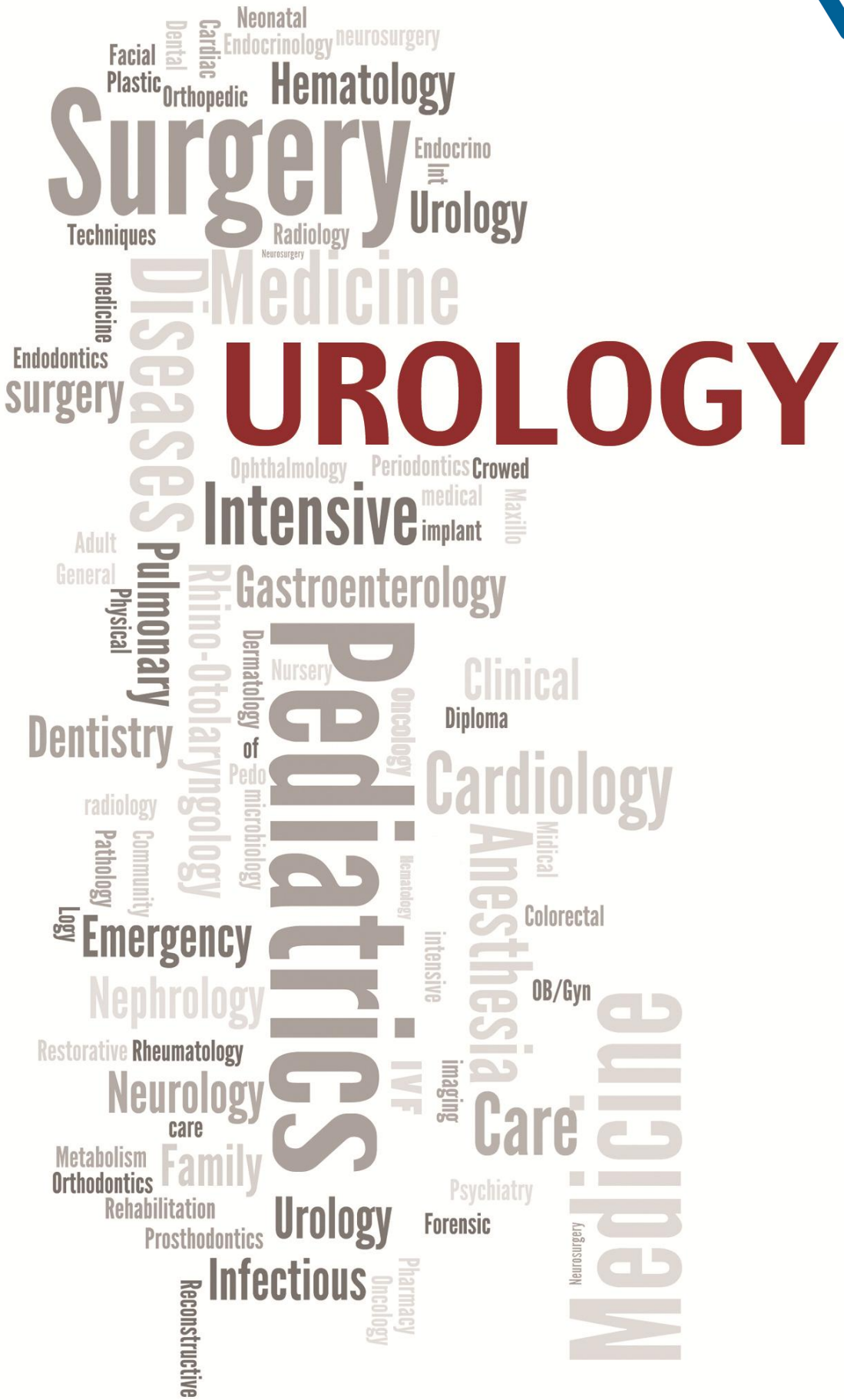

2014

SAUDI BOARD UROLOGY CURRICULUM

الهيئة السعودية
للتخصصات الصحية

SAUDI BOARD
UROLOGY CURRICULUM

2014

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Contents

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INTRODUCTION

Urology is the surgical branch of medicine concerned with the study, diagnosis, and treatment of abnormalities and diseases of the genito-urinary tract of the male and urinary tract of the female, in adults and children, including the adrenal glands.

The Saudi Urology Residency Training Program involves a structured curriculum that strives to impart core knowledge and updated clinical information and skills in the investigation and holistic management of urological diseases. The program also stresses ethical and moral aspects in the practice of medicine as well as quality assurance and cost effectiveness. It also incorporates the new Canadian Medical Education Directions for Specialists (CanMEDS) roles, which will be the standard for all programs accredited by the Saudi Commission for Health Specialties (SCFHS).

The main goal of the Urology Residency Training Program is to graduate well-trained and qualified urologists capable of caring for patients independently. The program takes place in accredited, well-equipped centers to allow trainees to develop appropriate competencies in the allotted period. The program is under the auspices of the Saudi Commission for Health Specialties (SCFHS) rules and regulations.

