

Curriculum

DrNB Super Specialty



Urology

- ◆ Objectives of the Programme
- ◆ Teaching and Training Activities
- ◆ Syllabus
- ◆ Competencies
- ◆ Log Book
- ◆ Recommended Text Books and Journals

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I. OBJECTIVES OF THE PROGRAMME:

1) PROGRAMME GOAL

- The goal of postgraduate medical education in DNB urology shall be to produce a competent expert in the field of urology and medical teachers in urology.
- The goal is to produce highly competent medical man power 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 Program will be a powerful urology service complete in every sense.

2) PROGRAMME OBJECTIVES

Objectives Attend of the DNB 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;

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- Plan and deliver comprehensive treatment for illness in adults & children 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 counseling 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, 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;
 - Organize and supervise the desired managerial and leadership skills;
 - Function as a productive member of a team engaged in health care, research and education.

 - Practice the specialty of urology surgery in keeping with the principles of professional ethics
 - Recognize and identify the various surgical problems
 - Independently perform basic surgical procedures
 - Organize and supervise the desired managerial and leadership skills
 - Recognize the importance of Urology in the context of the health needs of the community and the national priorities in the health sector.
 - Demonstrate sufficient understanding of the basic sciences relevant to Urology.
 - Diagnose and manage majority of the conditions in Urology on the basis of clinical assessment, and appropriately selected and conducted investigations.

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- Plan and advice measures for the prevention and rehabilitation of patients suffering from disease and disability related to Urology.
 - Develop skills in using educational methods and techniques as applicable to the teaching of medical/nursing students, general physicians and paramedical health workers.
 - Function as an effective leader of a health team engaged in healthcare, research or training.

3) NATIONAL OBJECTIVES:

- Be able to work in any hospital in India with minimum of facilities and be able to diagnose urological diseases, treat wittly and efficiently and if appropriate refer both on an elective and emergency basis.
- Be able to start a urological service of maximum effectiveness with available resources.
- Be able to work effectively and contribute to National Programs like National Family Welfare Program, National Cancer Control Program, programs for prevention and control of non-communicable urological diseases, etc.

4) INTERNATIONAL OBJECTIVES:

Be able to participate in international conferences, workshops etc. and bring honour and fame to the country.

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 department and subspecialties)-once a week
5. Faculty lecture teaching-once a month
6. Clinical Audit-Once a Month
7. A poster and have one oral presentation at least once during their training period in a recognized conference.

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 unit discussions.

The training program would focus on knowledge, skills and attitudes (behavior), all essential components of education. It is being divided into the 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 under graduate 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 NBE 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 executions also to learn various aspects of research.

III. SYLLABUS

The major components of the Postgraduate curriculum shall be:

- Theoretical knowledge
- Practical and clinical skills
- Thesis skills.
- Attitudes including communication skills
- Training in research methodology.

Theory

Anatomy

Surgical Anatomy of the Retro peritoneum, Kidneys and Ureters

- Anatomy and Embryology of GU tracts, adrenal & retroperitoneum.
- Applied physiology and biochemistry pertaining to Urology, Nephrology, renal transplantation and renovascular hypertension.
- Investigate veurology&Genito-urinary radiology and imaging including nuclear medicine.
- Male Infertility, Andrology and Urological endocrinology
- Sexual dysfunction-investigations and management.

Infections and Inflammation

1. Infections of the Urinary Tract.
2. Schaeffer Inflammatory Conditions of the Male Genitourinary Tract
3. Interstitial Cystitis and Related Disorders
4. Sexually Transmitted and Associated Diseases Urological Implications of AID Sand Related Conditions
5. Cutaneous Diseases of the External Genitalia
6. Tuberculosis and Other Opportunistic Infections of the Genitourinary System
 - Perioperative care, management of urological complications and care of the critically ill patients.
 - Uro dynamics and Neurology.
 - Genito-urinary trauma.

