

UROLOGY RESIDENCY

TRAINING REQUIREMENTS

(A) INTRODUCTION

Urology is the medical and surgical specialty involving disorders of the male genitourinary tract, female urinary tract, and the adrenal gland. Urologists see patients with kidney, ureter, bladder, prostate, urethra and male genital disorders and injuries. They also investigate and treat male infertility and male sexual dysfunction. Prevention and treatment of genitourinary disease includes the diagnosis, medical and surgical management, and reconstruction of the genitourinary tract.

The educational programme in urology shall be 72 months in length (24 months Surgery-in-General and 48 months Urology)

(B) PROGRAMME OVERVIEW

The 48 months of urology training includes an option of 6 months posting in general surgery. This programme offers a broad-based comprehensive training to the diagnosis, medical and surgical management of urological conditions; including adrenal diseases; as well as an introduction to clinical research. Residents will be exposed to the core urological specialties, and skills in surgery such as endourology and laparoscopy. On completion, residents should be competent with the management of most urological conditions at a pre-fellowship level.

(C) ADMISSION REQUIREMENTS

Entry into the advanced specialty (Urology) residency programme requires successful completion of the Surgery-in-General (SIG) Residency program, and passing of the MRCS examination.

To be eligible to apply for the SIG programme, the applicant must have completed transitional residency year or an approved house officer year. They must have been pre-selected for residency training via national interviews, ranking and matched to Urology. The number of resident positions is to be set by the Urology RAC under the advice of MOH. Residents must complete the training in the same programme.

Applicants who have chosen the alternative pathway into urology residency will be admitted based on their successful completion of their preceding 5-year GS residency programme. They would have indicated their interest either before commencing their GS residency programme, or apply at the appropriate time prior to completion of GS residency.

(D) TRAINING REQUIREMENTS

I. Postings & Clinical Experience

Following 2 years of SIG residency, all Urology residents are to complete:

- Optional rotation of 6 months of General Surgery as registrar;
- 3.5 - 4 years of Clinical Urology in 6 month postings;
- 1 additional year of dedicated urologic research (only for residents in clinician Scientist scheme).

The clinical urology postings must focus on direct patient care in urology including the categories and procedures listed in the guide.

Residents must participate in the continuity of patient care through pre-operative and post-operative clinics and inpatient contact.

Each resident should be given responsibility based upon his or her knowledge, problem-solving abilities, manual skills, and experience, and the severity and complexity of each patient's status

II. Educational programmes

The training programme must regularly provide both structured lectures and clinical teaching (e.g. Grand Ward Rounds, Journal Club, M&M Sessions, X-Ray Meetings, Topic Presentations, etc.). The content of teaching must include the core knowledge listed. All residents should be granted protected time for training programmes and are expected to attend at least 80% of all training activities. The programme should document recommended textbooks for the resident's reference, with the caveat that sole reliance on textbook review is inadequate

III. Medical Syllabus

All residents must demonstrate knowledge about established and evolving biomedical & clinical sciences and how to apply this knowledge to patient care.

Residents are expected to:

1. Given the comprehensive history and physical the residents will be able to recognize genitourinary problems.
2. Identify indications for surgical intervention and identify coexisting medical problems.
3. Demonstrate knowledge of urologic anatomy and an understanding of the pathophysiology of urologic condition and diseases including:

a. adrenal disease and endocrinology	k. laparoscopy
b. andrology	l. neurourology
c. calculus disease	m. obstructive disease
d. endourology	n. oncology
e. extracorporeal shock wave lithotripsy	o. pediatric urology
f. impotence	p. renovascular disease
g. infertility	q. sexual dysfunction
h. female urology	r. renal transplantation
i. geriatric urology	s. trauma & reconstructive urology
j. infectious disease	t. urodynamics

4. Recognize and diagnose basic emergency room problems and identify conditions requiring hospitalization.
5. Be familiar with basic endourological equipment such as flexible and rigid cystoscopes, flexible and semi-rigid ureteroscopes, various types of stents, stone baskets, types of lasers, balloon dilators and demonstrate knowledge on how and when such equipment may be required.
6. Use ultrasound & fluoroscopy and implement safety issues concerning the use of fluoroscopy.

IV. Core Surgical Procedures

Urology residents should have a broad exposure to cases. The table below lists the recommended type and minimum number of procedures an advanced urology resident (R3-R6) is required to perform and assist by the completion of the training.