MINIMUM TRAINING REQUIREMENTS FOR UROLOGY RESIDENCY

The total duration is **five years** of approved residency training in urology. This period must include

1. Two (2) years of surgical foundations for urology training as a postgraduate year resident (i.e., R1 + R2), that meets the requirements of the Saudi Commission for Health Specialties (SCFHS) curriculum. This period must be approved by the urology program director. This initial period of postgraduate training must include

    1.1. A minimum of thirty-six (36) weeks in general surgery

    1.2. A minimum of twelve (12) weeks in critical care

    1.3. A minimum of four (4) weeks in emergency medicine

    1.4. A minimum of thirty-six (36) weeks in the urology parent specialty

    1.5. A maximum of eight (8) weeks of selective rotations (*section 2.3 page 6*)

    1.6. A maximum of eight (8) weeks of vacation, and not more than four (4) weeks per training year

2. Three (3) years of training in urology as a (R3 + 4 + 5), which must include

    2.1. A minimum of one hundred forty-four (144) weeks of residency training in urology

    2.2. A minimum of twenty-four (24) weeks of responsibility as a senior resident

    2.3. A minimum of twenty-four (24) weeks of pediatric urology (preferably in the R4, 5 training levels) or the equivalent in longitudinal experience, until the availability of fully dedicated pediatric urology units within the next five years.

    2.4. Exposure to most of the following urology subspecialty domains while in urology rotations:

        2.4.1. Andrology/infertility

        2.4.2. Endourology/laparoscopy

        2.4.3. Uro-oncology

        2.4.4. Reconstruction

        2.4.5. Transplantation

        2.4.6. Neuro-urology

    2.5. **Leaves**: Residents in the program are entitled to annual, national, and educational leave. They can also apply for sickness, emergency, and maternity leave according to the Commission's general rules and regulations for training. The four weeks of annual vacation may be split into two (2) or three (3) parts, depending on the trainee's rotation and departmental policies.

NOTES:

Saudi Commission for Health Specialties (SCFHS) Certification in Urology requires all of the following:

1. Successful completion of a five-year SCFHS accredited program in urology
2. Successful completion of the SCFHS Principles of Urology (POU) examination
3. Successful completion of the SCFHS examination in urology
4. Successful completion of at least one scholarly project broadly related to urology, as attested by the program director

The five-year program outlined above is to be regarded as the minimum training requirement. Additional requirements may be required or recommended by the program director to ensure that clinical competence has been achieved.

Training must incorporate the principle of graded increasing responsibility. Senior residency is defined as the six-month period in which the resident is regularly entrusted with responsibilities pertaining to pre-operative, operative, and post-operative care, including difficult and challenging problems in urology. The senior resident shall be in charge of the urological unit: no other resident or fellow shall impede direct communication between the senior resident and the attending staff urologist.

MINIMUM TRAINING REQUIREMENTS IN SURGICAL FOUNDATIONS FOR UROLOGY

Two years of approved residency in surgical foundations for urology training that meet the requirements of the Saudi Commission for Health Specialties (SCFHS) curriculum. This period must be approved by the urology program director.

1. The first fifty-two (52) weeks (i.e., R1) must include the following in any order:

    1.1. A minimum of thirty-six (36) weeks in general surgery

    1.2. A minimum of twelve (12) weeks in critical care

    1.3. A maximum of four (4) weeks annual vacation

2. The second fifty-two (52) weeks (i.e., R2) must include the following in any order:

    2.1. A minimum of thirty-six (36) weeks in the urology parent specialty

    2.2. A minimum of (4) weeks in emergency medicine

    2.3. A maximum of eight (8) weeks selective rotations that must be approved by the urology program director in any two (2) of the following specialties:

        2.3.1. Uro-gynecology

        2.3.2. Plastic

        2.3.3. Vascular

        2.3.4. Uro-pathology

        2.3.5. Nephrology

        2.3.6. Uro-radiology

    2.4. A maximum of four (4) weeks annual vacation

NOTES:

The urology program director is expected to develop a series of rotations that will allow the trainee to meet the objectives of surgical foundations for urology training.

OBJECTIVES, COMPETENCIES, PROCEDURES AND CLINICAL SKILLS REQUIREMENTS FOR UROLOGY TRAINING

OBJECTIVES OF SURGICAL FOUNDATIONS FOR UROLOGY TRAINING

DEFINITION

Surgical foundations for urology training encompass the core foundational surgical competencies that are required for the specialty of urology.

Surgical foundations for urology training is the initial period of postgraduate training required to acquire the knowledge, skills, and attitudes essential to the practice of surgery in general and as preparation for further training in urology.

For the purpose of clarity, the term “surgical foundations resident” refers to any urology resident in R1 or R2, or a resident on remediation who has not fulfilled the objectives of training. These objectives refer to exit competencies for which a surgical foundations resident **must** be evaluated by the end of R2.

NOTES:

Successful completion of the POU examination has been designated as one measure of the attainment of the objectives of surgical foundations for urology training. However, if all other objectives are met and a candidate fails the POU examination, the trainee may be allowed to continue in his/her home specialty only upon passing the annual promotion exam and the in training evaluation.

GOALS

Upon completion of the surgical foundations for urology training period, residents are expected to demonstrate competence in the management of surgical patients as outlined in this document.

Residents must demonstrate the requisite knowledge, skills, and attitudes for effective patient-centered care and service to a diverse population. In all aspects of specialist practice, the resident must be able to address issues of gender, sexual orientation, age, culture, religion, ethnicity, and ethics in a professional and compassionate manner.

Surgical foundations for urology training must provide opportunities for residents to achieve the competencies outlined in these objectives. Training must provide the resident with graduated responsibility for the management of surgical and urological patients under appropriate supervision.

