Programme for Specialist Training Committee (Urology)

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10. Uro-oncology

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as of 19 July 2001
STRUCTURED TRAINING PROGRAM FOR UROLOGY

A Programme targets

**Basic specialist training:**
The goal of the basic specialist training under general surgery is to prepare the candidate for advanced urology training by learning the principles of surgery in general and by obtaining the relevant postgraduate qualification.

**Advanced specialist training:**
The goal of the advanced specialist training is to equip candidates with the core knowledge and technical skills of urology to attend patients with common urological problems. This is to prepare the candidate for the exit examination and urology specialist registration.

B Duration and scope of programme

**Basic specialist training:**
Basic specialist training under general surgery

**Advanced specialist training:**
One year general surgery as a MOS or registrar in a general surgical unit. (or a minimum of 6 months general surgery and 6 months in other relevant surgical units, prior approval from STC is required) Three years urology in accredited urology units two of which may be done in other accredited units or accredited overseas units

**Post graduate qualification:**
MMed (Surg) FRCS part II or MRCS part II (subject to review after MMed)

**Postings:**
One year General surgery or relevant surgical posting
Three years Urology

**Instruction:**
Weekly teaching ward rounds, 80% attendance at SUA monthly bookclubs and scientific meetings, local, regional, international urology conferences, advanced course in urology. X ray conference, uropathology conference, show proof of 70 SMC CME points per year

C Core Content

**level one : core urology**

where every resident should be competent at exit on core urology, able to practice independently in a reasonably equipped environment with minimal support.

**level two : advanced urology**

where every resident should have an exposure to these procedures, acquire working knowledge so that they can counsel patients regarding these procedures but would not be required to practice without further training eg in a fellowship program locally or oversea. The STC will appoint subspecialty committees that will oversee the setting up of fellowship programs, auditing the program and credentialling graduates of such programs.
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STRUCTURED TRAINING PROGRAM FOR UROLOGY

Year one (home unit)

General urology
Assessment and management of emergencies, trauma, lower urinary tract problems, infection.

Supervised procedures (numbers denote target for the entire 3 years)
50 cystocopies, 10 litholapaxy, 10 retrograde pyelogram or DJ insertions, 10 TRUS biopsies, 20 urodynamics, 50 TURP, 10 TURBT, urological ultrasound, suprapubic cystostomies, ureterolithotomy, orchidectomy

Year two (optional rotation to uro-oncology and endourology)

Oncology
management of prostate, bladder, kidney, testis and penile cancers

Supervised procedures (numbers denote target for the entire 3 years)
5 nephrectomies, nephroureterectomy, radical orchidectomy, lymphnode dissections, penectomy, assist in 2 cystectomy, 5 radical prostatectomy

Endourology
management of urinary stones disease, obstructive uropathy

Supervised procedures (numbers denote target for the entire 3 years)
10 URS, 10 DJ stent, assist in level 2 procedures, 5 PCNL, flexible URS, 5 laparoscopies, 5 renal transplantation harvesting and grafting.

Year three

Optional rotation to overseas units or andrology, neuro-urology, paediatrics, uro-oncology, approved urology basic research laboratory (6 months)

SGH  6  2 postings  Endourology/oncology/female urology
NUH  3  1 posting  Endourology/oncology
CGH  3  1 posting  Andrology/female urology
TTSH  3  1 posting  Neuro-urology/BPH

Take part in teaching of students, nurses, MOs
Take part in a clinical or basic research project and present at exit the report
Publish one paper as first author

D Training documentation and assessment

Log book, end of posting 6 monthly review
One personal series of common urological procedures
One published original scientific article as first author in an indexed journal in Urology

Compulsory yearly assessment
EBU in-service MCQ, oral and operative assessment

E Programme organisation

One consultant/AC urologist to each trainee.
Adequate workload per trainee
Anonymous feedback system for the trainees to assess the adequacy of the training opportunities in various units.
Benign Prostate Hyperplasia

1) Level One/Core Urology

Key topics

Epidermiology and Natural history

Anatomy and Pathophysiology
1. Surgical anatomy and pathology of prostate gland
2. Pathophysiology of bladder outlet obstruction

Evaluation of male patients with Lower Urinary Tract Symptoms (LUTS)

