



## **MGM INSTITUTE OF HEALTH SCIENCES**

**Accredited by NAAC with 'A' Grade**

(Deemed University u/s 3 of UGC Act, 1956)

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# Syllabus for M.Ch. Urology

(Approved as per BOM 38/2014 (resolution no. 3.5), dated 28/11/2014)

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## **Curriculum MCh Urology Index**

1. Goals
2. Objectives
3. Syllabus
4. Teaching Programme
5. Schedule of Posting
6. Research projects
7. Assessment
8. Job Responsibilities
9. Suggested Books & Journals
10. Model Test Papers

*Alone Bay*

## PG Curriculum MCh Urology

The infrastructure and faculty of the department of Urology will be as per MCI guidelines

### 1. Goals

The goal of M Ch course is to produce a competent physician who:

- ❖ Recognizes the health needs of adults and carries out professional obligations in keeping with principles of National Health Policy and professional ethics;
- ❖ Has acquired the competencies pertaining to Urology that are required to be practiced in the community and at all levels of health care system;
- ❖ Has acquired skills in effectively communicating with the patients, family and the community;
- ❖ Is aware of the contemporary advances and developments in medical sciences.
- ❖ Acquires a spirit of scientific enquiry and is oriented to principles of research methodology; and
- ❖ Has acquired skills in educating medical and paramedical professionals.

### 2. Objectives

At the end of the MCh course in Urology, the student should be able to:

- ❖ Recognize the key importance of medical problems in the context of the health priority of the country;
- ❖ Practice the specialty of Urology in keeping with the principles of professional ethics;
- ❖ Identify social, economic, environmental, biological and emotional determinants of adult Urology and know the therapeutic, rehabilitative, preventive and promotion measures to provide holistic care to all patients;
- ❖ 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 Urological illnesses in adults based on the analysis of history, physical examination and investigative work up;
- ❖ Plan and deliver comprehensive treatment for illness in adults using principles of rational drug therapy;
- ❖ Plan and advise measures for the prevention of Urological diseases;
- ❖ Plan rehabilitation of adults suffering from chronic illness, and those with special needs;
- ❖ Manage Urological emergencies efficiently;

- ❖ Demonstrate skills in documentation of case details, and of morbidity and mortality data relevant to the assigned situation;
- ❖ 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.
- ❖ 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;
- ❖ Facilitate learning of medical/nursing students, practicing physicians, paramedical health workers and other providers as a teacher-trainer;
- ❖ Play the assigned role in the implementation of national health programs, effectively and responsibly;
- ❖ Organize and supervise the desired managerial and leadership skills;
- ❖ Function as a productive member of a team engaged in health care, research and education.

### 3. Syllabus

#### 3.1 Theory

##### ❖ Anatomy

Surgical Anatomy of the Retroperitoneum, Kidneys and Ureters  
Anatomy of the Lower Urinary Tract and Male Genitalia

##### ❖ Clinical Decision Making

Evaluation of the Urologic Patient: History, Physical Examination, and Urinalysis  
Urinary Tract Imaging : Basic Principles  
Outcomes Research

##### ❖ Basics of Urologic Surgery

Basic Instrumentation and Cystoscopy  
Basic of Laparoscopic Urologic Surgery

##### ❖ Infections and Inflammation

Infections of the Urinary Tract A. Schaeffer  
Inflammatory Conditions of the Male Genitourinary Tract  
Interstitial Cystitis and Related Disorders  
Sexually Transmitted and Associated Diseases  
Urological Implications of AIDS and Related Conditions  
Cutaneous Diseases of the External Genitalia  
Tuberculosis and Other Opportunistic Infections of the Genitourinary System

❖ **Molecular and Cellular Biology**

Basic Principles of Immunology  
Molecular Genetics and Cancer Biopsy  
Tissue Engineering Perspectives for Reconstructive Surgery

❖ **Reproductive and Sexual Function**

Male Reproductive Physiology  
Male Infertility  
Surgical Management of Male Infertility  
Physiology of Erectile Dysfunction : Pathophysiology, Evaluation, Nonsurgical Management  
Epidemiology, Evaluation, and Nonsurgical Management of Erectile Dysfunction  
Prosthetic Surgery for Erectile Dysfunction  
Vascular Surgery for Erectile Dysfunction  
Peyronie's Disease  
Priapism  
Androgen Deficiency in the Aging Male  
Female Sexual Function and Dysfunction

❖ **Male Genitalia**

Neoplasms of the Testis  
Surgery of Testicular Tumors  
Tumors of the Penis  
Surgery of Penile and Urethral Carcinoma  
Surgery of the Penis and Urethra  
Surgery of the Scrotum and Seminal Vesicles

❖ **Renal Physiology and Pathophysiology**

Renal Physiology and Pathophysiology  
Renovascular Hypertension

❖ **Upper Urinary Tract Obstruction and Trauma**

Pathophysiology of Obstruction  
Management of Upper Urinary Tract Obstruction  
Upper Urinary Tract Trauma

❖ **Renal Failure and Transplantation**

Renal Transplantation  
Etiology, Pathogenesis, and Management of Renal Failure

◆ **Urinary Lithiasis and Endourology**

Urinary Lithiasis : Etiology, Epidemiology, and Pathophysiology  
 Evaluation and Medical Management of Urinary Lithiasis  
 Surgical Management of Upper Urinary Tract Calculi  
 Ureteroscopy and Retrograde Ureteral Access  
 Percutaneous Approaches to the Upper Urinary Tract

◆ **Neoplasms of the Upper Urinary Tract**

Renal Tumors  
 Urothelial Tumors of the Upper Urinary Tract  
 Urothelial Tumors of the Renal Pelvis and Ureter  
 Open surgery of the Kidney  
 Laparoscopic Surgery of the Kidney  
 Ablative Therapy for Renal Tumors