SURGICAL FOUNDATIONS FOR UROLOGY TRAINING COMPETENCIES (R1 + R2)

At the completion of the surgical foundations for urology training, the resident will have acquired the following competencies as detailed in the CanMEDS framework:

1) **Medical Expert**
2) **Communicator**
3) **Collaborator**
4) **Manager**
5) **Health Advocate**
6) **Scholar**
7) **Professional**

1) Medical Expert

Definition:

Medical Expert is the central physician role in the CanMEDS framework. As *Medical Experts*, the surgical foundation residents will integrate all of the CanMEDS Roles, applying medical knowledge, clinical skills, and professional attitudes in their provision of patient-centered care.

Key and Enabling Competencies: By the end of surgical foundations for urology training, the surgical foundations resident will be able to

1. **Demonstrate the ability to perform a consultation, integrating all of the CanMEDS Roles to provide optimal, ethical, and patient-centered medical care**

    1.1. Perform a consultation, including

        1.1.1. Completion and presentation of well-documented assessments

        1.1.2. Preparation of recommendations in written and/or verbal form in response to a request from another healthcare professional

    1.2. Demonstrate compassionate and patient-centered care

2. **Establish and maintain clinical knowledge, skills, and attitudes appropriate to surgical practice**

    2.1 Apply knowledge of the clinical, socio-behavioral, and fundamental biomedical sciences relevant to surgical practice during assessment of a patient, including

        2.1.1. Anatomy

            2.1.1.1. Anatomy relevant to all basic surgical approaches

        2.1.2. Physiology, including

            2.1.2.1. Impact of age on specific organ systems as it relates to surgical management

            2.1.2.2. Impact of pregnancy on specific organ systems as it relates to surgical management

            2.1.2.3. Obesity and the impact of obesity on organ systems

            2.1.2.4. Respiratory system, including

                2.1.2.4.1. Lung volumes - flow rates - pressures

                2.1.2.4.2. Gas exchange

                2.1.2.4.3. Oxygen transport and carbon dioxide elimination

            2.1.2.5. Hemostasis

                2.1.2.5.1. Physiology of coagulation

2.1.2.6. Fluid and electrolyte physiology

2.1.2.6.1. Fluid compartments and body water component

2.1.2.6.2. Osmotic and volume regulation

2.1.2.6.3. Sodium (Na), Potassium (K), Calcium (Ca), Phosphorus (P), and Magnesium (Mg) metabolism

2.1.2.6.4. Regulation of acid-base balance

2.1.2.7. Circulatory system

2.1.2.7.1. Hemodynamics of cardiovascular system

2.1.2.8. Immunology of sepsis and transplantation

2.1.2.9. Nutrition

2.1.2.9.1. Metabolic needs

2.1.2.9.2. Caloric-protein-lipid requirements, fluids, and micronutrients

2.1.2.9.3. Adaptation to starvation as compared to response to surgical stress

2.1.3. Body response to surgical stress

2.1.3.1. Metabolic responses including catabolic response, the need for metabolic support, and endocrine changes not mediated by the neuroendocrine axis

2.1.3.2. Mediators, cells involved in metabolic response

2.1.3.3. Neuroendocrine axis

2.1.4. Sepsis and the inflammatory response

2.1.4.1. Metabolic and hemodynamic patterns

2.1.4.2. Mediators, cells in sepsis, and inflammation

2.1.4.3. Impact on organ systems

2.1.5. Disease states in organ systems and their impact on the surgical patient

2.1.5.1. Cardiac

2.1.5.1.1. Coronary artery disease (CAD)

2.1.5.1.2. Valvular disease

2.1.5.1.3. Cardiomyopathy

2.1.5.1.4. Cardiac arrest, arrhythmias as per advanced cardiovascular life support (ACLS) protocols

2.1.5.2. Pulmonary

2.1.5.2.1. Chronic obstructive lung disease (COLD)

2.1.5.2.2. Asthma

2.1.5.3. Renal

2.1.5.3.1. Renal failure

2.1.5.4. Endocrine

2.1.5.4.1. Diabetes

2.1.5.4.1.1. Physiological complications

2.1.5.4.1.2. Management of hypoglycemia and hyperglycemia

2.1.5.4.2. Thyroid pathophysiology

2.1.5.4.3. Parathyroid pathophysiology

2.1.5.4.4. Adrenal pathophysiology

2.1.5.5. Hepatic

2.1.5.5.1. Cirrhosis

2.1.5.5.2. Liver failure

2.1.5.6. Hematologic

2.1.5.6.1. Screening for diatheses

2.1.5.6.2. Hypocoagulable states

2.1.5.6.3. Hypercoagulable states

2.1.6. Indications, complications, and benefits of nutritional support, including enteral and parenteral feeding

2.1.7. Risk assessment strategies and scores

2.1.7.1. Anesthetic risks

2.1.7.2. Cardiac risk assessment

2.1.7.3. ICU risk assessment

2.1.7.4. Trauma assessment including Glasgow coma scale (GCS)

2.1.7.5. Nutritional assessment

2.1.7.6. Preoperative screening tests and their limitations

2.1.8. Diagnostic modalities including their technology, indications, and limitations

2.1.8.1. Plain radiography

2.1.8.2. Ultrasound

2.1.8.3. Computed tomography (CT) scan

2.1.8.4. Magnetic resonance imaging (MRI) technology

2.1.8.5. Fluoroscopy

2.1.8.6. Nuclear medicine

2.1.8.6.1. Positron emission tomography (PET) scan

2.1.8.7. Other emerging technologies

2.1.9. Radiation safety principles as they apply to patients and practitioners

2.1.10. Medical treatments and their impact on the surgical management of patients

2.1.10.1. Immunosuppression

2.1.10.2. Chemotherapy

2.1.10.3. Radiotherapy

2.1.10.4. Common drugs with an impact on hemostatic function and methods to correct their impact

2.1.10.5. Complementary and alternative medicine

2.1.11. Blood products and derivatives, including types, indications, and adverse reactions

2.1.12. Oncology

2.1.12.1. Purpose and basis of staging and grading

2.1.12.2. Basic principles of neoplastic transformation, including tumor growth and spread

2.1.12.2.1. Pathology requirements for appropriate assessments

2.1.12.2.2. Definitions of common pathological terms, such as, but not limited to, neoplasia, malignancy, dysplasia, metaplasia, and atypia