1. International Prostate Symptom Score
2. Uroflow rate
3. Residual urine
4. Prostate size
5. Intravesical protrusion prostate (IPP)
6. Role of UDS and Flexible Cystoscopy

Patholophysiological Classification of LUTS/BPH

Pharmacological management
1. alpha blockers
2. 5- alpha reductase inhibitors
3. anticholinergic/cholinergic medication

Surgical interventions
1. Transurethral resection procedures . TURP, TUIP, TUVP
2. Laser treatment, Heat treatment
3. Others, eg. stents

Procedures

<table>
<thead>
<tr>
<th>Procedure</th>
<th>No Performed</th>
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</thead>
<tbody>
<tr>
<td>1. Transabdominal ultrasound for residual urine, prostatic size and IPP</td>
<td>20</td>
</tr>
<tr>
<td>2. TRUS &amp; Biopsy</td>
<td>10</td>
</tr>
<tr>
<td>3. Bladder neck incision</td>
<td>50</td>
</tr>
<tr>
<td>4. TUIP</td>
<td>50</td>
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<tr>
<td>4a. TURP (less than 80 grams on pre-op ultrasound measurement)</td>
<td>50</td>
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</tbody>
</table>
Benign Prostate Hyperplasia

2) Level 2/Advanced Urology

Molecular biology of prostatic growth

Procedures

1. TURP (more than 80 grams on pre-op ultrasound measurement)
2. Open prostatectomy
3. TURP in patients with significant medical problems
4. Modified TURP to preserve antegrade ejaculation
5. Investigational procedures eg. Holmium prostatic resection
Benign Prostate Hyperplasia

3) Credentialling

Based on

1. Training local/overseas
2. Publications
3. Workload

Credentialling Process

1. Satisfy criteria
2. Peer Review
Endourology

1) Level 1/Core Urology

Key Topics

1. Surgical Anatomy
2. Metabolic evaluation and prevention of urinary stone formation
3. Imaging modalities of renal collecting system and urinary stones
4. Treatment options, limitation, indications and controversies
5. Choice of devices and accessories
6. Management of endourological complications
7. Ureteral stenting
8. Endourological treatment of UPJO, ureteral and urethral strictures

Procedures

<table>
<thead>
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<tbody>
<tr>
<td>1. Optical urethrotomy</td>
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<tr>
<td>2. Cystoscopy (rigid and flexible)</td>
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<tr>
<td>3. TURBT</td>
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<tr>
<td>4. Rigid ureteroscopy (Diagnostic and Therapeutic)</td>
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<td>5. Ureteral stenting</td>
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<td>6. ESWL</td>
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<td>7. Litholapaxy</td>
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<td>8. RPG</td>
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Endourology

2) Level 2/Advanced Urology

Key Topics

1. Controversies in Endourology
2. Percutaneous and retrograde access techniques
3. Device and accessories maintenance
4. Principles of Extracorporeal and Intra Lithotripsy

Procedures

No Assisted

1. Percutaneous renal access
2. PCNL 5
3. Endopyelotomy
4. Endoureterotomy
5. Percutaneous ablation of calyceal diverticulum
6. Endoscopic management of upper tract TCC
7. Flexible ureteroscopy (Therapeutic) 5
Endourology

3) Credentialling

Based on

1. Training local/overseas
2. Publications
3. Workload

Credentialling Process

1. Satisfy criteria
2. Peer Review
Female Urology

1) Level 1/Core Urology

Key Topics

Anatomy of pelvic support
Physiology and pharmacology of bladder and ureters

1 Evaluation and treatment of recurrent UTI
2 Principles of treatment of female urinary incontinence - genuine stress incontinence including
   a. evaluation
   b. non-surgical management such as PFE, biofeed-back, electrical stimulation and behaviour modification
   c. various surgical options
3 Female urinary incontinence - urge incontinence
4 Retention of urine
5 Urological complications of pregnancy
6 Basic UDS

Procedures

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>1</td>
<td>UDS and UPP</td>
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<tr>
<td>2</td>
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<td>3</td>
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</tbody>
</table>
Female Urology

2) Level 2 / Advanced Urology

Key Topics

1. Pelvic floor dysfunction
2. Molecular biology of voiding function and dysfunction
3. Neuromodulation
4. Advanced UDS including video urodynamics