◆ **The Adrenals**

Pathophysiology, Evaluation, and Medical Management of Adrenal Disorders  
 Surgery of the Adrenals

◆ **Urine Transport, Storage, and Emptying**

Physiology and Pharmacology of the Renal Pelvis and Ureter  
 Physiology and Pharmacology of the Bladder and Urethra  
 Pathophysiology, Categorization, and Management of Voiding Dysfunction  
 Urodynamic and Video dynamic Evaluation of Voiding Dysfunction  
 Neuromuscular Dysfunction of the Lower Urinary Tract  
 Urinary Incontinence : Epidemiology, Pathophysiology, Evaluation, and Overview  
 of Management  
 The Overactive Bladder  
 Pharmacologic Management of Storage and Emptying Failure  
 Conservative Management of Urinary Incontinence : Behavioral and Pelvic Floor  
 Therapy,  
 Urethral and Pelvic Devices  
 Electrical Stimulation and Neuromodulation in Storage and Emptying Failure  
 Retropubic Suspension Surgery for Incontinence in Women  
 Vaginal Reconstructive Surgery for Sphincteric Incontinence  
 Pubovaginal Slings  
 Tension-Free Vaginal Tape Procedures  
 Injection Therapy for Urinary Incontinence  
 Additional Treatment for Storage and Emptying Failure  
 Geriatric Voiding Dysfunction and Urinary Incontinence  
 Urinary Tract Fistulae  
 Bladder and Urethral Diverticula  
 Surgical Procedures for Sphincteric Incontinence in the Male : The Artificial  
 Genitourinary

### **Sphincter; Perineal Sling Procedures**

#### **◆ Bladder ; Lower Genitourinary Calculi and Trauma**

Urothelial Tumors of the Bladder  
 Management of Superficial Bladder Cancer  
 Management of Metastatic and Invasive Bladder Cancer  
 Surgery of Bladder Cancer  
 Laparoscopic Bladder Surgery  
 Use of Intestinal Segments in Urinary Diversion  
 Cutaneous Continent Urinary Diversion  
 Orthotopic Urinary Diversion  
 Genital and Lower Urinary Tract Trauma  
 Lower Urinary Tract Calculi

#### **◆ Prostate**

Molecular Biology, Endocrinology, and Physiology of the Prostate and Seminal Vesicles  
 Etiology, Pathophysiology, and Epidemiology of Benign Prostatic Hyperplasia  
 Natural History, Evaluation, and Nonsurgical Management of Benign Prostatic Hyperplasia  
 Minimally Invasive and Endoscopic Management of Benign Prostatic Hyperplasia  
 Retropubic and Suprapubic Open Radical Prostatectomy  
 Epidemiology, Etiology, and Prevention of Prostate Cancer  
 Pathology of Prostatic Neoplasms  
 Ultrasonography and Biopsy of the Prostate  
 Tumor Markers in Prostate Cancer  
 Early Detection, Diagnosis, and Staging of Prostate Cancer  
 Definitive Therapy of Localized Prostate Cancer : Outcomes  
 Expectant Management of Prostate Cancer  
 Anatomic Retrograde Retropubic Prostatectomy  
 Radical Perineal Prostatectomy  
 Laparoscopic and Robotic Radical Prostatectomy and Pelvic Lymphadenectomy  
 Radiation Therapy for Prostate Cancer  
 Cryotherapy of Prostate Cancer  
 Treatment of Locally Advanced Prostate Cancer  
 Management of Rising Prostate-Specific Antigen after Definitive Therapy  
 Hormonal Therapy for Prostate Cancer  
 Management of Hormone-Resistant Prostate Cancer

#### **◆ Pediatric Urology**

Normal and Anomalous Development of the Urinary Tract  
 Renal Function in the Fetus  
 Congenital Obstructive Uropathy  
 Perinatal Urology  
 Evaluation of Pediatric Urologic Patient

Renal Disease in Childhood  
 Urinary Tract Infections in Infants and Children  
 Anomalies of the Kidney  
 Renal Dysplasia and Cystic Disease of Kidney  
 Anomalies and Surgery of the Ureteropelvic Junction  
 Ectopic Ureter  
 Vesicoureteral Reflux  
 Prune-Belly Syndrome  
 Exstrophy and Epispadias Complex  
 Surgical Technique for One-Stage Exstrophy Reconstruction  
 Bladder Anomalies in Children  
 Posterior Urethral Valves and Other Urethral Anomalies  
 Voiding Dysfunction in Children : Neurogenic and Non-neurogenic  
 Urinary Tract Reconstruction  
 Hypospadias  
 Abnormalities of External Genitalia in Boys  
 Abnormalities of Testis and Scrotum : Surgical Management  
 Sexual Differentiation : Normal and Abnormal  
 Surgical Management of Intersex  
 Pediatric Oncology  
 Pediatric Endourology and Laparoscopy  
 Pediatric Genitourinary Trauma

### 3.2. Practical:

History, examination and writing of records:

- ❖ History taking should include the background information, presenting complaints and the history of present illness, history of previous illness, family history, social and occupational history and treatment history.
- ❖ Detailed physical examination should include general physical and CVS examination
- ❖ Skills in writing up notes, maintaining problem-oriented medical records (POMR), progress notes, and presentation of cases during ward rounds, planning investigation and making a treatment plan should be taught.
- ❖ Other Urology procedures- Investigative Urological Procedures like uroflowmetry, CNG, Doppler, Ultrasound & Ultrasound guided procedures.

### 3.3. Clinical Teaching

General, Physical and specific examinations of Genitourinary should be mastered. The resident should be able to analyse history and correlate it with Clinical findings. He should be well versed with all radiological procedures like IVU, Nephrostogram and RGP, Ascending Ieltherogram. He should present his daily admissions in morning report and try to improve management skills, fluid balance, choice of drugs. He should clinically analyse the patient & decide for pertinent investigations required for specific patient.

