GENERAL GOALS IN UNDERGRADUATE EDUCATION

1. To learn and practice professionalism when interacting with patients, families, colleagues and co-workers in the hospital, clinics and offices.

2. To learn the breadth of the discipline of urology and how to identify patients with common urologic conditions.

3. To learn and practice the physical examination relevant to urologic disease including the digital rectal exam, examination of the external genitalia and the neuro-urologic examination.

4. To learn and interpret various urologic imaging studies including ultrasound, CT scan, MRI and IVP and know the indications, complications and limitations of the various studies.

5. To participate in and help direct the care of patients with urologic disease.

6. To learn and practice basic urologic procedures such as urethral catheterization and cystoscopy.

In this handout you will find basic information on the following topics:

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**Evaluation of Hematuria**

**Urolithiasis**

Give a differential diagnosis for acute flank pain in an adult. Discuss how to differentiate the possible causes of acute flank pain using history, physical exam, laboratory tests and radiologic studies.

Name four different kinds of renal calculi and the factors that predispose some individuals to form stones.

Discuss the acute management of a patient with renal colic due to an obstructing ureteral stone.

Describe the mechanism whereby extracorporeal shock wave lithotripsy (ESWL) is able to fragment stones.

**GU Trauma**

Describe the acute (emergency room) evaluation of a patient with blunt abdominal trauma and gross hematuria.

State the indications for CT scan of the urinary tract in cases of blunt abdominal trauma.

State the indications for surgery in cases of blunt renal trauma.

State the two different kinds of bladder rupture and the mechanisms by which they occur.

Discuss the acute urologic evaluation of a male with a pelvic fracture and blood at the urethral meatus.

Discuss the acute urologic evaluation of a male with a blunt injury to the perineum (“straddle injury”) and blood at the urethral meatus.

**Renal and Bladder Tumours**

Describe the urologic evaluation of a 50-year-old female with gross, painless hematuria.

Give a differential diagnosis of a solid mass lesion (seen on ultrasound) arising from one kidney.

State the TNM staging system for renal cell carcinoma.

State two situations where a partial nephrectomy may be considered instead of a radical nephrectomy for a solid renal tumour.
State the TNM staging system for transitional cell carcinoma of the bladder.

Describe the management of a 50-year-old female with a bladder tumour seen at the time of cystoscopy.

State two risk factors that predispose some people to TCC of the bladder.

State two indications for radical cystectomy.

**Voiding Dysfunction**

**General**

Describe the innervation of the detrusor smooth muscle, the bladder neck smooth muscle and the voluntary (striated) urethral sphincter. Describe the effects of anticholinergic, α-adrenergic agonist and α–adrenergic antagonist medications on voiding function.

Describe the typical voiding problems of a patient with a sacral spinal cord injury.

Describe the typical voiding problems of a patient with a supra-sacral spinal cord injury.

Describe the typical voiding problems of patients with Parkinson’s disease, stroke and brain tumour.

State four broad categories of urinary incontinence. State at least one example in each category.

State two broad categories of urinary retention in an adult male and give at least two examples for each category.

**BPH**

Describe the typical symptoms of BPH.

State four complications of untreated BPH.

Describe the medical therapy for men with symptomatic BPH. Describe the physiologic basis for the use of these drugs in men with BPH.

State four indications for surgical resection of the prostate in men with BPH.
**Prostate Cancer**

Give a differential diagnosis for a firm prostate nodule detected by digital rectal exam.

State the normal PSA values for a 50-year-old male and a 70-year-old male.

Give a differential diagnosis for an elevated PSA in a 60-year-old man.

State the TNM staging for prostate cancer.

State three types of “curative” therapy for clinically localized prostate cancer.

State two important complications of each therapy.

Describe the various hormonal therapies for patients with locally advanced or metastatic prostate cancer.

**Stress Incontinence**

Describe two mechanisms underlying genuine stress urinary incontinence in women.

Describe the technique of Kegel’s exercises.

Discuss how to differentiate stress incontinence from urgency incontinence by history, physical examination and basic urodynamic studies.

State the surgical procedures available for the correction of stress incontinence and cystocele in women.

**Pediatric Urology / Erectile Dysfunction / Testes Tumours**

**Pediatric Urology**

Describe the acute (emergency room) evaluation of a male child/adolescent with acute testicular pain and scrotal swelling and give a differential diagnosis.

Discuss the urologic evaluation of a child with recurrent UTI.

State the grading system for vesicoureteral reflux. Know the indications for surgery to correct vesicoureteral reflux.

Give a differential diagnosis of a palpable abdominal mass in a newborn.

State 4 causes of antenatal hydronephrosis.
**Erectile Dysfunction**

Understand the neurologic control of penile erection and detumescence including neurotransmitters released by intracavernosal nerve terminals.

State four broad categories of erectile dysfunction and give one example for each category.

State the mechanism of action of sildenafil (Viagra©), its side effects and possible drug interactions. State two other therapies for erectile dysfunction.

**Testes Tumours**

Give a differential diagnosis of a painless scrotal mass in an adult. Describe how to differentiate these conditions by physical examination.

State the typical age of presentation for germ cell testis tumours. State the most important risk factor for the development of germ cell testis tumours.

State three different histologic types of germ cell testis tumours. Describe the site(s) of lymph node metastases from testicular tumours.

Describe the urologic evaluation and management of an adult male with a solid, intratesticular mass.

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