Urolithiasis-Medical, Biochemical & Surgical aspects

- Upper & Lower Urinary Tract Calculi
- Evaluation, Diagnosis & Treatment
- Surgery-PCNC, Intracanoopy, Cystoscopy, ESWL

Pediatric Urology

1. Normal and Anomalous Development of the Urinary Tract Renal Function in the Fetus Congenital Obstructive Uropathy
2. Perinatal Urology Evaluation of Pediatric Urologic Patient)
3. Renal Disease in Childhood
4. Urinary Tract Infections in Infants and Children
5. Anomalies of the Kidney Renal Dysplasia and Cystic Disease of Kidney
6. Anomalies and Surgery of the Ureter opelvic Junction
7. Ectopic Ureter Vesicoureteral Reflux
8. Prune-Belly Syndrome
9. Exstrophy and Epispadias
10. Complex Surgical Technique for One-Stage Exstrophy
11. Reconstruction Bladder Anomalies in Children
12. Posterior Urethral Valves and Other Urethral Anomalies
13. Voiding Dysfunction in Children: Neurogenic and Non-neurogenic Urinary Tract Reconstruction
14. Hypospadias Abnormalities of External Genitalia in Boys Abnormalities of Testis and Scrotum : Surgical Management Sexual Differentiation : Normal and Abnormal Surgical Management of Intersex
15. Pediatric Oncology Pediatric Endourology and Laparoscopy Pediatric

Genitourinary Trauma

- Urinary tract infections and sexually transmitted diseases.
- Obstructive Uropathy.
- Renal transplantation (including transplant immunology medical & surgical aspects).

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 Supra pubic Open Radical Prostatectomy
- Epidemiology, Etiology, and Prevention of Prostate Cancer
- Pathology of Prostatic Neoplasms Ultra sonography and Biopsy of the Prostate Tumor Markers in Prostate Cancer

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- Early Detection, Diagnosis, and Staging of Prostate Cancer
 - Definitive Therapy of Localized Prostate Cancer: Outcomes Expect and Management of Prostate Cancer
 - Anatomic Retro grade 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

Kidney, Bladder, Genitalia

- Anatomy
- Evaluation & Diagnosis
- Diseases
 - Congenital
 - Infection
 - Oncology

Neuro –Urology

- 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 Over active 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

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- 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

The Adrenals

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

Newer developments in Genito-Urinary Surgery

- Electrocoagulation, lasers, fiberoptics, instruments, catheters, endoscopes etc.
- Energy Sources In Urology
- Robotics surgery
- Nutrition in Urology
- Molecular and Cellular Biology Basic
- Principles of Immunology
- Molecular Genetics and Cancer Biopsy
- Tissue Engineering Perspectives for Reconstructive Surgery

Clinical Decision Making

- Evaluation of the Urologic Patient
- History, Physical Examination, and Urinalysis Urinary Tract Imaging

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.
 - Biostatistics, Research Methodology and Clinical Epidemiology
 - Ethics
 - Medico legal aspects relevant to the discipline
 - Health Policy issues as may be applicable to the discipline

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, bio technology and radiology.

Minor Urological Procedures:

- Needle biopsy of the prostate,
- Dilatation of Urethra
- Trocar cystostomy
- Open cystostomy
- Orchiectomy
- Circumcision
- Meatotomy/ Meatoplasty
- Arterio-venous shunts
- Cystoscopy

Uro-Radiological & Imaging Techniques: During this period a candidate should perform various uroradiological & Imaging procedures like

- Retro grade Urethrogram & Micturating
- Cystourethrogram
- 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,

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- 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&atransvesical prostatectomy,
- Surgery for underscended testis
- Partial and total amputation of penis,
- Extended pyelolithotomy,
- VVFrepair

24-36 Months

Open Surgery

Candidate should learn more complex surgical procedures like

- Transpubicurethroplasty,
- Hypospadias repair,
- Augmentation cystoplasty,
- AnatomicNephrolithotomy under hypothermia,
- Boari's flap procedure,
- Exstrophy closure,
- Urinary diversion,
- ureteroneocystostomy
- partial and total cystectomy,
- nephroureterectomy
- penile prosthesis
- Artificial urinary sphincter
- Microsurgical Vasoepididmostomy and vasovasostomy,.

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- Undiversion,
 - Renal transplant surgery and AV fistulae,
 - Retroperitoneal lymphadenectomy.
 - Endoscopic Procedure Trusurethral resection of prostate
 - Percutaneous nephrolithotomy,
 - Uretero-rensoscopy,
 - Laser Surgery,
 - Other endourolocial 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.