## 4. Teaching Programme

### 4.1 General Principles

Acquisition of practical competencies being the keystone of postgraduate medical education, postgraduate training is skills oriented.

Learning in postgraduate program is essentially self-directed and primarily emanating from clinical and academic work. The formal sessions are merely meant to supplement this core effort.

### 4.2 Teaching Sessions

The teaching methodology consists of bedside discussions, ward rounds, case presentations, clinical grand rounds, statistical meetings, journal club, lectures and seminars.

Along with these activities, trainees should take part in inter-departmental meetings i.e. clinico-pathological and clinico-radiological meetings that are organized regularly.

Trainees are expected to be fully conversant with the use of computers and be able to use databases like the Medline, Pubmed etc.

They should be familiar with concept of evidence based medicine and the use of guidelines available for managing various diseases.

### 4.3 Teaching Schedule

Following is the suggested weekly teaching programme in the Department of Urology:

Sr. No.	Description	Frequency
1.	Case Presentation & Discussion	Once a week
2.	Seminar	Once in two weeks
3.	Journal Club	Once in two weeks
4.	Grand Round presentations	Once a month
5.	Emergency case discussions	Once a week
6.	Statistical & Mortality Meet	Once a month
7.	Clinico-Pathological meet	Once a month
8.	Clinico-Radiological meet	Once a month
9.	Clinico-Surgical meet	Once a month
10.	Faculty lecture teaching	Once a month

- ❖ Each unit should have regular teaching rounds for residents posted in that unit. The rounds should include bedside case discussions, file rounds (documentation of case history and examination, progress notes, round discussions, investigations and management plan), interesting and difficult case unit discussions.
- ❖ Central hospital teaching sessions will be conducted regularly and DM residents would present interesting cases, seminars and take part in clinico-pathological case discussions.

#### 4.4 Conferences and Papers

- ❖ A resident must attend at least one conference per year.
- ❖ One paper must be presented in at least 3 years.

#### 5. Schedule of Postings

- ❖ OPD : Twice a week
- ❖ OT : Thrice a week
- ❖ Investigative urology : All Days
- ❖ The MCh resident is expected to do daily ward rounds at 8 AM in the morning and evening between 5 PM to 7 PM along with PG resident.
- ❖ The MCh resident should do the dressing of the patient that have been operated/assisted by them.
- ❖ The MCh resident should note down the history and examination of admitted patients and should daily put progress note in files.
- ❖ The normal working hours will be from 8 AM to 8 PM. When on emergency duty, the resident is supposed to stay overnight in the resident room.
- ❖ LOG BOOK
  - The student will maintain a log book of all the procedures.
  - The student will be graded as per his clinical & technical skill performance.
  - The student has observed the procedures as an assistant.
  - The part of the procedures performed under direct supervision.
  - The procedure performed with assistance.
  - The purpose of training is to grade the skills and evaluate the ability to take decisions.

The resident will be assessed once every year in the form of theory test at the end of each academic year.

#### 6. Research Projects

- ❖ Every candidate shall carry out work on an assigned research project under the guidance of a recognized postgraduate teacher, the project shall be written and submitted in the form of a Project.
- ❖ Every candidate shall submit project plan to university within time frame set by university

- ◆ Thesis shall be submitted to the University within 9 months of joining the course.
- ◆ The student will (i) identify a relevant research problem, (ii) conduct a critical review of literature, (iii) formulate a hypothesis, (iv) determine the most suitable study design, (v) state the objectives of the study, (vi) prepare a study protocol, (vii) undertake a study according to the protocol, (viii) analyze and interpret research data, and draw conclusion, (ix) write a research paper.

## 7. Assessment

All the MCh residents are assessed daily for their academic activities and also periodically.

### 7.1. General Principles

- ◆ The assessment is valid, objective and reliable
- ◆ It covers cognitive, psychomotor and affective domains.
- ◆ Formative, continuing and summative (final) assessment is also conducted in theory as well as practical. In addition, research project is also assessed separately.

### 7.2. Formative Assessment

The formative assessment is continuous as well as end of term. The former is based on the feedback from the consultants concerned. Formative assessment will provide feedback to the candidate about his/her performance and help to improve in the areas they lack. Record of internal assessment should be presented to the board of examiners for consideration at the time of final examination.

### 7.3. Internal Assessment

The performance of the resident during the training period should be monitored throughout the course and duly recorded in the log books as evidence of the ability and daily work of the student. Marks should be allotted out of 100 as followed.

Sr. No.	Items	Marks
1.	Personal Attributes	20
2.	Clinical Work	20
3.	Academic activities	20
4.	End of term theory examination	20
5.	End of term practical examination	20

#### 1. Personal attributes:

- ◆ Behavior and Emotional Stability: Dependable, disciplined, dedicated, stable in emergency situations, shows positive approach.

- ◆ **Motivation and Initiative:** Takes on responsibility, innovative, enterprising, does not shirk duties or leave any work pending.
- ◆ **Honesty and Integrity:** Truthful, admits mistakes, does not cook up information, has ethical conduct, exhibits good moral values, loyal to the institution.
- ◆ **Interpersonal Skills and Leadership Quality:** Has compassionate attitude towards patients and attendants, gets on well with colleagues and paramedical staff, is respectful to seniors, has good communication skills.

## 2. Clinical Work:

- ◆ **Availability:** Punctual, available continuously on duty, responds promptly on calls and takes proper permission for leave.
- ◆ **Diligence:** Dedicated, hardworking, does not shirk duties, leaves no work pending, does not sit idle, competent in clinical case work up and management.
- ◆ **Academic ability:** Intelligent, shows sound knowledge and skills, participates adequately in academic activities, and performs well in oral presentation and departmental tests.
- ◆ **Clinical Performance:** Proficient in clinical presentations and case discussion during rounds and OPD work up. Preparing Documents of the case history/examination and progress notes in the file (daily notes, round discussion, investigations and management) Skill of performing bed side procedures and handling emergencies.