2.1.12.3. Genetics of neoplasia

2.1.12.4. Genetics of families at risk

2.1.12.5. Role of environmental carcinogens

2.1.12.6. Paraneoplastic syndromes

2.1.12.7. Principles of multi-modality therapy

2.1.12.8. Psychological and social impact of cancer on the individual and family

2.1.13. Trauma

2.1.13.1. Principles of advanced trauma life support (ATLS) or principles of trauma care, including initial management

2.1.14. Common infection

2.1.14.1. Community and hospital acquired bacteria, fungi, and viruses

2.1.14.2. Impact of blood borne pathogens, including HIV, hepatitis B, and hepatitis C

2.1.15. Transplantation/implantation

2.1.15.1. Description of autograft, xenograft, and allograft

2.1.15.2. Graft rejection—mechanisms and types

2.1.15.3. Implants

2.1.15.3.1. Principles of compatibility

2.1.15.3.2. Biological reaction/rejection

2.2. Demonstrate an understanding of the conduct of a surgical procedure

2.2.1. Principles of patient safety

2.2.2. Principles of management of patient and surgical team with respect to blood borne pathogens

2.2.2.1. Needle stick injury

2.2.2.2. Mucosal exposure

2.2.2.3. Smoke plume inhalation

2.2.3. Wound healing

2.2.3.1. Classification of wounds

2.2.3.2. Normal wound healing

2.2.3.3. Abnormal wound healing

2.2.3.4. Factors that alter wound healing

2.2.4. Principles of energy sources

2.2.4.1. Electro-cautery

2.2.4.2. Laser

2.2.4.3. Emerging energy source modalities

2.2.5. Principles of prophylaxis

2.2.5.1. Wound and systemic infection

2.2.5.2. Thromboembolism

2.2.5.3. Tetanus

2.2.6. Principles of anesthesia, analgesia, and sedation

2.2.6.1. Local anesthetic agents, indications, contra-indications, and administration

2.2.6.2. Regional anesthetics

2.2.6.3. General anesthetics

2.2.6.4. Procedural sedation, indications, contra-indications, and administration

2.2.6.5. Complications arising from the administration of anesthesia

2.3. Demonstrate an understanding of routine post-operative patient care, including

2.3.1. Fluid management

2.3.2. Wound care

2.3.3. Pain management

2.3.3.1. Pathophysiology and types of pain

2.3.3.2. Common analgesic medications

2.3.3.3. Patient-controlled analgesia

2.3.3.4. Regional analgesia, including epidural

2.4. Demonstrate an understanding of pathophysiology and complications in the surgical patient

2.4.1. Cardiac

2.4.1.1. Principles of advanced cardiac life support

2.4.1.2. Cardiac failure

2.4.1.3. Ischemic heart disease

2.4.1.4. Arrhythmia

2.4.2. Circulatory shock

2.4.2.1. Septic

2.4.2.2. Cardiogenic

2.4.2.3. Hypovolemic

2.4.2.4. Neurogenic

2.4.3. Multiple organ dysfunction syndrome

2.4.4. Pulmonary

2.4.4.1. Respiratory failure

2.4.4.1.1. Basic mechanism, indications, contra-indications, and complications of mechanical ventilation

2.4.4.2. Pulmonary embolism

2.4.4.3. Fat embolism

2.4.5. Genito-urinary

2.4.5.1 Homeostasis

2.4.6. Vascular

2.4.6.1. Deep venous thrombosis (DVT)

2.4.6.2. Arterial ischemia

2.4.7. Endocrine

2.4.7.1. Glycemic control

2.4.7.2. Thyroid storm

2.4.7.3. Adrenal insufficiency

2.4.7.4. Syndrome of inappropriate antidiuretic hormone (SIADH)

2.4.8. Skin

2.4.8.1. Pressure sores

2.4.9. Neurologic

2.4.10.1. Delirium and altered mental status

2.4.10.2. Transient ischemic attack (TIA) and stroke

2.4.10.3. Principles of brain death assessment

2.4.10. Psychiatric

2.4.10.1. Anxiety and depression

2.4.10.2 Psychological and emotional response to sensitive disorders

2.4.10.3. Malingering/Munchausen syndrome/hypochondriasis

2.4.10.4. Post-traumatic stress disorder

2.4.10.5. Post-surgical delirium

2.4.11. Gastrointestinal

2.4.11.1. Stress gastritis

2.4.11.2. Post-operative Ileus

2.4.12. Common postsurgical infections including surveillance, prevention, and judicious use of antibiotics

2.4.12.1. Pulmonary

2.4.12.2. Vascular catheter

2.4.12.3. Urinary

2.4.12.4. Parotitis

2.4.12.5. Surgical site infection, including incisional and organ/space

2.4.12.6. Spreading and necrotizing infections

2.4.12.7. Hematogenous infections

2.4.12.8. Types of bacteria

2.4.12.8.1. *Clostridium difficile*

2.4.12.8.2. Multi antibiotic-resistant pathogens

2.4.12.8.2.1. Methicillin-resistant *Staphylococcus aureus* (MRSA)

2.4.12.8.2.2. Multi-resistant gram-negative bacilli

2.4.12.8.2.3. Vancomycin-resistant enterococci (VRE)

2.4.12.8.3. Common pathogens in the specific surgical site

2.4.13. Compartment syndromes

2.4.13.1. Abdominal

2.4.13.2. Limb

2.4.14. Delayed wound healing

3. Perform a complete and appropriate assessment of a surgical patient

3.1. Elicit a history and perform a physical examination that is relevant, concise, and accurate to the context and preferences for the purposes of prevention and health promotion, diagnosis, and/or management