• Endoscopies	100
• Urethroplasties	5
• Internal urethrotomy	20
• Internal tractreconstructions	10
• Repair of vesicovaginal fistulae	5
• Pyeloplasties	5
• Hypospadias repair	5
• Transurethral Resection of Prostate	25
• Uretero-Renoscopy	25
• Percutaneous Nephrolithotomy & endopyelotomy	15
• Donor Nephrectomies	5
• 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 lymph node dissection-Ileal replacement
- Different type of Urinary diversion of ortho topic Neobaldder-Surgical management of Renal and Urethral trauma
- Transpubic urethroplasty
- Augmentation cystoplasty
- Nephroureterectomy–Undiversion
- Anatomic Nephrolithotomy

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- Laparoscopic Urologic Surgery
 - Paediatric surgical procedures.
 - In course Training Since it will be a fulltime residency cum DNB course, a candidate will be responsible for the total care of the patients.
 - He will be encouraged to take independent decisions.
 - Everyday 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 discussion will take place weekly with 3rd year resident as a moderator
 - 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.
 - Interdepartmental meetings like uroradiology, uro-nephrology, uroradiotherapy & medical oncology, uropathology, 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.

Schedule of Postings

Inter Disciplinary Posting – It is suggested that there should be posting in the following departments.

- Radiology–2weeks
- Interventional Radiology–2weeks
- Pathology–2weeks
- Nephrology–2weeks
- 2 week exchange with another teaching Urology department.

Exchange Programme: In view of expanding field of urology, it is difficult to see, observe and have training in all newer sub specialities. Therefore, it is imperative to include exchange programme and resident should be rotated to two or three centers as per advice 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.

Practical:

- History, examination and writing of records:
- History taking should include the back ground 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 & Ultra sound guided procedures.
- Clinical Teaching General, Physical and specific examinations of Genitourinary should be mastered.
- The resident should 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 Micturating Urethrogram.
- 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.

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.

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- 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 followup. 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:

- a. Detailed work up of the case and case sheet maintenance:
- b. 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
- c. To organize his/her investigations and ensure collection of reports.
- d. Bedside procedures for therapeutic or diagnostic purpose.
- e. Presentation of a precise and comprehensive overview of the patient in clinical rounds to facilitate discussion with senior residents and consultants.
- f. To evaluate the patient twice daily (and more frequently if necessary) and maintain a progress report in the case file.
- g. To establish rapport with the patient for communication regarding the nature of illness and further plan management.
- h. 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.
- i. 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.

- a. 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.
- b. 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

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- a. Duty days for each Resident should be allotted according to the duty roster.
 - b. The resident on duty for the day should know about all sick patients in the ward and relevant problems of all other patients, so that he could face an emergency situation effectively.
 - c. In the morning, detailed over (written and verbal) should be given to the next resident on duty. This practice should be rigidly observed.
 - d. If a patient is critically ill, discussion about management should be done with the consultant at any time.
 - e. The doctor on duty should be available in the ward throughout the duty hours.

Care of Sick Patients

- a. Care of sick patients in the ward should have precedence over all other routine work for the doctor on duty.
- b. Patients in critical condition should be meticulously monitored and records maintained.
- c. If patient merits ICU care then it must be discussed with the senior residents and consultants for transfer to ICU.

Resuscitation skills

- a. At the time of joining the residency programme, the resuscitation skills should be demonstrated to the residents and practical training provided at various workstations.
- b. Residents should be fully competent in providing basic and advanced cardiac life support.
- c. 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.
- d. The resident should be able to lead a cardiac arrest management team.

Discharge of the Patient

- a. 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.
- b. 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.

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- c. Consultants and PG Residents should check the particulars of the discharge card and counter sign it.
 - d. Patient should be briefed regarding the date, time and location of OPD for the follow up visit

In Case of Death

- a. 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 before hand.
- b. Residents should be expected to develop appropriate skills for breaking bad news and bereavements.
- c. Follow up death summary should be written in the file and face sheet notes must be filled up and the nurse 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.
- d. 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.
- e. Autopsy should be attempted for all patients who have died in the hospital especially if the patient died of a non diagnosed illness.

Bed side Procedures The following guidelines should be observed strictly:

- a. Be aware of the indications and contra indications for the procedure and record it in the case sheet. Rule out contraindications like low platelet count, prolonged prothrombin time, etc.
- b. 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.
- c. Make a brief note on the case sheet with the date, time, nature of the procedure and immediate complications, if any
- d. Monitor the patient and watch for complications(s).

OT responsibilities

- a. The 1st 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.

- b. He/She is responsible shifting of OTpatients, for participating in surgery as 2nd assistant and for post operative management of patient in recovery and inward.
- c. The 2nd year resident is responsible for pre op workup of the patient, surgical planning and understanding the rationale of surgery.
- d. He/she is the first assistant in surgery and is responsible for anticipating intra op and post op complications and managing them.
- e. The final year resident should be able toper form minor/medium/major surgeries independently and assist in medium/major/extra major surgeries.
- f. 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.