3. **Academic Activity:** Performance during presentation at Journal club/ Seminar/ Case discussion/Stat meeting and other academic sessions. Proficiency in skills as mentioned in job responsibilities.

4. **End of term theory examination** conducted at end of 1<sup>st</sup>, 2<sup>nd</sup> year and after 2 years 9 months

5. **End of term practical/oral examinations** after 2 years 9 months.

Marks for personal attributes and clinical work should be given annually by all the consultants under whom the resident was posted during the year. Average of the three years should be put as the final marks out of 20.

Marks for academic activity should be given by the all consultants who have attended the session presented by the resident.

The Internal assessment should be presented to the Board of examiners for due consideration at the time of Final Examinations.

#### 7.4. Summative Assessment

Ratio of marks in theory and practical will be equal.

The pass percentage will be 50%.

Candidate will have to pass theory and practical examinations separately.

#### A. Theory examination

Sr. No.	Title	Marks
Paper -I	Basic Sciences as related to Urology	100
Paper-II	Clinical Urology	100
Paper-III	Operative Urology	100
Paper-IV	Recent advances in Urology	100
Total		400

#### B. Practical & Viva-Voce Examination

Sr. no		Marks
1.	Long Case (1)	100
2.	Short Cases (2) 75 marks each	150
3.	Procedure	50
4.	Grand Viva including Instruments/Radiology/Pathology	100
Total		400

### 8. Job Responsibilities

#### ❖ Outdoor Patient (OPD) Responsibilities

- The working of the residents in the OPD should be fully supervised.
- They should evaluate each patient and write the observations on the OPD card with date and signature.
- Investigations should be ordered as and when necessary using prescribed forms.
- Residents should discuss all the cases with the consultant and formulate a management plan.

- Patient requiring admission according to resident's assessment should be shown to the consultant on duty.
- Patient requiring immediate medical attention should be sent to the casualty services with details of the clinical problem clearly written on the card.
- Patient should be clearly explained as to the nature of the illness, the treatment advice and the investigations to be done.
- Resident should specify the date and time when the patient has to return for follow up.

#### ❖ In-Patient Responsibilities

Each resident should be responsible and accountable for all the patients admitted under his care. The following are the general guidelines for the functioning of the residents in the ward:

- Detailed work up of the case and case sheet maintenance;
- He/She should record a proper history and document the various symptoms. Perform a proper patient examination using standard methodology. He should develop skills to ensure patient comfort/consent for examination. Based on the above evaluation he/she should be able to formulate a differential diagnosis and prepare a management plan. Should develop skills for recording of medical notes, investigations and be able to properly document the consultant round notes.
- To organize his/her investigations and ensure collection of reports.
- Bedside procedures for therapeutic or diagnostic purpose.
- Presentation of a precise and comprehensive overview of the patient in clinical rounds to facilitate discussion with senior residents and consultants.
- To evaluate the patient twice daily (and more frequently if necessary) and maintain a progress report in the case file.
- To establish rapport with the patient for communication regarding the nature of illness and further plan management.
- To write instructions about patient's treatment clearly in the instruction book along with time, date and the bed number with legible signature of the resident.
- All treatment alterations should be done by the residents with the advice of the concerned consultants and senior residents of the unit.

#### ❖ Admission day

Following guidelines should be observed by the resident during admission day.

- Resident should work up the patient in detail and be ready with the preliminary necessary investigations reports for the evening discussion with the consultant on duty.
- After the evening round the resident should make changes in the treatment and plan out the investigations for the next day in advance.

#### ❖ Doctor on Duty

- Duty days for each Resident should be allotted according to the duty roster.
  - The resident on duty for the day should know about all sick patients in the wards and relevant problems of all other patients, so that he could face an emergency situation effectively.
  - In the morning, detailed over (written and verbal) should be given to the next resident on duty. This practice should be rigidly observed.
  - If a patient is critically ill, discussion about management should be done with the consultant at any time.
  - The doctor on duty should be available in the ward through out the duty hours.
- ❖ **Care of Sick Patients**
- Care of sick patients in the ward should have precedence over all other routine work for the doctor on duty.
  - Patients in critical condition should be meticulously monitored and records maintained.
  - If patient merits ICU care then it must be discussed with the senior residents and consultants for transfer to ICU.
- ❖ **Resuscitation skills**
- At the time of joining the residency programme, the resuscitation skills should be demonstrated to the residents and practical training provided at various work stations.
- Residents should be fully competent in providing basic and advanced cardiac life support.
  - They should be fully aware of all advanced cardiac support algorithms and be aware of the use of common resuscitative drugs and equipment like defibrillators and external cardiac pacemakers.
  - The resident should be able to lead a cardiac arrest management team.
- ❖ **Discharge of the Patient**
- Patient should be informed about his/her discharge one day in advance and discharge cards should be prepared 1 day prior to the planned discharge.
  - The discharge card should include the salient points in history and examination, complete diagnosis, important management decisions, hospital course and procedures done during hospital stay and the final advice to the patient.
  - Consultants and DM Residents should check the particulars of the discharge card and counter sign it.
  - Patient should be briefed regarding the date, time and location of OPD for the follow up visit.
- ❖ **In Case of Death**

- In case it is anticipated that a particular patient is in a serious condition, relatives should be informed about the critical condition of the patient beforehand.
- Residents should be expected to develop appropriate skills for breaking bad news and bereavements.
- Follow up death summary should be written in the file and face sheet notes must be filled up and the sister in charge should be requested to send the body to the mortuary with respect and dignity from where the patient's relatives can be handed over the body.
- In case of a medico legal case, death certificate has to be prepared in triplicate and the body handed over to the mortuary and the local police authorities should be informed.
- Autopsy should be attempted for all patients who have died in the hospital especially if the patient died of an undiagnosed illness.