Procedures

<table>
<thead>
<tr>
<th>Procedure</th>
<th>No Assisted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Colposuspension</td>
<td>5</td>
</tr>
<tr>
<td>2. Pubovaginal Slings</td>
<td>5</td>
</tr>
<tr>
<td>3. Bulking agents for GSI</td>
<td>5</td>
</tr>
<tr>
<td>4. TVT</td>
<td>5</td>
</tr>
<tr>
<td>5. Video-UDS</td>
<td>5</td>
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<tr>
<td>6. Laparoscopic needle suspension urethropexy</td>
<td>2</td>
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<tr>
<td>7. Surgical management of genito-urinary fistulae</td>
<td>2</td>
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<td>8. Cystomyotomy</td>
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</tbody>
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Female Urology

3) Credentialling

Based on

1. Training local/overseas
2. Publications
3. Workload

Credentialling Process

1. Satisfy criteria
2. Peer Review
Laparoscopy

1) Advanced Urology

Key Topics

Indications of Laparoscopy
Effects of pneumoperitoneum and anaesthetic considerations
Limitation and potential implication in Oncologic surgery

Procedures

1. Diagnostic laparoscopy
2. Simple therapeutic laparoscopic procedures
   (Mascularization of cyst, simple orchidectomy, bilateral varicocelectomy)
3. Adrenalectomy for all adrenal tumours & phaeochromocytoma
4. Nephrectomy for upper tract TCC
5. Radical nephrectomy
6. Living related donor nephrectomy

3) Credentialling

1. 2 sessions of laparoscopic nephrectomy in animal laboratory for all staff
2. Identify possible training centres (Cleveland Clinic, Johns Hopkins etc)
Summary Content for Andrology, Infertility, Impotence and Sexuality

1) Level One/Core Urology

Key Topics

1. Epidermiology and natural history of male aging, infertility, impotence and sexual dysfunction.
2. Surgical anatomy and patho-physiology of male aging, sexual and reproductive dysfunction.
3. Clinical, imaging and laboratory evaluation of male patients with aging, sexual and reproduction dysfunction.

Procedures

<table>
<thead>
<tr>
<th>Procedure</th>
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<tbody>
<tr>
<td>1. Varicocelectomy</td>
<td>5</td>
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<tr>
<td>2. Nesbit</td>
<td>2</td>
</tr>
<tr>
<td>3. Testicular Biopsy</td>
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</tbody>
</table>
Andrology, Infertility, Impotence and Sexuality

2) Level 2/Advanced Urology

1. Psycho-social evaluation of the aging male
2. Psychotherapy and counselling of sexual disorder

Procedures

1. Microsurgery for infertility, vasography, by pass 2
2. MESA 2
3. Surgery for erectile dysfunction, Implants, Vascular surgery Electroejaculation 2
4. Penile Implant 2
5. Venous leak ligation
6. Revascularisation of penis
7. Vasoepidymostomy
8. Vasovasostomy
Andrology, Infertility, Impotence and Sexuality

3) Credentialling for Level 2 competency

Based on

1. Training local/overseas
2. Publications
3. Workload

Credentialling Process

1. Satisfy criteria
2. Peer review
Neuro-Urology

1) Level 1/Core Urology

Key Topics

1. Normal Lower Urinary Tract Function
2. Pathophysiology and Classification of Neurogenic Bladder
3. The Neuro-urologic Evaluation
4. Principles and Practice of Urodynamics
   - Acute Management of Spinal Cord Injured patients
   - Continence Care, Clean Intermittent Self Catheterisation

Procedures

1. Basic Urodynamics – uroflowmetry, cystometry, UPP, pressure-flow studies
   - No Performed
2. Suprapubic cystostomy
   - 5
3. External Sphincterotomy
   - No Assisted
4. Ileal conduit diversion
   - 5
Neuro-Urology

2) Level 2 / Advanced Urology

Key Topics

1. Long-term Management of Spinal Cord Injured Patients Including Sexuality & Fertility Aspects
2. Management of the Complications of Neurogenic Bladder
3. Applications of Electrical Stimulation to the Lower Urinary Tract
4. Selection for and Management of Patients with Sacral Anterior Nerve Root Stimulators and Peripheral Sacral Nerve Stimulation