Sub-Specialty	Procedure	Recommended minimum number performed [Level 1]
Benign Prostatic Hyperplasia and Prostate Biopsy	1. Transabdominal ultrasound for residual urine, prostatic size & IPP	100
	2. Prostate Biopsy, TRUS and/or Transperineal (LA) and/or MRI Fusion-guided Biopsy	20
	3. TURP/Bladder Neck Incision	40
General Urology	1. Circumcision	10
	2. Hydrocoelelectomy	8
	3. Vasectomy (see under Andrology)	10
Emergency Urology	1. Suprapubic cystostomy	5
	2. Scrotal exploration for Torsion or rupture	6
Endourology	1. Cystoscopy (Rigid/Flexible)	200
	2. Optical urethrotomy	3
	3. Litholapaxy of Bladder Stone	5
	4. Stenting of ureter	30
	5. ESWL	40
	6. Semi-rigid ureteroscopy & lithotripsy (URS)	40
	7. Retrograde Intra-renal surgery/Flexible ureteroscopy (R.I.R.S)	10
Laparoscopy	General:	
	1. Open Hasson cannula insertion / Port insertion / Veress needle insertion	20
Urologic oncology	1. TURBT	10
	2. Radical orchidectomy	4

Female Urology and Neuro-urology	1. Urodynamic studies	20
	2. Video-urodynamic studies	10
Andrology	1. Vasectomy	10
	2. Varicocoelectomy	5
	- Inguinal / sub-inguinal or - Microsurgical	

Sub-Specialty	Procedure	Recommended minimum number assisted [Level 2]
Endourology	1. Percutaneous Nephrolithotomy (PCNL)	20
Laparoscopy	1. Lap/Robotic Pyeloplasty	2
Urologic oncology	1. Radical nephrectomy / Nephroureterectomy (Open/Laparoscopic/Robotic)	10
	2. Partial nephrectomy (Open/Laparoscopic/Robotic)	5
	3. Radical prostatectomy (Open/Laparoscopic/Robotic)	10
	4. Radical cystoprostatectomy / Anterior Pelvic Exenteration	8
	5. Penectomy (partial / total)	2
	6. Inguinal lymph node dissection	2
	7. Retroperitoneal lymph node dissection (RPLND)	2
	8. Adrenalectomy (Open/Laparoscopic/Robotic)	2
Female Urology and Neuro-urology	1. Surgery for stress urinary incontinence (SUI) includes TVT, TVT-O, bulking agent injection, Pubo-vaginal slings and Colposuspension	5
	2. Surgery for genito-urinary fistulae	3
Reconstructive Urology	1. uretero-neocystostomy (reimplantation) • With or without Psoas hitch, boari flap Includes UVF repair	3
	2. Ileal conduit diversion	5

	3. Urethroplasty – includes: Anterior or posterior With / without buccal mucosa graft	3
Andrology	1. Testicular Exploration and sperm Extraction (TESE)	5
	2. Correction of penile curvature	2
	3. Insertion of penile prosthesis	2
Renal Transplantation	1. Donor procurement Living-related or cadaveric	3
	2. Implant operation	3
Paediatric Urology	1. Correction of Hypospadias	2
	2. Orchidopexy	2

V. Residents' Scholarly Activities

Documentation of resident performance of scholarly activity should be demonstrated by manuscript preparation, lectures, teaching activities abstracts, and active performance of research or participation in clinical studies and reviews

VI. Competencies

The Urology resident must attain proficiency in 7 key areas, namely Patient Care, Medical Knowledge, Practice-based learning and improvement, Professionalism, Interpersonal and Communication skills, Systems based practice and Faculty development.

1. Patient Care

Goal:

To provide care to patients with urologic disease that is compassionate,

Residents must be able to deliver care that is patient-centred and medically necessary/appropriate. Residents must demonstrate proficiency in:

- Identification of the clinical problem(s);
- Formulation and implementation of care that is patient-centric and medically necessary;
- Competently perform common urological surgeries.
- Stabilization and/or initial management of patients with severe, complex illnesses and injuries.
- Apply current scientific evidence in the diagnosis and treatment of urologic disease
- Appropriately counsel and educate patients and their families about specific urologic problems.

