management of nutritional deficiency and excess
- Nutritional support in various GI disorders (malabsorption, acute and chronic pancreatitis, inflammatory bowel disease) Vascular Diseases of the GI Tract

xiv) Paediatric Gastroenterology

- Congenital disorders of gastrointestinal system, liver, biliary tract and pancreas
- Age related physiological and psychological variables of children
- Unique aspects of disease in paediatric age group as compared to adult

xv) Geriatric Gastroenterology

- General Issues:
  - Impact of age on presentation, diagnosis and treatment of importantgastrointestinal conditions.
  - Impact of depression and dementia on presentation and treatment.
  - Pathophysiology of aging
  - Social and ethical issues Geriatric gastroenterology
- Changes of G.I. function with aging, (e.g.) slowing of colonic motility and rectaldysfunction
- Changes in drug metabolism
- Effect of aging on nutrition
- GI problems in institutionalized and bedridden patients (e.g) fecal impaction asrisk factor for urine incontinence.

xvi) Womens Health Issues in Digestive Diseases

1. General women health issues
    - Doctor-patient relationships
    - Cultural and religious issues
    - oPsycho-social issues
    - Lab values and diagnostic tests - Gender differences as well as changes during pregnancy in normal lab values
2. Specific women health issues
    - Health and disease states – gender difference in demographics, epidemiology, pathophysiology, clinical presentation.
    - Effect of menstrual cycle and menopause on digestive disease
    - Pharmacokinetics of medications – differences in absorption, metabolism and therapeutic response.
3. Pregnancy and child bearing
    - GI and liver changes / disorders in normal pregnancy
    - Effect of pre-existing GI and liver disorders on pregnancy and fertility.
    - Impact of pregnancy on gastrointestinal & liver disease
    - GI and liver disorders unique to pregnancy
    - Maternal-fetal transmission of infections and appropriate management of mother and infant
    - Pharmacokinetics and interactions of medications during pregnancy and breast feeding - potential harm to fetus.
    - Nutritional requirements Post-partum issues Rectal prolapse, hemorrhoids, urinary / fecal incontinence

xvii) Research

- Basic knowledge of clinical research methods, biostatistics, epidemiology and ethics.
- Basic knowledge of cell biology, molecular biology, molecular genetics and immunology
- Critical analysis of current literature, ability to formulate research questions, make a study design, calculate sample size, data management, ways to avoid bias etc
- Preparation of proposals for funding and evaluation by institutional review boards
- Presentation of work in written/oral form at Conferences 6. Help mentors in

peer review of articles submitted for publications.

xviii) Primer of Diagnostic Methods: Endoscopic

- Upper gastrointestinal endoscopy and mucosal biopsy
- Lower gastrointestinal endoscopy and biopsy
- Endoscopic ultrasonography,
- Diagnostic and interventional endoscopic retrograde cholangiopancreatography
- Enteroscopy (single or double-balloon)
- Capsule endoscopy
- Percutaneous ultrasound
- Barium radiology
- Computed tomography
- Magnetic resonance imaging,
- Magnetic resonance cholangiopancreatography,
- Positron emission tomography
- Non-invasive liver assessment
- Functional testing
- Gastrointestinal motility testing
- Measurement of portal pressure
- Liver biopsy

xix) Primer of Treatments

- Medical treatments of various GI diseases
- Drug prescription in liver disease,
- Nutritional assessment and support
- Therapeutic endoscopy
- Non-variceal upper gastrointestinal bleeding control
- Variceal ligation, glue injection for varices and other lesions
- Snare polypectomy and foreign body removal from GI Tract
- Percutaneous endoscopic gastrostomy
- Endoscopic techniques of removing early gastrointestinal neoplams,
- Dilation and stenting of the gastrointestinal tract,
- The transjugular intrahepatic portosystemic shunt (TIPS Interventional radiology) (Observation only)
- Paracentesis

xx) Miscellaneous

- Biostatistics & clinical epidemiology
- Preventive Gastroenterology and Hepatology
- Management of GI emergencies like upper and lower GI bleed, Acute pancreatitis, hepatic encephalopathy and cholangitis
- Psychological factors in GI diseases
- Medicine relevant to Gastroenterology
- Bio ethics, ethical issue in transplantation, including 'Human Organ Transplant Act'

xxi) Laboratory Methods

The candidate is expected to perform routine stool examination and ultrasonography. In addition he/she must familiarize himself/herself with the following investigations:

- Liver function tests
- Auto analyzer functioning
- Gastro and Liver pathology interpretation including immuno-fluoresence andelectron microscopy.
- Electrolyte and acid base analysis
- Digital subtraction angiography.
- Selective Gastrointestinal angiography and interventional angioplasty andstenting
- Doppler studies
- CT imaging
- Magnetic resonance imaging including MRCP
- Percutaneous Trans hepatic Biliary Drainage (PTBD)
- Various gastro-intestinal isotope imaging and functional technique Microbiology:
- Viral, Bacterial and fungal cultures, Serological and PCR techniques andImmunological test:
- ANA, anti SMA, Anti-LKM, AMA and ANCA, TTG, Anti-endomysial antibody
- Research: The candidate will present at least two paper in the national conference and publish at least one paper in a journal. Practical work:
- Radiology: Reading and interpreting the common x-ray films including X-

ray films of the abdomen

- Barium studies
- Ultrasound examination, CT scans
- MR scans and angiography and ERCP films
- GI Pathology Reading and interpreting histological slides of commongastrointestinal and liver disease.

xxii) Gastroenterology and Enviroment

Impact on Gastroenterology and Liver physiology due to environmental changes including Air, pollution, Climate change and Heat wave such as

- Effect of air quality on g.i. microbiome
- Effect of heat wave on GI infections and Inflammatory Bowel Diseases
- Effect of air pollution in GI Endoscopy unit
- Relationship of air pollution and peptic ulcer bleeding etc.
- Effect of water contamination on GI health

xxiii) Others

- Ethics
- Medico legal aspects relevant to the discipline
- Health Policy issues as may be applicable to the discipline

ROTATION

During the Training Period.

The resident would be required to rotate through clinical gastroenterology, hepatology, diagnostic and therapeutic endoscopy. In addition, he/she will spend some time in rotations through allied specialities (pathology, radiology, laboratory medicine etc.) Extramural rotations (Institutions outside the primary centre) or rotation at affiliated centres for a maximum period of 3 months may be allowed during after the 1st year of training.

Posting in Gastroenterology

1) Clinical Gastroenterology and Hepatology

2) Diagnostic and Therapeutic Endoscopy

3) Radiology / Pathology

4) OPD consultation

5) Critical care and Emergency

The pattern of training in each of the semester would be as follows :

1st year

Clinical ward posting including ICU, Initiating Research process, Human Rights information Awareness about right to information, Development of communication skills both in the vernacular and English language, Ethical training, Defining brain death, Counseling for organ transplantation, Computer orientation.

2nd year

Change of posting to a busier ward with greater responsibility Independent OPD and Oesophagogastro duodenoscopy under supervision, Organising CME, workshops and seminars

3rd year

Change of posting – Independent charge of the wards, Independent Oesophagogastro duodenoscopy and based procedures Teaching (Inter and intradepartmental) Organising CME, workshops and seminars.

Schedule of Posting

The residents should be posted in the gastroenterology ward, emergency (casualty) and gastroenterology intensive care unit during the three year course. They should also undergo rotation in allied specialties. The following should be the training program in the department

1. Gastroenterology Ward - 2 years

2. Endoscopy Lab - 4 months
3. Gastroenterology ICU/ Emergency- 6 months
4. Pathology- 2 weeks.
5. Microbiology- 2 weeks.
6. Radiology - 1 month

IV. COMPETENCIES

Affective Domain Development of attitude is a very important part of training. It would be the constant endeavor of the faculty to develop desirable attitudes in the P.G. trainees during the course by personal examples, interaction and group discussion. Constant watch will be maintained during their work in the wards to ensure that this objective is being met. Although there will be no formal evaluation of attitude, some aspects of this domain would be covered during the formative evaluation as per the enclosed proforma for continued internal assessment.

V. LOGBOOK

A candidate shall maintain a log book of procedures (assisted / performed) during the training period, certified by the concerned post graduate teacher / Head of the department / senior consultant.

This log book shall be made available to the board of examiners for their perusal at the time of the final examination.

The log book should show evidence that the afore mentioned subjects were covered (with dates and the name of teacher(s) The candidate will maintain the record of all academic activities undertaken by him/her in log book.Logbook should be signed by faculty/ HOD at least once every month.

- Personal profile of the candidate
- Educational qualification/Professional data
- Record of case histories
- Procedures learnt
- Record of case Demonstration/Presentations

- Every candidate, at the time of practical examination, will be required to produce performance record (log book) containing details of the work done by him/her during the entire period of training as per requirements of the log book. It should be duly certified by the supervisor as work done by the candidate and countersigned by the administrative Head of the Institution.
- In the absence of production of log book, the result will not be declared.