Procedures

1. Advanced urodynamics – video UDS and ambulatory UDS
2. Urethral wallstent insertion for DESD
3. Electro-ejaculation
4. Augmentation cystoplasty
5. Bladder outlet closure
6. Artificial Urinary Sphincter insertion
Neuro-Urology

3) Credentialling

Based on

1. Training local/overseas
2. Publications
3. Workload

Credentialling Process

1. Satisfy criteria
2. Peer Review
Reconstructive Urology & Trauma

1) Level 1/Core Urology

Key topics
1. Basic science of renal, ureteral, bladder and urethral function
2. Embryology and Anomalies of the GU tract
3. Concept in management of PUJO and VUR
4. Mechanisms and (impact) management of trauma on the genitourinary system
5. Principles of Reconstructive Urology
6. Functional evaluation of the urinary tract
7. Imaging of urinary tract – with emphasis on PUJO, urethrogram

Procedures

Urethra

1. Urethral dilatation 10
2. Optical urethrotomy/ Otis urethrotomy 10
3. Meatotomy & meatoplasty

Renal

1. Simple nephrectomy for trauma
2. Open surgery for PUJO
3. Pyelo-pyelostomy/pyelo-ureterostomy

Ureter

1. Ureteral dilatation
2. Simple spatulated ureteric anastomosis
3. Ileal conduit

Bladder

1. Augmentation cystoplasty
2. Conduits eg ileal conduit
Reconstructive Urology & Trauma

2) Level 2/Advanced Urology

Key Topics

1. Principles of urological reconstruction including
   a. Application of tissue transfer techniques in urology
   b. Use of microsurgery in reconstruction
   c. Biomaterials in urology
   d. Implications of use of bowel in the urinary tract
   e. Perioperative care of the reconstructive patient
   f. Principles in fistula excisions & closure
2. Options and techniques for functional reconstruction in the urethra, bladder, ureters and kidneys
3. Options and techniques in urinary diversion: augmentation cystoplasty, orthotopic bladder reconstruction & continent diversion

Procedures

1. Hypospadia
2. Epispadias
3. Anterior and posterior urethroplasty
4. Use of tissue flaps or grafts for urethroplasty
5. Surgery for urinary incontinence
6. Prosthetics in urinary incontinence

Renal

1. Renal reconstruction for trauma
2. Surgery for Renovascular disease
3. Endoscopic mx of PUJO
4. Calico- ureterostomy

Ureter

1. Ileal ureter
2. Ureteric reimplantation
3. Retroperitoneal fibrosis/ previous radiation/ malignant strictures
4. Auto-transplantation
5. Transureteral-ureterostomy

Bladder

1. Continent diversion
2. Orthotopic bladder replacement
3. Lower urinary tract fistulae
4. Bladder neck reconstruction
Reconstructive Urology & Trauma

3) Credentialling

Based on

1. Training local/overseas
2. Publications
3. Workload

Credentialling Process

1. Satisfy criteria
2. Peer Review
Renal Transplantation

1) Level One/Core Urology

Key Topics

1. Basic Physiology and Anatomy
2. Causes of Renal Failure: Acute and Chronic
3. Renal Function Replacement Therapy: Peritoneal dialysis and Haemodialysis
4. Assessment of blood flow in AV fistulas
5. Rejection and Anti-rejection therapy: Basic Immunology
6. Basic Renal Preservation Techniques of Organ Procurement
7. Workup for donors: Living and Cadaveric
8. HOTA and MTA Laws
9. Protocols for Procurement
10. Assessment of perfusion in renal graft
11. Complications of transplant surgery and management
12. Results of Renal Transplant

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<tr>
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<tbody>
<tr>
<td>1. Peritoneal Tenckhoff catheters</td>
<td>10</td>
</tr>
<tr>
<td>2. AV fistula creation</td>
<td>10</td>
</tr>
<tr>
<td>3. Percath Placement</td>
<td>No Assisted</td>
</tr>
<tr>
<td>4. Assist in Renal Procurement: Living and cadaveric</td>
<td>5</td>
</tr>
<tr>
<td>5. Assist in Renal Transplantation</td>
<td>5</td>
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<tr>
<td>6. Graft Nephrectomy</td>
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Renal Transplantation