3.1.1. Identify risk factors for disease or diagnoses

3.1.2. Identify aspects that may affect surgical management of the patient

3.1.3. Identify physical, mental, and psychosocial issues that may influence post-operative care

3.1.4. Identify opportunities for risk management and prevention

3.2. Select medically appropriate investigative methods in a resource-effective and ethical manner including but not limited to

3.2.1. Preoperative screening tests

3.2.2. Laboratory tests and imaging

3.3. Demonstrate effective clinical problem solving and judgment to address patient problems, including interpreting available data and integrating the information to generate differential diagnoses and management plans

4. Use preventive and therapeutic interventions effectively

4.1. Formulate and implement a comprehensive management plan in collaboration with patients and their families for the following clinical situations

4.1.1. Preoperative evaluation and optimization of the patient with the following conditions:

4.1.1.1. Cardiac disease

4.1.1.1.1. Arrhythmias

4.1.1.1.2. Ischemic heart disease

4.1.1.1.3. Valvular heart disease

4.1.1.1.4. Heart failure

4.1.1.1.4.1. Cardiomyopathy

4.1.1.2. Pulmonary disease

4.1.1.2.1. Respiratory failure

4.1.1.2.2. Chronic obstructive lung disease (CLD) and asthma

4.1.1.2.3. Obstructive sleep disorders (OSD) and related conditions

4.1.1.3. Kidney disease

4.1.1.3.1. Acid base disorders
4.1.1.3.2. Electrolytes disorders (sodium, potassium, calcium, phosphorus, magnesium)

4.1.1.3.3. Renal insufficiency

4.1.1.4. Liver disease

4.1.1.4.1. Cirrhosis and its complications

4.1.1.4.2. Liver failure

4.1.1.5. Endocrine disease

4.1.1.5.1. Diabetes

4.1.1.5.2. Thyroid disease

4.1.1.5.3. Adrenal disorders

4.1.1.6. Disorders of hemostasis

4.1.1.7. Pregnancy

4.1.1.8. Morbid obesity

4.1.1.9. Malnutrition

4.1.1.10. Patient with immunosuppression

4.1.1.10.1. HIV

4.1.1.10.2. Immunosuppressant due to drugs

4.1.1.10.3. Chronic disease states

4.1.1.10.4. Post-transplant states

4.1.1.11. Trauma

4.1.1.12. Thermal injury

4.1.1.13. Major categories of shock

4.1.1.14. Infections

4.1.2. Unexpected perioperative bleeding, both surgical and nonsurgical in nature

4.1.3. Prophylaxis

4.1.3.1. Antibiotic

4.1.3.2. Thromboembolic

4.1.3.3. Immunization, including tetanus

4.2. Demonstrate effective, appropriate, and timely application of preventive and therapeutic interventions for post-operative management of patients with

4.2.1. Uneventful postoperative course

4.2.2. Complicated post-operative course

4.2.2.1. Approach to a patient with fever

4.2.2.2. Cardiac disorders

4.2.2.2.1. Ischemia

4.2.2.2.2. Arrhythmias

4.2.2.2.3. Heart failure

4.2.2.3. Pulmonary disease

4.2.2.3.1. Aspiration pneumonia

4.2.2.3.2. Hospital-acquired pneumonia

4.2.2.3.3. Pulmonary embolus

4.2.2.3.4. Respiratory insufficiencies

4.2.2.3.5. Pneumothorax

4.2.2.4. Kidney disease

4.2.2.4.1. Oliguria—anuria

4.2.2.4.2. Renal failure

4.2.2.4.3. Electrolyte and acid-base disorders

4.2.2.5. Vascular disease

4.2.2.5.1. Deep venous thrombosis

4.2.2.6. Gastro-intestinal disease

4.2.2.6.1. GI bleeding

4.2.2.6.2. Ileus

4.2.2.7. Sepsis

4.2.2.7.1. Vascular catheter-related sepsis (catheter-related bloodstream infection)

4.2.2.7.2. Superficial surgical site infection

4.2.2.7.3. Deep surgical site infection

4.2.2.8. Compartment syndromes

4.2.2.8.1. Abdominal

4.2.2.8.2. Limb

4.2.2.9. Fat embolism

4.2.2.10. Pressure sores

4.2.2.11. Recognition of complications from operative positioning

4.3. Ensure appropriate informed consent is obtained for therapies

4.4. Ensure patients receive appropriate end-of-life care

5. Demonstrate proficient and appropriate use of procedural skills

5.1. Ensure appropriate informed consent is obtained for procedures including the discussion of appropriate postoperative care and issues with patients and families

5.2. Pre-procedural skills

5.2.1. Appropriate usage of imaging

5.2.1.1. Demonstrate proficiency and selectivity in ordering appropriate imaging with sufficient attention to clinical details.