- a. 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.
- b. 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.
- c. They should ensure confidentiality at every stage

Internal Assessment

The performance of the resident during the training period should be monitored throughout the course and duly recorded in the logbooks as evidence of the ability and daily work of the student. Marks should be allotted out of100 as followed.

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, and 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 1st, 2nd 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.

IV. COMPETENCIES

- Possess complete clinical diagnostic skills for recognition of urological diseases.
- Possess complete knowledge of application of biochemical, microbiological and pathological tests in the diagnosis and management of urological diseases.
- Possess complete knowledge of the application and interpretation of imaging studies in the diagnosis and management of urological diseases.
- Performs imple imaging studies like basic ultra sound evaluation of the kidney, ureter, bladder and prostate, transrectal ultra sonography of prostate and seminal vesicles, retrograde and antegrade urethrogram, cystogram and voiding cystourethrogram, nephrostogram, retrograde ureteropyelogram, etc.
- Perform all commonly used urodynamic studies and apply and interpret the results appropriately.
- Be able to apply sound clinical judgment to plan cost effective investigation and management of most urologic diseases.
- Be able to medically treat most urologic diseases.
- Be able to use ESWL and manage complications arising out of its application.
- Have the skill to perform common outpatient urological procedures like urethralcatheterization, suprapubic cystostomy, urethral dilatation, prostate biopsy, ultrasound and fluoroscopy guided percutaneous nephrostomy and cyst aspiration, drainage of periurethral abscess, dorsal slit etc.,
- Be able to perform common urological endoscopic procedures like
 1. Diagnostic cystoscopy and bladder biopsy,
 2. Ureteral catheterization,
 3. Endoscopic urethrotomy,
 4. Ureteral stenting and stent removal,
 5. Foreign body removal from bladder,
 6. Cystolithotripsy,
 7. Bladder neck incision,

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8. Transurethral incision of prostate,
 9. Resection of small prostate and bladder tumors,
 10. Ureteroscopy and retrieval of ureteral calculi, etc.

Be able to perform common open ablative and reconstructive surgical procedures like

- a. nephrectomy
 - b. pyelolithotomy
 - c. ureterolithotomy
 - d. open prostatectomy
 - e. cystolithotomy
 - f. urethroplasties for simple urethral strictures
 - g. penectomy
 - h. orchiectomy
 - i. orchidopexy
- Manage effectively and efficiently common urological emergencies in the casualty outpatient department and wards including patients in other disciplines.
 - Manage effectively urological emergencies detected or occurring during surgery in other disciplines like bladder or ureteral injuries etc. during surgical, gynaecological procedures.
 - Possess understanding of recent advances in the subject of Urology and its allied specialities.
 - Possess working knowledge of consumables used in Urology and the upkeep and maintenance of the special equipment used in Urology especially the endoscopes.
 - Be able to conduct research work in the field of Urology both clinical and experimental and be able to critically analyse data as well as research papers.
 - Be able to teach Undergraduate students of MBBS, Postgraduate students of surgery as well as students of nursing and other paramedical courses the elements of Urology appropriate to them.
 - Be able to and have demonstrated ability to conduct research studies and presented the papers in conferences or published in journals.
 - Be able to recognize and refer appropriately cases that are beyond his competence.
 - Be able to work as a member of a team of medical and paramedical staff as well as be able to work as a team leader for effectively and efficiently carrying out urological services.

V. LOG BOOK

A candidate shall maintain a log book of operations (assisted / performed) during the training period, certified by the concerned postgraduate 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 before mentioned subjects were covered (with dates and the name of teacher(s) The candidate will maintain the record of all academic activities under taken by him/her in log book.

1. Personal profile of the candidate
2. Educational qualification/Professional data
3. Record of case histories
4. Procedures learnt
5. Record of case Demonstration/Presentations
6. 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.
7. In the absence of production of logbook, the result will not be declared.

VI. RECOMMENDED TEXT BOOKS AND JOURNALS

(It is also important that department should have an Internet facility which would enable residents to browse and use med line search.)