#### ❖ Bedside Procedures

The following guidelines should be observed strictly:

- Be aware of the indications and contraindications for the procedure and record it in the case sheet. Rule out contraindications like low platelet count, prolonged prothrombin time, etc.
- Plan the procedure during routine working hours, unless it is an emergency. Explain the procedure with its complications to the patient and his/her relative and obtain written informed consent on a proper form. Perform the procedure under strict aseptic precautions using standard techniques. Emergency tray should be ready during the procedure.
- Make a brief note on the case sheet with the date, time, nature of the procedure and immediate complications, if any.
- Monitor the patient and watch for complications(s).

#### ❖ OT responsibilities

- The 1<sup>st</sup> year resident observes the general layout and working of the OT, understands the importance of maintaining sanctity of the OT, scrubbing, working and sterilization of all the OT instrument, know how of endoscopes. He/ She is responsible shifting of OT patients, for participating in surgery as 2<sup>nd</sup> assistant and for post operative management of patient in recovery and in ward. The 2<sup>nd</sup> year resident is responsible for pre op work up of the patient, surgical planning and understanding the rationale of surgery. He/she is the first assistant in surgery and is responsible for anticipating intra op and post op complications and managing them. The final year resident should be able to perform minor/medium/major surgeries independently and assist in medium/major/extra major surgeries. He/she should be able to handle all emergencies and post op complications independently and is responsible for supervision and guidance of his/her juniors.

### ♦ **Medico-Legal Responsibilities of the Residents**

- All the residents are given education regarding medico-legal responsibilities at the time of admission in a short workshop.
- They must be aware of the formalities and steps involved in making the correct death certificates, mortuary slips, medico-legal entries, requisition for autopsy etc.
- They should be fully aware of the ethical angle of their responsibilities and should learn how to take legally valid consent for different hospital procedures & therapies.
- They should ensure confidentiality at every stage.

## **9. Suggested Books**

### **9.1. Books**

- ♦ Campbells Urology
- ♦ Glenns Urology
- ♦ Year book of Urology
- ♦ Recent advances in Urology
- ♦ Emmetts Clinical Uroradiology
- ♦ Mc Anrich Trauma of Genitourinary Tracts
- ♦ Libertino-Pediatric And Adult Reconstructive Urologic Surgery
- ♦ Richie & Damico-Urologic Oncology
- ♦ Stokly-Handbook of urology diagnosis and therapy
- ♦ Allen D Seftel-male and female sexual dysfunction.

### **9.2. Journals**

- ♦ Urological clinics of North America
- ♦ British Journal of Urology
- ♦ Journal of endourology
- ♦ Journal of Urology

## **10. MODEL TEST PAPERS**

## MODEL TEST PAPERS MCh Urology

### Paper - I

#### BASIC SCIENCES AS RELATED TO UROLOGY

Maximum Marks : 100

Time : 3 Hours

- Attempt ALL questions.
- Answer each question and its parts in **SEQUENTIAL ORDER**.
- ALL questions carry equal marks.
- Illustrate your answer with **SUITABLE DIAGRAMS**.

Q1:-Write a note on Genitourinary Tuberculosis and its management ?

Q2:-Write a note on pathophysiology of erectile dysfunction and its management?

Q3:-Write are the urological implications of AIDS on genitourinary system and its management?

Q4:-Write a note on evaluation & management of upper urinary tract calculi?

Q5:-Write a note on Neurogenic & Non neurogenic urinary bladder?

Q6:-Write a note on evaluation & management of BPH?

Q7:- Write a note on Testicular cancer & its management?

Q8:-Write note on evaluation & management of male erectile dysfunction?

Q9:- Write not an-Etiology, Pathophysiology & epidemiology of urinary calculi?

Q10:- Note on Peyronies Disease?

**MODEL TEST PAPERS****MCh Urology****Paper - II****Clinical Urology****Maximum Marks : 100****Time : 3 Hours**

- Attempt **ALL** questions.
- Answer each question and its parts in **SEQUENTIAL ORDER**.
- **ALL** questions carry equal marks.
- Illustrate your answer with **SUITABLE DIAGRAMS**.

**Q1:- Write about complications of PCNL ?**

**Q2:- Write about vascular surgeries for erectile dysfunction?**

**Q3:- Write about surgery for penile & urethral carcinoma?**

**Q4:- Surgical management of upper urinary tract calculi?**

**Q5:- Write about Laparoscopic surgery of renal tumors?**

**Q6:- Write about injection therapy for urinary incontinence?**

**Q7:- Complications of TURP?**

**Q8:- Note on anterior urethoplasty?**

**Q9:- Note on Radical Perineal Prostatectomy?**

**Q10:- Surgical Technique of exstrophy reconstruction?**

**MODEL TEST PAPERS****MCh Urology****Paper - III****Operative Urology**

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**Maximum Marks : 100****Time : 3 Hours**

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- Attempt **ALL** questions.
  - Answer each question and its parts in **SEQUENTIAL ORDER**.
  - **ALL** questions carry equal marks.
  - Illustrate your answer with **SUITABLE DIAGRAMS**.
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Q1:-Role of Diagnostic laparoscopy in urology?

Q2:-Newer contrast media pertaining to urology?

Q3:-Evaluation of patient of Interstitial cystitis?

Q4:-Urodynamic evaluation in voiding dysfunction?

Q5:-Ureteroscopy & its uses?

Q6:-Percutaneous approaches to upper urinary tract?

Q7:-Evaluation of Adrenal mass?