5.2.1.2. Demonstrate an approach to the interpretation of common and simple imaging modalities, including

5.2.1.2.1. Plain chest radiography

5.2.1.2.2. Plain views of the abdomen

5.2.1.2.3. Common cross-sectional imaging

5.2.1.2.4. Routine trauma imaging

5.2.1.2.5. Ultrasound

5.2.2. Demonstrate effective, appropriate, and timely performance of a surgical procedure while maintaining patient and team safety

5.2.2.1. Apply the concept of aseptic technique as it is used for all procedures

5.2.2.2. Gather and manage the availability of appropriate instruments and materials for minor procedures

5.2.2.3. Obtain appropriate assistance

5.2.2.4. Maintain universal precautions

5.2.2.4.1. Demonstrate understanding of the steps to take when there has been a break in universal precautions or a potential contamination

5.2.2.5. Demonstrate appropriate patient positioning

5.2.2.6. Prepare the operative site

5.2.2.7. Cleanse the operative site

5.2.2.8. Appropriately antiseptic technique

5.2.2.9. Demonstrate appropriate draping

5.2.2.10. Deliver pre-procedural anesthesia if appropriate

5.2.2.11. Strictly adhere to patient safety guidelines according to the WHO 5 steps in patient safety in the operating room:

5.2.2.11.1. Briefing

5.2.2.11.2. Sign-in

5.2.2.11.3. Time-out

5.2.2.11.4. Sign-out

5.2.2.11.5. Debriefing

5.3. Procedural skills

5.3.1. Demonstrate the application of anatomic knowledge as it relates to the surgical procedure.

5.3.2. Demonstrate appropriate use of operative assistance

5.3.2.1. Recognize when to use operative assistance as necessary for the safe and effective performance of operative procedures

5.3.2.2. Demonstrate understanding of personal technical limitations

5.3.2.3. Direct assistants

5.3.3. Demonstrate effective operative assistance

5.3.3.1. Demonstrate how to provide operative assistance as necessary for the safe and effective performance of operative procedures

5.3.3.2. Take direction from a lead surgeon

5.3.4. Demonstrate the appropriate use of common surgical instruments such as, but not limited to, needle drivers, retractors, forceps, clamps, electrocautery, scalpel, and scissors

5.3.5. Demonstrate the appropriate choice and use of suture materials

5.3.6. Perform the following surgical skills:

5.3.6.1. Incision using sharp and energy-based instruments

5.3.6.2. Knot-tying

5.3.6.3. Suturing

5.3.6.4. Appropriate tissue handling during surgical procedures paying attention to the preservation of tissue vitality

5.3.6.5. Blunt and sharp dissection without injury to adjacent structures

5.3.6.6. Vascular control in elective and critical situations

5.3.6.7. Closure of simple wounds

5.3.6.8. Appropriate use of drains

5.3.6.9. Application of appropriate wound dressing

5.3.6.10. Urethral catheter insertion

5.3.6.11. Insertion of a nasogastric tube

5.3.6.12. Tourniquet application

5.3.6.13. Splint for bony injury or soft tissue injury

5.3.6.14. Remove a superficial skin lesion

5.3.6.15. Drain a superficial abscess

5.3.6.16. Perform biopsy

5.3.6.17. Secure arterial and venous vascular access in critical and non-critical situations

5.3.7. Demonstrate the ability to perform the following procedures in critical situations:

5.3.7.1. Needle thoracostomy

5.3.7.2. Tube thoracostomy

5.3.7.3. Needle cricothyroidotomy

5.3.7.4. Cricothyroidotomy or tracheostomy

5.4. Post-procedural skills

5.4.1. Preparation and handling of specimen for presentation to a pathologist

5.4.2. Perform appropriate wound surveillance and dressing care

5.5. Document and disseminate information related to procedures performed and their outcomes including operative reports and other records

5.6. Ensure adequate follow-up is arranged for the procedures performed

5.6.1. Plan and discuss appropriate postoperative care and issues with patients and families

5.6.2. Discuss immediate and long-term follow-up issues with family members or medical power-of-attorney, as appropriate

5.6.3. Arrange for appropriate postoperative resources

2) Communicator

Definition:

As *Communicators*, the surgical foundations residents will effectively facilitate the doctor-patient relationship and the dynamic exchanges that occur before, during, and after the medical encounter.

Key and Enabling Competencies: By the end of surgical foundations for urology training, the surgical foundations resident will able to

1. Develop rapport, trust, and ethical therapeutic relationships with patients and families

1.1. Identify and explore issues to be addressed effectively in a surgical patient encounter, including, but not limited to, the patient's context and preferences, including aspects such as age, ethnicity, gender, family, and religious beliefs

1.2. Recognize that being a good communicator is a core clinical skill for surgeons, and that effective physician-patient communication can lead to patient adherence to treatment regimens, improved clinical outcomes, patient satisfaction, and physician satisfaction

1.3. Establish positive therapeutic relationships with patients and their families that are characterized by understanding, trust, respect, honesty, and empathy

1.3.1. Encourage discussion, questions, and interaction in the encounter

1.3.2. Engage patients, families, and relevant health care professionals to develop a plan of care using shared decision-making

1.4. Respect patient confidentiality, privacy, and autonomy

1.4.1. Demonstrate an understanding of the risk of breaching patient confidentiality because of new technologies such as tele-health, internet, or digital storage and transmission devices

1.5. Listen effectively

1.6. Be aware of, and responsive to, nonverbal cues

1.7. Facilitate a structured clinical encounter effectively

2. Accurately elicit and synthesize relevant information and perspectives of patients and families, colleagues, and other professionals