2) Level 2 / Advanced Urology

1. Renal Injuries in Transplantation
2. Renal Donors: Living Cadaveric and Marginal donors
3. Non-heart-beating donors (NHBD)
4. Management of potential donors
5. Multi-organ donors and teams approach
6. Special Surgical Problems with blood vessels and ureter

Procedures

1. AV Graft and surgery for difficult access
2. Cadaveric Procurement
3. Multiorgan Procurement
4. NHBD Procurement
5. Living Donor Nephrectomy
6. Laparoscopic Living Donor Nephrectomy
7. Renal Transplantation: cadaveric and living-related
8. Surgical Management of complications
Renal Transplantation

3) Credentialling of Transplantation Specialist

1. Training: Local & Overseas
2. Workload: Publications
3. Certification: Gazetted Transplant Surgeon
Pediatric Urology

1) Level 1/Core Pediatric Urology

Key Topics

1. Congenital malformations (renal, ureters, bladder, penile)
2. Undescended testes
3. Vesicoureteric reflux
4. Incontinence/neuropathy
5. Renal/adrenal tumours
6. Basic principles of inpatient and outpatient care surgery in children
7. Pre and post operative management in children

Procedures

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<tbody>
<tr>
<td>Circumcision</td>
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<tr>
<td>Herniotomy</td>
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<tr>
<td>Orchidopexy</td>
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</table>
Pediatric Urology

2) Level 2/Advanced Pediatric Urology

Key Topics

1. Major reconstruction
2. Conduits/augmentation surgery
3. Minimally invasive techniques in Pediatric Urology

 Procedures

1. Hypospadias primary surgery
2. Ureteric re-implantation
3. PUValve ablation
4. Heminephro-ureterectomy in duplex
5. Pyeloplasty
6. Wilms tumour resection
7. Hypospadias re-do, major reconstruction
8. Urethral repair
9. Exstrophy/Epispadias/Cloacal exstrophy
10. IVC Thrombus in Wilm’s
11. Duplex re-implant
12. Duplex reconstruction
13. Minimally invasive P Urology (Nephrectomy, hemi-nephrectomy, adrenalectomy)
14. Ambiguous genitalia surgery
15. Microvascular Orchidopexy
Pediatric Urology

3) Credentialling

The path to Pediatric Urology can be via Pediatric Surgery or Urology. A 3 – 4 year Pediatric Surgery program at AST level in a unit with at least 50% urology workload and an overseas attachment with similar workload will qualify. In North America, 6 months of Pediatric Urology is mandatory as part of urology residency. Pediatric Urology subsequently for 2 years qualifies for Pediatric Urology specialty.

Pediatric Urology should be practised in a hospital with a full range of facilities for children and neonates including Intensive care, Nephrology and Neonatology, Radiology and Nuclear Medicine.
Uro-oncology

1) Level One / Core Urology

Key topics

Tumours of the genito-urinary tract including kidney, bladder, prostate, testis and penile cancers.
Cancer biology, basic principles of diagnostic procedures, chemotherapy and radiation therapy
Basic principles of urological surgery, pre and post operative management of the cancer patient.

Procedures

No Performed

Kidney cancer

1. Radical nephrectomy through various incisions and nephroureterectomy 5
2. Partial nephrectomy in-situ 5

Bladder cancer

1. Transurethral resection of bladder tumours and staging of bladder tumours (TURBT) 10
2. Partial cystectomy
3. Nephroureterectomy

Prostate cancer

1. Transrectal biopsy of the prostate
2. Transurethral resection of the prostate
3. Orchidectomy

Testis cancer

1. Radical orchidectomy

Penile cancer

1. Partial and total penectomy
2. Inguinal lymphnode dissection
Uro-oncology

2) Level 2/Advanced Urology

Key Topics

Molecular biology of cancer
Advanced imaging including special research techniques eg MR spectroscopy

Procedures

Kidney cancer

1. IVC thrombectomy
2. Bench surgery
3. Laparoscopic nephrectomy

No Assisted

Bladder cancer

1. Radical cystectomy
2. Neobladders, continent diversions

Prostate cancer

1. Radical prostatectomy
2. Laparoscopic prostatectomy

Testis cancer

1. Retroperitoneal lymphnode dissection

Special minimally invasive techniques in urology
Uro-oncology

3) Credentialling

Based on

1. Training local/overseas
2. Publications
3. Workload

Credentialling Process

1. Satisfy criteria
2. Peer Review