General Objectives

The rotation at BCCH provides training in tertiary-care pediatric urology. There is also training in broad based, secondary-care pediatric urology which includes urinary tract infections, voiding dysfunction, and trauma.

The goals and objectives for the rotation will vary according to the PGY level of the resident and are broadly categorized into “junior” and “senior” levels. The resident will be evaluated according to the goals and objectives appropriate for his/her level. The “rotation” at BCCH is better described as a longitudinal experience. A resident will typically spend 3 to 4 blocks at BCCH in the junior role and another 3 to 4 blocks in the senior role. The time spent in the junior role will be spread over the PGY 1 through PGY 3 years. Similarly, the senior “rotation” will be spread out over the PGY 4 and PGY 5 years. Although an ITER will be issued at the end of each block, it is recognized that most residents will require 3 to 4 blocks in each of the junior and senior roles to achieve the competencies required of this rotation. During these rotations it is expected that trainees will acquire the knowledge, skills and attitudes necessary to allow appropriate assessment, investigation and recognition of the need for tertiary referral of pediatric urological problems in the ambulatory and emergency setting.
Urology Competencies

Medical Expert:

At the completion of a junior rotation at BCCH, the resident will be capable of providing a thorough urology consult and make a presentation of the findings (both verbal and written) at the request of another health care professional. A thorough consult will include a pertinent medical history and physical examination but will also include an assessment of relevant ethical issues and due consideration of patient preferences, patient age, sex, ethnicity and culture when providing a final recommendation.

At the completion of a senior rotation at BCCH, the resident will demonstrate that he/she has acquired knowledge of clinical urology to the level of a consultant urologist. This will include detailed and practical familiarity with CUA guidelines, Campbell’s textbook of urology, review articles from CUAJ and the Journal of Urology.

At the completion of a senior rotation at BCCH, the resident will be able to apply and interpret diagnostic studies in a resource-effective manner. Specifically, the resident will be able to describe the tests to patients, know the indications, contraindications and limitations of all diagnostic tests. The resident will also know the estimated cost of all diagnostic tests. These tests include:

- urine studies (urinalysis, culture, metabolic studies for stone formation)
- radiologic studies (abdominal, genital, ultrasound, doppler U/S of kidneys and genitalia, CT scan +/- IV contrast, MRI +/- IV contrast, VCUG,)
- retrograde pyelograms
- nuclear renography including DTPA, Mag-3 and DMSA studies
- interpretation of video and non-video urodynamic studies

a) Surgical techniques

Residents will assume a graduated level of responsibility as they progress through the five years of residency training. At the end of their senior rotation at BCCH it is expected that residents will be independently capable of performing the following Pediatric procedures:

- Surgical techniques with the use of optical magnification
- Cystoscopy in children
- Hernia/hydrocele repair
- Circumcision
- Scrotal exploration for repair of torsion of the testis
- Orchidopexy for palpable testes
- Distal hypospadias repair
- Endoscopic management of Bladder calculi
- Vesicostomy and its closure
At the completion of a senior rotation at BCCH, the resident will be knowledgeable and proficient in the following procedures (the resident may not be ‘fully competent’ as there may not be sufficient exposure during the rotation to attain this level);

- Ureteral reimplantation
- Ureteroplasty
- Neonatal pyeloplasty
- Hemi-nephrectomy
- Pediatric continent urinary diversion
- Augmentation cystoplasty
- Proximal hypospadias repair including the use of extra-genital grafts
- Pediatric Renal transplantation
- Incision of ureteroceles and posterior urethral valve

At the completion of a senior rotation at BCCH, the resident will be capable of explaining the procedures listed above to patients and families in order to obtain informed consent. The resident will be knowledgeable regarding the indications, contraindications, potential complications (both common and serious) of each procedure and be apply this knowledge to a patient while considering the patient’s preferences, concerns and associated medical conditions. The resident will demonstrate insight regarding the limits of their own expertise and seek assistance from other health care professionals when necessary.