2.1. Gather information about a disease and about a patient's beliefs, concerns, expectations, and illness experience

2.2. Seek out and synthesize relevant information from other sources, such as a patient's family, caregivers, and other professionals

3. Convey relevant information and explanations accurately to patients and families, colleagues, and other professionals

3.1. Deliver information to patients and families, colleagues, and other professionals in a humane manner and in a way that is understandable, and encourages discussion and participation in decision-making

3.2. Plan and discuss appropriate perioperative care and issues with patients and families, preoperatively

3.3. Perform informed discharge as it relates to the procedures being completed

3.4. Discuss follow-up issues with family members or medical power-of-attorneys, as appropriate

3.5. Educate patients and families concerning alternatives to surgical and non-surgical care

3.6. Demonstrate effective communication using newer technologies

4. Develop a common understanding of issues, problems, and plans with patients, families, and other professionals, to develop a shared plan of care

4.1. Respect diversity and differences in decision-making, including, but not limited to the impact of

4.1.1. Gender

4.1.2. Religion

4.1.3. Cultural beliefs

4.1.4. Age

4.1.5. Sexual orientation

4.1.6. Socioeconomic status

4.2. Address challenging communication issues effectively, including

4.2.1. Obtaining informed consent

4.2.2. Delivering bad news

4.2.3. Disclosing adverse events

4.2.4. Discussing end-of-life care

4.2.5. Discussing organ donation

4.2.6. Addressing anger, confusion, and misunderstanding

4.2.7. Language barriers

4.2.8. Cultural differences

5. Convey effective oral and written information about a medical encounter

5.1. Maintain clear, concise, accurate, and appropriate records (e.g., written or electronic) of clinical encounters and plans

5.2. Present verbal reports of clinical encounters and plans

3) Collaborator

Definition:

As *Collaborators*, the surgical foundations residents will work effectively within a health care team to achieve optimal patient care.

Key and Enabling Competencies: By the end of surgical foundations for urology training, the surgical foundations residents will able to

1. Participate effectively and appropriately in an inter-professional and interdisciplinary healthcare team

1.1. Describe the surgeon's roles and responsibilities with respect to other professionals

1.1.1. Describe the elements of a good consultation

1.1.2. Recognize one's own limitations and the need for help from others

1.2. Respect the roles and responsibilities of other professionals within the healthcare team

1.3. Recognize and respect the diversity of roles, responsibilities, and competencies of other professionals in relation to their own

1.4. Work with others to assess, plan, provide, and integrate care for individual patients (or groups of patients)

1.4.1. Arrange for the appropriate postoperative resources to be available

1.4.2. Arrange for appropriate postoperative allied health care assistance as necessary

1.5. Work with others to assess, plan, provide and review other tasks, such as research problems, educational work, educational program review, or administrative responsibilities

1.6. Participate effectively in inter-professional team meetings

1.7. Enter into interdependent relationships with other professions for the provision of quality care

1.8. Describe the principles of team dynamics in the operative and non-operative environments

1.9. Respect team ethics, including confidentiality, resource allocation, and professionalism

1.10. Demonstrate progressive leadership in a health care team, as appropriate

1.11. Use of a pre-operative team checklist to improve patient safety

2. Work with other health professionals effectively to prevent, negotiate, and resolve conflicts

2.1. Demonstrate a respectful attitude towards other colleagues and members of a team

2.2. Work with other professionals to prevent conflicts

2.3. Employ collaborative negotiation to resolve conflicts

2.4. Respect differences and address misunderstandings and limitations in other professionals

2.5. Recognize one's own differences, misunderstandings, and limitations that may contribute to inter-professional tension

4) Manager

Definition:

As *Managers*, surgical foundations residents will take part in healthcare organizations, making decisions about allocating resources, and contributing to the effectiveness of the healthcare system.

Key and Enabling Competencies: By the end of surgical foundations for urology training, the surgical foundations residents will able to

1. Demonstrate an understanding of the influences that affect the functioning of the healthcare system at various levels, including an understanding of

1.1. Hospital governance

1.2. Operating room governance

1.3. Worker's compensation organizations

1.4. Public health issues as they relate to mandatory reporting of diseases

2. Participate in activities that contribute to the effectiveness of healthcare organizations and systems

2.1. Participate in systemic quality process evaluation and improvement, such as patient safety initiatives

2.2. Describe the structure and function of the healthcare system as it relates to their surgical practice, including the roles of physicians

2.3. Describe principles of healthcare financing

3. **Manage their practices and careers effectively**

3.1. Set priorities and manage time to balance patient care, practice requirements, outside activities, and personal life

3.2. Employ information technology appropriately for patient care

3.3. Demonstrate an understanding of the introduction of new technologies and the need for

3.3.1. Health technology assessment

3.3.2. Education

3.3.3. Credentialing

4. Allocate finite healthcare resources appropriately

4.1. Recognize the importance of just allocation of health care resources, balancing effectiveness, efficiency, and access with optimal patient care

5) Health Advocate

Definition:

As *Health Advocates*, the surgical foundations residents will responsibly use their expertise and influence to advance the health and well-being of individual patients, communities, and populations.