VI. RECOMMENDED TEXT BOOKS AND JOURNALS

LIST OF BOOKS

1. Sleisenger and Fordtran's Gastrointestinal and Liver Disease, 11edition by Mark Feldman; Lawrence S. Friedman; Lawrence J. Brandt, 2021
2. Yamada's Textbook of Gastroenterology, Sixth Edition by Daniel K. Podolsky (Editor); Michael Camilleri (Editor); J. Gregory Fitz (Editor); Anthony N. Kalloo (Editor); Fergus Shanahan (Editor); Timothy C. Wang (Editor), 2016
3. Schiff's Diseases of the Liver by Eugene R. Schiff (Editor); Willis C. Maddrey (Editor); K. Rajender Reddy (Editor), 2018
4. Sherlock's Diseases of the Liver and Biliary System by James S. Dooley (Editor); Anna S. F. Lok (Editor); Guadalupe Garcia-Tsao (Editor); Massimo Pinzani (Editor), 2018
5. Practical Gastrointestinal Endoscopy, Seventh Edition by Peter B. Cotton; Adam Haycock; Brian P. Saunders; Christopher B. Williams; Jonathan Cohen, 2014
6. Zakim and Boyer's Hepatology, Seventh Edition by Arun J. Sanyal; Norah A. Terrault; Keith D. Lindor; Thomas D. Boyer, 2018
7. Transplantation of the Liver by Ronald W. Busuttil; Goran B. Klintmalm, 2015
8. Comprehensive Atlas of High-Resolution Endoscopy and Narrowband Imaging by Jonathan Cohen (Editor), 2017
9. Endosonography by Robert H. Hawes; Paul Fockens; Shyam Varadarajulu, 2019
10. ERCP: the fundamentals by Peter B. Cotton (Editor); Joseph W. Leung (Editor), 2020
11. Pediatric Gastrointestinal and Liver Disease by Robert Wyllie; Jeffrey S. Hyams; Marsha Kay, 2020
12. Walker's Pediatric Gastrointestinal Disease: Physiology, Diagnosis, Management (2018), 6th edition , BY Kleinman, Ronald E.; Goulet, Olivier-Jean; Mieli-vergani, Giorgi

13. Blumgarts Surgery of the Liver Biliary Tract and Pancreas 6th Edition by William Jarnagin 2016
14. Yamada's Atlas of Gastroenterology, Fifth Ed. By Daniel K. Podolsky (Editor); Michael Camilleri (Associate Editor); J. Gregory Fitz (Associate Editor); Anthony N. Kalloo (Associate Editor); Fergus Shanahan (Associate Editor); Timothy C. Wang (Associate Editor), 2016
15. Abdominal Imaging by Dushyant V. Sahani; Anthony E. Samir, 2017

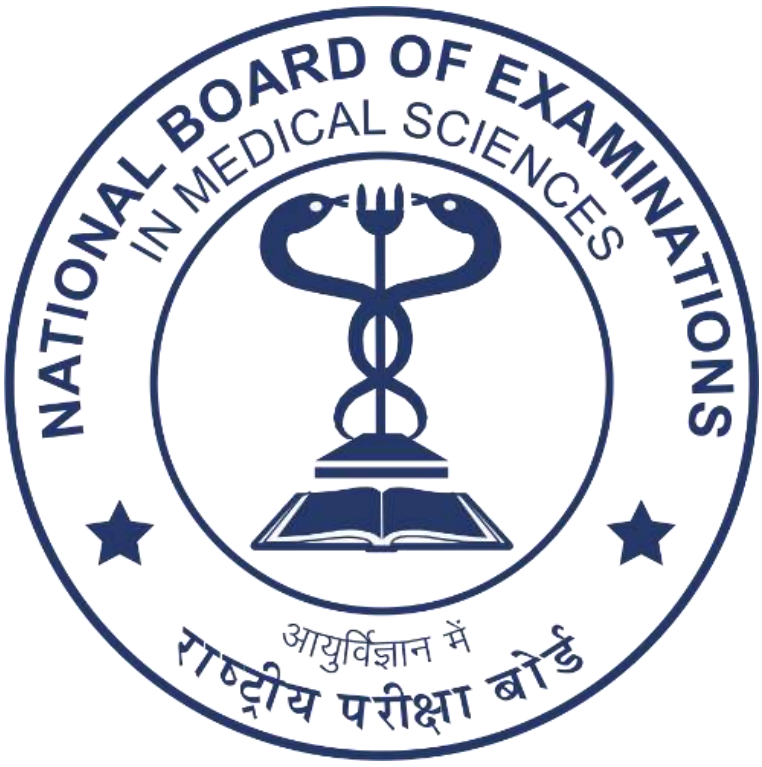
** New editions as and when available

Journals

1. GUT
2. Gastroenterology
3. Gastrointestinal Endoscopy
4. Endoscopy
5. American Journal of Gastroenterology
6. Hepatology
7. Hepatology International
8. Indin Journal Gastroenterology
9. Endoscopy International: Open
10. Journal of Gastroenterology & Hepatology
11. JAMA
12. Nature
13. NEJM
14. Lancet
15. Digestive Endoscopy
16. Clinical Endoscopy
17. Dis Colon Rectum

Various website and CD-ROM programme which will help in keeping updated are recommended

1. Gastrohep. com
2. Medscape. com
3. Cochrane reviews
4. Uptodate



आयुर्विज्ञान में राष्ट्रीय परीक्षा बोर्ड

स्वास्थ्य एवं परिवार कल्याण मंत्रालय, भारत सरकार

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