b) Ambulatory clinics

Attendance at ambulatory Pediatric Urology clinics is mandatory. It is expected that by the end of a junior and senior rotation, trainees will be knowledgeable regarding the diagnosis, appropriate investigation, management and the indications for subsequent tertiary referral of the following outpatient conditions:

- Voiding dysfunction
- Pediatric Urinary tract infections
- Antenatal hydronephrosis
- Non-palpable testes
- Ambiguous genitalia
- Cryptorchidism
- Infant Hernia/hydrocele
- Hypospadias
- Vesicoureteral reflux
- Pediatric neurogenic bladder
- Duplication anomalies
At the completion of a junior and senior rotation at BCCH, the resident will demonstrate insight regarding the limits of their own expertise and seek assistance from other health care professionals when necessary.

Attendance at the multidisciplinary Myelomeningocele (AKA spinal cord) clinic is mandatory. The resident is expected to be knowledgeable regarding management of the urinary tract in children with spina bifida and other congenital and acquired neurological disorders affecting the urinary system.

c) Inpatient and ER consultations

Urology residents will assess patients in the ER and on the inpatient wards at BC Children’s Hospital. Cases will be reviewed with the attending Urologists and a plan of investigation and management arrived at.

Inpatient and intra-operative consultations from the adjoining BC Women’s Hospital are the responsibility of the Urology team at BC Children’s Hospital. These consultations are primarily related to urological problems during pregnancy, delivery, and post-partum. Residents will be expected to be knowledgeable with management of the following:

- UTI including pyelonephritis during pregnancy
- Renal colic during pregnancy.
- Urologic complications associated with labor and/or Caesarian section
- Indication for in-utero intervention
- Evaluation of the neonate with urological problems

These competencies will be taught and assessed in the following ways;

1. Assignment to a high-quality clinical service. Attending urologists at BCCH will be knowledgeable of the rotation goals and objectives and will be highly motivated to ensure each resident has sufficient exposure to clinical material.
2. High volume of emergency surgical cases and emergency room consultations where residents will be the primary responders.
3. Review of diagnostic testing, radiology, surgical indications, issues related to informed consent, procedural complications and various technical considerations during the weekly multi-disciplinary Urology-Nephrology-Radiology rounds.
4. Careful review of resident documentation (dictated consults, OR reports and discharge summaries) to teach and evaluate communication and professional skills.
5. Real-time teaching and assessment of technical skills during each procedure.
6. Use of the OR report card – as requested by the resident.
7. Written ITER at the end of each block.
8. Face-to-face feedback (in real time) throughout the rotation and at the end of the block.
Communicator:

At the completion of a junior and senior rotation at BCCH the resident will be capable of the following:

- Establish therapeutic relationships with patients, families and caregivers, respecting culture race and ethnicity
- Demonstrate respect for patient privacy and confidentiality and be knowledgeable of the PHSA and UBC policy on patient confidentiality.
- Presentation at Urology/Nephrology/Radiology Academic Rounds
- Teaching of Medical students
- Daily ward rounds on inpatients to effectively update patients and their families on their condition and care management plan
- Dictation of clinic and consultation notes on the hospital transcription system
- Communication with other services involved in the care of a common patient

These competencies will be taught and evaluated in the following ways:

1. During direct patient care, the residents will have the opportunity to speak and assess patients in the presence of the attending urologists. Issues related to communication will be explicitly discussed and developed with the attending at an appropriate time.
2. During the surgical “time out” residents will be taught and evaluated regarding their knowledge of the case and their synthesis of patient concerns, clinical information and patient safety. Their ability to communicate in a manner that encourages shared decision-making will also be assessed.
3. Residents will be directly observed doing patient interviews during the multi-disciplinary Spina Bifida clinics. Issues related to communication will be taught and assessed.
4. Nursing evaluation of the junior residents’ communication skills will be done at the end of each block. This will typically be done by the Nursing leader in the OR and be based on the junior residents’ written and verbal skills during elective and emergency cases.
5. All written reports (consults, OR reports, discharge summaries) will be reviewed by the attendings and feedback given.
6. During scholarly presentations that may occur during the rotation (presentation of grand rounds, preparation for NWUS meeting or resident research day), residents may receive help or feedback on effective communication and presentation skills from the attending surgeons.
Collaborator:

At the completion of a junior and senior rotation at BCCH the resident will be capable of:

- Participation in a multidisciplinary team involving ward nursing staff and other allied healthcare professionals in order to coordinate efficient and safe admission and discharge of patients to the Urology unit.
- Collaboration with the pediatric Urology Nurse Clinician regarding the plan of management and follow up for patients following complex reconstructive surgery. Particular emphasis is placed on re-integration into the community and liaison with home care nursing resources in the family’s home community.
- Collaboration with office and clinic staff regarding the specific plans for follow up imaging, surgery and clinic visits
- Provision of telephone consultations to referring physicians seeking advice
- Booking of emergent and semi-emergent surgeries
- Consultation and delegation in an appropriate and effective manner

These competencies will be taught and evaluated in the following ways:

1. Junior resident participation in the multidisciplinary Spina Bifida clinic each week at BCCH. Residents will present the Urological opinion of the patients they have seen that week and listen to the medical, nursing and social work opinions of the same patients. Their interaction with the various healthcare providers will be evaluated by the attending surgeon.
2. Feedback from OR nursing will be obtained through a one45 on-line evaluation form – to evaluate the junior residents’ collaborative skills with anaesthesia and nursing in the OR
3. During the surgical time-out, issues of collaboration will be discussed and the residents’ will receive feedback whenever they are given responsibility for the time out.
4. The residents will receive daily feedback from the attendings on issues of collaboration whenever the situation arises.
Manager:

At the end of a **junior or senior** rotation the resident will be capable of the following:

- Recognize the need for cost containment regarding the judicious ordering of diagnostic tests, performance of outpatient vs. inpatient procedures, and timely discharge of inpatients
- Participate in office ambulatory clinics in order to gain understanding of the managerial and business aspects of running a clinical practice within a hospital setting
- Prepare on-call lists in conjunction with other residents in the call group
- Manage time and utilize information technology effectively
Health Advocate:

At the end of a junior or senior rotation the resident will be capable of the following:

- Educate families regarding the modifiable risk factors for fetal GU anomalies (folate), and neonatal urinary tract infection (breast feeding, circumcision).
- Educate families regarding the pros and cons of routine neonatal circumcision.
- The resident should be aware of the life-long significance of surgical management decisions in children and their potential impact on quality of life.
- Recognize when and how to advocate appropriately on behalf of patients, families and their community.
**Scholar:**

At the end of a **senior** rotation the resident will be capable of the following:

- Preparation for and participation in Pediatric Urology book chapter rounds
- Pose questions that will provide the basis for clinical research
- Critically appraise sources of medical information
- Participation in clinical research projects with the attending Pediatric Urologists
- Preparation of seminars on specific Pediatric Urological topics for Division of Urology Grand Rounds and Resident academic half day
- Develop and implement an effective personal education strategy
Professional:

At the completion of a junior and senior rotation at BCCH, the resident will be capable of the following:

- Demonstrating an understanding and working knowledge of medical bioethics and conflict of interest.
- Demonstrating a commitment to ethical practice and high personal standards of behavior at all times
- Meeting deadlines and commitments made, and being punctual
- Appreciating the unique emotional and ethical issues surrounding surgery of children and the need to involve parents, children's advocates and other health care-givers in difficult situations with honesty compassion and respect for diversity
- Recognizing her/his limits, making independent decisions when appropriate, but keeping senior residents and attending surgeons informed
- Displaying an awareness of the ethics of research involving children

These competencies will be taught and evaluated in the following ways:

1. Residents will attend the multidisciplinary spina bifida clinic at BCCH where medical ethics, conflict of interest and related issues are routinely debated. The residents’ participation in these discussions is expected and will be evaluated.
2. The residents will discuss matters of personal health, workload, strategies for studying, career goals and personal achievement with the BCCH attendings on a longitudinal basis.