Assessment: The assessment of this competency will include:

1. Achieving a satisfactory performance in the annual urology assessments, and the exit examinations.
2. A satisfactory log of procedures and surgeries performed.
3. A satisfactory outcomes audit of procedures and surgeries performed, including complications and adverse events.
4. Positive performance reports from supervisor / HOD.

2. Medical Knowledge

Goal:

Residents must acquire an understanding of the basic sciences, including the anatomy and physiology of the genitourinary system and clinical epidemiology, and be up to date on the evaluation and management of urological disorders. He must demonstrate the ability to apply the knowledge of urological disorders to the care of individual patients.

Assessment: The assessment of this competency will include:

1. Achieving a satisfactory score in the annual EBU MCQ examinations
2. Achieving a satisfactory performance in the annual urology assessments, and the exit examinations.
3. Positive performance reports from the supervisor / HOD with regard to this competency.

3. Practice-based Learning and improvement

Goal:

Improve urologic patient care practices by the critical evaluation of current practice patterns and by the appraisal and assimilation of scientific evidence.

Objectives:

1. Critically analyze practice experience, identify areas for improvement, and set learning goals.
2. Improve practice based on newly acquired clinical information.
3. Locate, appraise and assimilate scientific studies from the urologic literature applicable to patient management.
4. Facilitate the learning of nursing staff, more junior residents, and medical students.
5. Incorporate performance feedback from faculty to improve practice.
6. Become facile at using information technology and on-line resources, to optimize learning.
7. Engage in scholarly activity as a means of improving practice.

Assessment: The assessment of this competency includes:

1. Have participated in or led a clinical research project or initiative, and be able to discuss the results or merits of this project.
2. Have been a keen participant during learning activities such as journal clubs and department audit, as reflected by positive performance reports from the supervisor / HOD

4. Professionalism

Goal:

Patients and the public must be able to trust physicians implicitly with their lives and well-being. To justify this trust, doctors have to maintain a good standard of care, conduct and behaviour.

The resident must:

- Be dedicated to providing competent, compassionate and appropriate medical care to patients;
- Be an advocate for patients' care and well-being and endeavour to ensure that patients suffer no harm;
- Provide access to and treat patients without prejudice of race, religion, creed, social standing, disability or financial status;
- Maintain the highest standards of moral integrity and intellectual honesty;
- Treat patients with honesty, dignity, respect and consideration, upholding their right to be adequately informed and their right to self-determination;
- Keep confidential all medical information about patients;

- Regard all fellow professionals as colleagues, treat them with dignity and accord them respect.

5. Interpersonal and Communication Skills

Goal:

Residents must have strong interpersonal skills that allow the establishment of rapport and trust with patients, their relatives and other healthcare professionals.

Residents are expected to:

- Accurately elicit and synthesize information obtained from patients, families and colleagues;
- Demonstrate an awareness of both verbal and non-verbal cues in communication;
- Conduct patient consultations effectively, conveying information and explanations accurately and in a manner that is respectful, empathetic and honest;
- Demonstrate the ability to deal with difficult situations e.g. breaking bad news, dealing with distraught or verbally abusive patients or relatives, counselling for organ donation or HIV testing etc.

Assessment: The assessment of professionalism and interpersonal and communication skills will include:

1. Having attended 3 or more courses in communication skills or professionalism, including courses on open disclosure, managing difficult conversations, ethics, taking a total of not less than 12 training hours.
2. Having an excellent patient rating in terms of positive feedback and compliments
3. Having a good rating in terms of (the lack of) negative feedback and complaints.
4. Positive performance reports from the supervisor/HOD with regard to these competencies.
5. Have a positive performance report from other health care professionals whom the resident has had interaction with (semi-360 degree feedback).

6. Systems-based Practice

Goal:

Residents must be aware of and responsive to the health care system in Singapore, and use available resources to optimize care of the urologic patient.

Residents must be familiar with the healthcare system of Singapore and be aware of his/her role in the healthcare system.

The resident must demonstrate:

- Ability to work as part of an inter-professional team in the delivery of patient care, and appreciate the role of the different healthcare professionals in the context of holistic patient management;
- Awareness of the cost-benefits and effective allocation of finite healthcare resources in healthcare;
- An understanding of the continuum of healthcare, including primary, tertiary and long-term care, as well as palliative and end-of-life care.
- Participate in identifying system errors and implementing potential solutions
- Continually advocate for quality patient care and patient safety

Assessment: The assessment of this competency will include:

1. Having participated in or led an improvement project or initiative, and being able to discuss the results or merits of this project.
2. Have performed satisfactorily in the system-based practice component of the annual assessment / exit examinations.