BOOKS

1. Campbell urology-3 Volumes Edited by Walgh, et al
2. Scientific Basis of Urology Mundy
3. Current Urological Therapy Kaufman
4. Obstructive Uropathy O'Reilly
5. Urogenital trauma Macaminch
6. Textbook of Urology Whitefield & Hendry
7. Adult & Paediatric Urology Gillenwater et al

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- **Paediatric Urology**
 8. Pediatric Urology Kelalis& King–2 vol.
 9. Paediatric Urology Whitakar

 - **Uro-oncology**
 10. Genito-urinary cancer management Backeman& Paulson
 11. Genito urinary cancer Dekerrion et al
 12. Testicular cancer Javadopor

 - **Urodynamics**
 13. Urodynamics principle &practise Mundy
 14. Controversy in Neurourology Barret &wein
 15. Neurourology&urodynamics Bradly &Hald

 - **Stone Diseases**
 16. Stone disease Diagnosis & management by Rous
 17. Endourology Claymanet.al
 18. Endourology Carson
 19. Extra corporeal shock want Lithotripsy Gravernstein
 20. Endourology Arthur Smith

 - **Infertility**
 21. Male Infertility Amelar
 22. Reproductive infertility Silber
 23. Micro surgery in male and female

 - **Reconstructive and Female Urology**
 24. Operative Gynaecology Te Linde
 25. Female urology Blandy
 26. Urinary Incontinence Dat. D. O.'Donnel
 27. Urogynaecology&urodynamicsObstargard& Bent
 28. Reconstructive urologic surgery Libertino

 - **Renal Transplantation**
 29. Kidney transplantation Peter morris
 30. Renal transplantation Garovoy&Guttman
 31. Introduction to Dialysis Logan

32. Vascular access in Haemodialysis Bell et Al

- **Operative Urology**

33. Glen's operative urology

34. Urologic Endoscopy Bagley et al

35. Trans urethral surgery Maurmayer

- **Laparoscopy**

36. Laparoscopic urology Ralph V. Clayman, E.M. McDougall

37. Urologic Laparoscopy Sakti Das

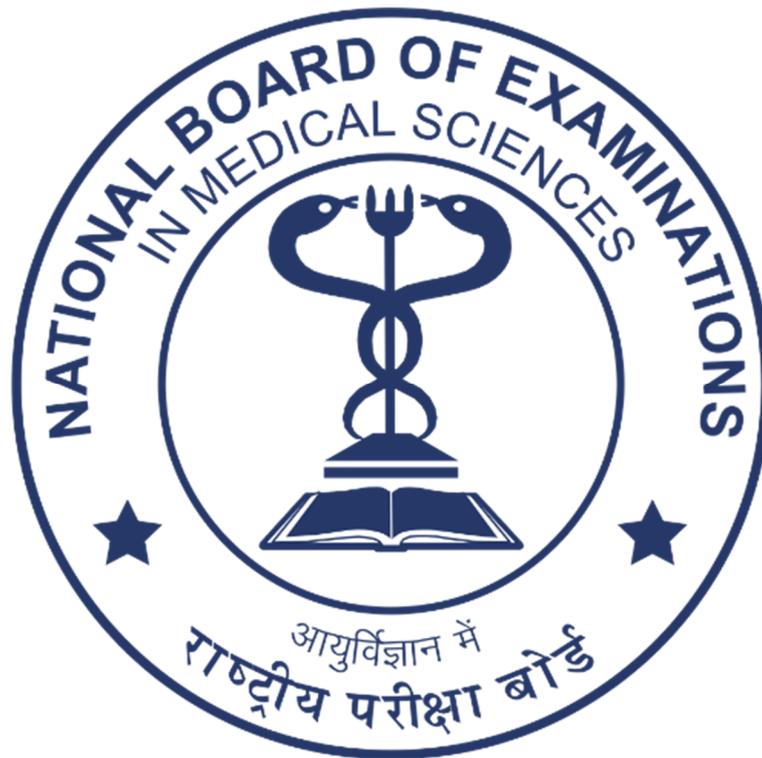
38. Laparoscopic Urologic Surgery A. K.

39. HemalUroradiology-Emmett's-Witten

40. Clinical Uroradiology 3 volumes

JOURNALS

- Indian J. Urology
- Journal of Urology
- British J. Urology
- Neurourology&Urodynamics
- Urology(Gold Journal)
- European Urology
- Urologiainternationalis
- 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



आयुर्विज्ञान में राष्ट्रीय परीक्षा बोर्ड
स्वास्थ्य एवं परिवार कल्याण मंत्रालय, भारत सरकार
मेडिकल एन्क्लेव, अंसारी नगर, नई दिल्ली – 110029

NATIONAL BOARD OF EXAMINATIONS IN MEDICAL SCIENCES

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