Q8:-Electrical stimulation & Neuromodulation in emptying & storage factor of Urinary Bladder?

Q9:-Uses of TRUS in urology?

Q10:-Tumor markers in Prostate cancer?

**MODEL TEST PAPERS****MCh Urology****Paper - IV****Recent Advances In Urology**

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**Maximum Marks : 100****Time : 3 Hours**

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- Attempt **ALL** questions.
  - Answer each question and its parts in **SEQUENTIAL ORDER**.
  - **ALL** questions carry equal marks.
  - Illustrate your answer with **SUITABLE DIAGRAMS**.
- 

Q1:-Newer management techniques of Interstitial cystitis?

Q2:-Note on ablative therapies of renal tumours?

Q3:-Cryotherapy of prostate cancer?

Q4:-Molecular genetics & cancer biology of renal cell carcinoma?

Q5:-Tissue engineering perspectives for reconstructive surgery in urology?

Q6:-Role of immune modulators in renal cell carcinoma?

Q7:-Newer techniques in management of male infertility?

Q8:-Note on orthotopic urinary diversion?

Q9:-Tumor markers in urology?

Q10:-Recent advances in treatment of interstitial cystitis?

  
Registrar

Approved **MGM INSTITUTE OF HEALTH SCIENCES**  
vide (DEEMED UNIVERSITY u/s 3 of UGC Act, 1956)  
KAMOTHE, NAVI MUMBAI

Board of Management (BOM 32/2013)  
dated 29<sup>th</sup> OCTOBER, 2013

## UROLOGY — M Ch

### PREAMBLE

The objective of M Ch (Urology) degree course is to produce highly competent medical manpower in Urology. The training ingredients should provide in-depth knowledge of the entire urology and relevant basic allied subjects. The course is expected to bring about a change in attitude towards better scientific approach with logic and analysis. More stress should be given to development of psychomotor skills. This should culminate in shaping of a shrewd clinician, confident surgeon and a knowledgeable teacher insured to basic research methodology. Basis of an ideal training programme will be a powerful urology service complete in every sense. Today, a urology-teaching department should include complete adult and pediatric urology services with fully developed subspecialties such as gynaecologic urology, uro-oncology, neuro-urology, andrology & sexual dysfunction, newer modalities of stone management like endourological techniques and extracorporeal shock wave lithotripsy and renal transplantation.


### ELIGIBILITY

M S in (General Surgery) from any recognized University or its equivalent qualifications recognized by the Medical Council of India.

### SYLLABUS

It will cover wide spectrum of the diseases of urogenital system & retroperitoneum. Apart from the clinical aspect of these subjects, candidate has to acquire indepth knowledge of the related basic subjects like applied; anatomy; embryology, physiology; biochemistry, pharmacology; pathology, microbiology epidemiology, immunology etc.

1. Anatomy and Embryology of GU tracts, adrenal & retroperitoneum.
2. Applied physiology and biochemistry pertaining to Urology, Nephrology, renal transplantation and renovascular hypertension.
3. Investigative urology & Genito-urinary radiology and imaging including nuclear medicine.
4. Male Infertility, Andrology and Urological endocrinology.

  
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5. Sexual dysfunction- investigations and management.
6. Perioperative care, management of urological complications and care of the critically ill patients.
7. Urodynamics and Neurology.
8. Genito-urinary trauma.
9. Urolithiasis-Medical, Biochemical & Surgical aspects.
10. Uro-oncology-Adult & Paediatric
11. Reconstructive Urology.
12. Paediatric Urology-congenital malformations and acquired diseases.
13. Urinary tract infections and sexually transmitted diseases.
14. Obstructive Uropathy.
15. Renal transplantation (including transplant immunology medical & surgical aspects).
16. Renovascular Hypertension.
17. Gynaecological urology.
18. Newer developments in urology.
19. Operative Urology-open & endoscopic
20. Endourology
21. Behavioural and social aspects of urology.
22. Neonatal problems in Urology.
23. Electrocoagulation, lasers, fibre optics, instruments, catheters, endoscopes etc.
24. Retroperitoneal Diseases & Management.
25. Medical aspects of the kidney diseases.
26. Laparoscopic Urologic Surgery.

Apart from above mentioned subjects, each candidate should have basic knowledge of the following:

1. Biostatistics & Epidemiology.
2. Computer Sciences.
3. Experimental & Research methodology and Evidence Based Medicine.
4. Scientific presentation.
5. Cardio-pulmonary resuscitation.
6. Ethics in medicine.

## TRAINING & TEACHING METHODOLOGY

Besides didactic lectures (delivered by the faculty members, national & international visiting teachers, seminar symposium and journal clubs is to be organized. Problem oriented training to be given in the form of case discussions, ward rounds, inter-disciplinary meetings and department statistical meetings. Every candidate is supposed to discuss a minimum of 2 clinico-pathological conferences. Practical training is to be imparted by full time residency training programme, where a trainee will be given full responsibility of the patients. He will be encouraged to improve and develop his decision-making ability under supervision of teachers.

### Research

Each candidate has to carry out two dissertation or studies for thesis, which should be acceptable for publication in a Indian Journal or any International Journal.

1. Experimental Research Project – One

May be a) Animal lab work or

b) Associated with a Basic science Dept.

2. Clinical Research Project – At least one

## TRAINING IN OPERATIVE UROLOGY

Special attention to be paid to improve the operative skill of the candidate. He shall be trained to take independent operative decisions. In a time bound schedule an opportunity will be accorded to perform all the major open as well as endoscopic procedures so as to let him develop mastery in the essential procedures. Candidates will be required to maintain a logbook of operative procedures with details of complications, if any, and their management. This will be reviewed every three months. Completed logbook is to be submitted before the practical examination and will be reviewed by the external examiners.