3. Have a positive performance report from the supervisor / HOD with regard to this competency
4. Have a positive performance report from other health care professionals whom the resident has had interaction with (semi-360 degree feedback).

7. Faculty development

Goal:

For medical fraternity, it is important that the residents should be trained to become future educators. To ensure the realization of this goal, Faculty Development: Residents as Future Teachers is uniquely included in the list of core competencies the residents have to be cultivated in. Residents have to be trained as effective role models, teachers and leaders to junior doctors, other healthcare trainees and medical students.

The residents are expected to:

- Demonstrate proficiency in teaching and presentation during small/large group teaching activities.
- Demonstrate the ability to give constructive and effective feedback to promote a positive learning environment.
- Demonstrate effective facilitating skills in running competency related workshops for junior residents.

Assessment: The assessment of this competency will include:

1. Positive performance report from the supervisor/HOD with regard to this competency.
2. Have facilitated at least two competency related workshops for junior residents
3. Have presented at least 3 journal clubs or related activities.
4. Have been mentor/supervisor to at least 5 medical students during their clinical rotations (ie not research supervision).
5. Have had satisfactory teaching scores from medical undergraduates and peers.
6. Have attended at least one training workshop in teaching or giving feedback totaling not less than 3 hours.

(E) SUPERVISION AND WORK HOURS OF RESIDENTS

I. Supervision

All residents will be supervised by a designated supervisor. The ratio of all teaching faculty to residents should be 1:1. The number of core clinical faculty to resident ratio must be no less than 1:6 for surgical subspecialties and no less than 1:2 for internal medicine-related subspecialties. 20% of resident's time must be protected for training.

II. Work Hours

Work hours can be defined as all clinical and academic activities related to residency training. Work hours must be limited to 80 hours per week, averaged over a month, including all on-calls. Residents must be allowed 1 day (i.e. 24 continuous hours) in 7 days free from all clinical administrative and academic responsibilities, averaged over a month. Adequate time for rest and personal activities must be provided. This should consist of a 10-hour time period provided between all daily duty periods and after in-house call.

In-house call must occur no more frequently than every third night, averaged over a four-week period. No new patients may be seen after 24 hours of continuous duty. Continuous on-site duty, including in-house call, must not exceed 24 consecutive hours. Residents may continue to be on duty for up to six additional hours to participate in didactic activities, transfer care of patients, conduct outpatient clinics, and maintain continuity of medical and surgical care.

Work hours must be reported in the designation system (e.g. New Innovations) and tracked by the Programme Director.

(G) ASSESSMENT AND FEEDBACK

I. Log of operative / clinical experience

All residents are expected to keep a log of their operative / clinical experience in the designated case log system.

II. Assessment

The supervisor's evaluation of the resident should be performed at the end of every rotation using the designated form and then submitted to the RAC for review.

III. Feedback

Residents should perform a yearly evaluation of teaching faculty and the training programme using the designated forms. These forms must be submitted to the RAC and kept absolutely confidential. *(KIV to engage IT systems for the provision of the survey)*

IV. Examinations

- Progression from SIG to R3 is premised on the passing of the MRCS examinations.
- Progression to the next level of residency is premised on the submission of satisfactory performance reports as well as a satisfactory performance at the annual assessment examinations.
- Satisfactory exit from the program is premised on a satisfactory performance at the exit examinations as well as fulfilling the requirements for each of the competencies.

(H) CHANGES IN TRAINEESHIP PERIOD AND LEAVE OF ABSENCE

I. Changes in Training Period

Residency should be continuous. If a training programme is interrupted for any reason whatsoever, the RAC may at its discretion, require the trainee to undergo a further period of training in addition to the minimum requirements of the programme or terminate the residency altogether. All trainees are required to conform to the residency training plan as approved by the RAC.

II. Leave Of Absence

All residents are to comply with the prevailing MOH policy on Leave of Absence.

III. Overseas Postings

Overseas attachment during Senior Residency training is not permitted with the exception of Radiation Oncology and Neurosurgery (*refer to JCST Circular 114/14*).