### First Two Years

Each Candidate should spent time for basic research specially related to animal laboratory or in collaboration with basic department i.e. biochemistry, biotechnology and ratholog.

### 0-6 Months

A candidate is supposed to master following procedures.

1. Cystourethroscopy, filiform, dilatation, retrograde pyelography. Interpretation of normal and abnormal findings in relation to gross inflammations, obstructive and neoplastic changes in the lower urinary tract.
2. Minor Urological Procedures:  
Needle biopsy of the prostate, dilatation, trocar cystostomy, open cystostomy, orchiectomy, circumcision, meatotomy/Meatoplasty Arterio-venous shunts, Excision of urethral caruncle.
3. Uro-Radiological & Imaging Techniques:  
During this period a candidate should perform various uroradiological & Imaging procedures like Retrograde Urethrograms & Micturating, Cystourethrogram, cystogram, triplecystogram,

nephrostogram, Whitaker test, sinogram, vasoseminography, antegrade pyelography, interpretation of Ultrasound & computerized tomography's scans and renography, renal angiography including Digital Substraction Angiography & venography.

### **06-09 Months**

A candidate should learn, perform and interpret urodynamic studies like Cystometrogram, electromyography & Urethral pressure profile & Video urodynamics. He will also perform and interpret various tests of sexual dysfunction such as dynamic cavernosography, papavarin test, Penil-Brachial Index, Nocturnal penile tumescence, regiscan, sacral latency period and other evoked potential studies.

### **9-23 Months**

He will assist and perform following procedures.

(a) **Endoscopic Surgery:**

Internal urothrotomy, Bladder neck Incision, Litholopaxy, cystolithotripsy, insertion & retrieval of bladder & ureteral stent, ureteral meatotomy, endoscopic suspension of bladder neck, Transurethral resection of bladder tumour.

(b) **Surgical Procedures:**

Simple nephrectomy, radical nephrectomy, cystolithotomy ureterolithotomy, pyelolithotomy, nephrostomy, pyeloplasty, various urethroplasties. Retropubic & a transvesical prostatectomy, surgery for undescended testis, partial and total amputation of penis, extended pyelolithotomy, VVF repair.

### **24-36 Months**

**Open Surgery**

Candidate should learn more complex surgical procedures like-transpubic urethroplasty, Hypospadias repair, Augmentation cystoplasty, Anatomic Nephrolithotomy under hypothermia, Boari's flap procedure, exstrophy closure, urinary diversion, ureteroneocystostomy, partial and total cystectomy, nephroureterectomy, penile prosthesis, Artificial urinary sphincter, Microsurgical Vasoepididymostomy, and vasovasostomy, Undiversion, Renal transplant surgery and AV fistulae, retroperitoneal lymphadenectomy.

### **Endoscopic Procedure**

Trusurethral resection of prostate, percutaneous nephrolithotomy, Uretero-rensoscopy, Laser Surgery, other endourological procedures etc.

Efforts will be made that candidate is able to perform the following minimum stipulated number of procedures within three years of his training.

1. Endoscopies	100
2. Urethroplasties	5
3. Internal urethrotomy	20
4. Internal tract reconstructions	10
5. Repair of vesicovaginal fistulae	5
6. Pyeloplasties	5

## Course and Curriculum of M Ch Urology

7. Hypospadias repair	5
8. Transurethral Resection of Prostate	25
9. Uretero-Renoscapy	25
10. Percutaneous Nephrolithotomy & endopyelotomy	15
11. Donor Nephrectomies	5
12. Receptient Surgery	2

In addition to above mentioned procedures candidates will perform/assist minimum of two or five of each of following procedures depending upon the availability of the case material

- Nephrectomy for pyonephrosis-Surgical treatment of stress urinary incontinence
- Radical Cystoprostatectomy
- Radical Nephrectomy
- Ureteroneocystostomy
- Retroperitoneal lymphnode dissection-Ileal replacement
- Different type of Urinary diversion of orthotopic Neobaldder- Surgical mamagement of Renal and Urethral trauma
- Transpubic urethroplasty
- Augmentation cystoplasty
- Nephroureteractomy – Undiversion
- Anatomic Nephrolithotomy
- Laparoscopic Urologic Surgery
- Paediatric surgical procedures.

### ***In course Training***

Since it will be a full time residency cum M Ch course, a candidate will be responsible for the total care of the patients. He will be encouraged to take independent decisions. Every day there will be atleast one hour academic activity to a maximum of 10 hours/week in which all the faculty members & residents will participate. Case discussor will take place weekly with 3<sup>rd</sup> year resident as a moterator.

Other academic activities like journal clubs, seminars, group discussions statistical meetings will be a fortnightly feature where deaths, complications, operations and consultations rendered will be discusse.d consultation to the other department and in emergency will only be attended by the IInd & IIIrd year Senior Residents. Consultations given to other departments should also be discussed every morning with the respective consultants. In OPD a candidate will see the cases independently and will make all the pertinent notes. In problematic cases and a special referral, it is mandatory to show the case to the respective consultant. A candidate will not be allowed to provide independent consultations for first six months.

A candidate will have to attend all postmortem examination done for the department.

Interdepartmental meetings like uroradiology, uronephrology, uroradiotherapy & medical oncology, uro pathology, uroimaging will provide an opportunity for open discussion on a common subject and it will also provide an opportunity to learn views of the specialists on these subjects.

### **Posting**

A candidate will be sent to Nephrology department for one month to learn medical aspect of Kidney diseases (except the renal transplantation). This posting should be after one to 1.1/2 year after joining the course.

It is highly desirable to formulate a reasonable teaching curriculum for this posting and a candidate is to be evaluated by the Nephrologist at the end of the posting. An unsuccessful candidate has to repeat his posting.

### **Exchange Programme**

In view of expanding field of urology, it is difficult to see, observe and have training in all newer subspecialties. Therefore, it is imperative to inculcate exchange programme and resident should be rotated to two or three centers as per advise by the department committee. It is also suggested that department weak in some subspeciality should invite visiting professor from other centers to strengthen the course.

## **BOOKS AND JOURNALS**

The following books, journals and periodicals should be made available through Central/Departmental Library for perusal of residents so as to enable them to keep abreast with latest developments in the field of Urology. It is also important that department should have an Internet facility which would enable residents to browse and use medline search.

### **General Urology**

#### *Book*

1. Campbell urology-3 Volumes Edited by
2. Scientific Basis of Urology
3. Current Urological Therapy
4. Obstructive Uropathy
5. Urogenital trauma
6. Text book of Urology
7. Adult & Paediatric Urology

#### *Editor*

Walgh, et al  
Mundy  
Kaufman  
O'Reilly  
Macaminch  
Whitefield & Hendry  
Gillenwater et al

### **Paediatric Urology**

1. Pediatric Urology
2. Paediatric Urology

Kelalis & King - 2 vol.  
Whitakar

### **Uro-oncology**

1. Genito-urinary cancer management
2. Genitourinary cancer
3. Testicular cancer

Backeman & Paulson  
Dekerrion et al  
Javadopor

### ***Urodynamics***

1. Urodynamics principle & practise
2. Controversy in Neurourology
3. Neurourology & urodynamics

Mundy  
Barret & wein  
Bradly & Hald

### ***Stone Diseases***

1. Stone disease
2. Endourology
3. Endourology
4. Extracorporeal shock wave Lithotripsy
5. Endourology

Diagnosis & management by Rous  
Clayman et.al  
Carson  
Gravertstein  
Arthur Smith

### ***Infertility***

1. Male Infertility
2. Reproductive infertility
3. Microsurgery in male and female

Amelar  
Silber

### ***Reconstructive and Female Urology***

1. Operative Gynaecology
2. Female urology
3. Urinary Incontinence
4. Urogynaecology & urodynamics
5. Reconstructive urologic surgery

Te Linde  
Blandy  
Dat. D.O. 'Donnel  
Obstargard & Bent  
Libertino

### ***Renal Transplantation***

1. Kidney transplantation
2. Renal transplantation
3. Introduction to Dialysis
4. Vascular access in Haemodialysis

Peter morris  
Garovoy & Guttman  
Logan  
Bell et Al

### ***Operative Urology***

1. Glen's operative urology
2. Urologic Endoscopy
3. Transurethral surgery

Bagley et al  
Maurmayer

### ***Laparoscopy***

1. Laparoscopic urology
2. Urologic Laparoscopy
3. Laparoscopic Urologic Surgery

Ralph V. Clayman, E.M. McDougall  
Sakti Das  
A.K. Hemal

Uroradiology- Emmett's -Witten-Clinical Uroradiology 3 volumes

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### ***Journals***

- Indian J. Urology
- Journal of Urology
- British J. Urology
- Neurourology & Urodynamics
- Urology (Gold Journal)
- European Urology
- Urologia internationalis
- Scandinavian J. Urology & Nephrology
- Transplantation
- Transplant Proceedings
- Urological Research
- Urologic Radiology
- World Journal of Urology

### ***Periodicals***

- Urological clinics of North America
- Seminars in Urology
- Controversy in Urology
- Recent Advances in Urology
- Year Book of Urology
- Modern Trend in Urology

## MARKLIST FOR PRACTICAL AND VIVA-VOCE EXAMINATION

EXAMINATION FOR: M.Ch. UROLOGY

DATE OF EXAMINATION: \_\_\_\_\_

<u>NAME OF EXAMINER</u>	<u>COLLEGE</u>	<u>SIGNATURE WITH DATE</u>
1.		
2.		
3.		
4.		

**Resolution passed in BOM – 48/2017, dated 24/01/2017**

**Item No. 5.10: BOS (Superspeciality) dated 16.09.2016**

- d) **Superspeciality residents should be deputed for a period of three months in other Institutions for training**

**Resolution No. 5.10(d):** Superspeciality residents can be deputed in hospitals under MGMIHS for additional training if needed for skill enhancement.

**Resolution No. 3.9.2 of BOM-52/2018:** Resolved to accept the following in all Superspeciality University Theory examinations, with effect from batch appearing in University August 2018 examination onwards:

- Paper – I (100 marks) :10 short notes out of 11 (10 marks each)
- Paper – II (100 marks) :10 short notes out of 11 (10 marks each)
- Paper – III (100 marks) :10 short notes out of 11 (10 marks each)
- The existing pattern for paper IV to be followed.

**Resolution No. 3.9.3 of BOM-52/2018:** Resolved to have following pattern in all Superspeciality University Practical examinations, with effect from batch appearing in University August 2018 examination onwards, while keeping the remaining pattern same:

Long case : 1X100 =100 marks  
Short case : 4X25 = 100 marks

**Resolution No. 4.5.4.2 of BOM-55/2018:** Resolved to have 10 short notes out of 11 (10 marks each) in all the papers in university examination for PG courses including superspeciality. To be implemented from batch appearing in April/May 2019 examination onwards for MD/MS/Diploma and August/September 2019 examination onwards for superspeciality.

**Resolution No. 4.13 of BOM-55/2018: Resolved as follows:-**

- (i) Slow learners must be re-designated as potential learners.
- (ii) Students scoring less than 35% marks in a particular subjects/course in the 1<sup>st</sup> formative exam are to be listed as potential learners. These learners must be constantly encouraged to perform better with the help of various remedial measures.
- (iii) Students scoring more than 75% marks in a particular subjects/course in the 1<sup>st</sup> formative exam are to be listed as advanced learners. These learners must be constantly encouraged to participate in various scholarly activities.