Key and Enabling Competencies: By the end of surgical foundations for urology training, the surgical foundations residents will able to

1. Respond to individual patient health needs and issues as part of patient care

1.1. Identify the health needs of an individual patient

1.2. Recognize opportunities for advocacy, health promotion, and disease prevention with individuals to whom they provide care, such as

1.2.1. Child abuse

1.2.2. Elder abuse

1.2.3. Domestic violence and spousal abuse

1.2.4. Smoking cessation

1.2.5. Substance abuse

1.2.6. Patient behaviors that place them at risk for injury or disease

1.2.7. Disadvantaged populations

1.3. Recognize the importance of organ transplantation

1.3.1. Identification of potential donors

1.4. Identify opportunities to advocate for appropriate screening

2. Describe and respond to the health needs of the communities that they serve

2.1. Demonstrate an understanding of how they may affect surgical disease prevalence

3. Promote the health of individual patients, communities, and populations

3.1. Describe an approach to implementing a change in a determinant of health of the populations they serve

3.2. Describe how public policy impacts on the health of the populations served

3.3. Describe the ethical and professional issues inherent in health advocacy, including altruism, social justice, autonomy, integrity, and idealism

3.4. Appreciate the possibility of conflict inherent in their roles as health advocates for patients or the community and being a manager or gatekeeper

3.5. Describe the role of the medical profession in advocating collectively for health and patient safety

4. Promote and participate in patient safety

4.1. Describe ways to prevent injury

4.1.1. Appropriate safety equipment for work and leisure pursuits

4.1.2. Error prevention systems in operating rooms

6) Scholar

Definition:

As *Scholars*, the surgical foundations residents will demonstrate a lifelong commitment to reflective learning, as well as the creation, dissemination, application, and translation of medical knowledge.

Key and Enabling Competencies: By the end of surgical foundations for urology training, the surgical foundations residents will able to

1. Maintain and enhance professional activities through ongoing learning

1.1. Describe the principles of lifelong learning

1.2. Describe the principles and strategies for implementing a personal knowledge management system

1.3. Pose an appropriate learning question

1.4. Access and interpret relevant evidence including appropriate literature searches

1.5. Integrate new learning into practice

1.6. Evaluate the impact of any change in practice

1.7. Document the learning process using methods such as

1.7.1. Surgical logs through the electronic logbook

1.7.2. Learning portfolios

2. Critically evaluate medical information and its sources, and apply this appropriately to practice decisions

2.1. Describe the principles of critical appraisal, including statistics and epidemiology

2.2. Critically appraise retrieved evidence in order to address a clinical question

2.3. Discuss ways to integrate critically appraised conclusions into clinical care

3. Facilitate the learning of patients, families, students, residents, other health professionals, the public, and others

3.1. Describe the principles of learning relevant to medical education

3.1.1. Develop skills to educate medical students, colleagues, and other healthcare professionals

3.2. Collaboratively identify the learning needs and desired learning outcomes of others

3.3. Select effective teaching strategies and content to facilitate others' learning

3.4. Effectively deliver lectures or formal presentations

3.5. Assess and reflect on a teaching encounter

3.6. Provide effective feedback

3.7. Describe the principles of ethics with respect to teaching

4. **Demonstrate an understanding of the principles of dissemination of new knowledge**

4.1. Demonstrate appropriate presentation skills including formal, informal, and written presentations

5. Demonstrate an understanding of the use of information technology to enhance surgical practice, including

5.1. Computers

5.2. Presentation software

5.3. Personal digital assistants (PDAs)

5.4. Simulation and other technologies

7) Professional

Definition:

As *Professionals*, the surgical foundations residents are committed to the health and well-being of individuals and society through ethical practice, profession-led regulation, and high personal standards of behavior.

Key and Enabling Competencies: By the end of surgical foundations for urology training, the surgical foundations residents will be able to

1. Demonstrate a commitment to their patients, profession, and society through ethical practice

1.1. Exhibit appropriate professional behaviors in practice, including honesty, integrity, commitment, compassion, respect, and altruism

1.1.1. Demonstrate the ability to be objective in treating patients regardless of their socioeconomic status or other factors

1.2. Demonstrate and maintain a commitment to delivering the highest quality care

1.3. Recognize and appropriately respond to ethical issues encountered in practice

1.4. Manage conflicts of interest

1.4.1. Demonstrate an awareness of the influence of industry on practice and training

1.5. Recognize the principles and limits of patient confidentiality as defined by professional practice standards and the law

1.6. Maintain appropriate relations with patients and families

1.7. Recognize the duality of being a learner as well as a practitioner

1.7.1. Demonstrate an understanding of the role of appropriate supervision

2. Demonstrate a commitment to their patients, profession, and society through participation in profession-led regulation

2.1. Demonstrate knowledge and an understanding of the professional, legal, and ethical codes of practice

2.2. Fulfill the regulatory and legal obligations required of current practice

2.3. Demonstrate accountability to professional regulatory bodies

2.4. Recognize and respond to others' unprofessional behaviors in practice

2.5. Participate in peer review

3. Demonstrate a commitment to physician health and sustainable practice

3.1. Balance personal and professional priorities to ensure personal health and a sustainable practice

3.2. Strive to heighten personal and professional awareness and insight

3.3. Recognize other professionals in need and respond appropriately

3.4. Demonstrate an awareness of the risks associated with the high stress environments in which surgeons work

3.5. Demonstrate an understanding of occupational risks and their management

3.6. Promote a healthy lifestyle and demonstrate awareness of personal risk behaviors

- 3.6.1. Substance abuse
- 3.6.2. Exposure to infection
- 3.6.3. Sleep deprivation

3.7. Demonstrate an understanding of techniques for stress reduction

CanMEDS Specific Training Level Objectives Guide (R1 and R2)

CanMEDS Roles and Goals/Competencies (The knowledge, skills and attitudes underlying the basics to the practice of surgery in general and preparatory to further training in Urology)						
Medical Expert	**Communicator**	**Collaborator**	**Manager**	**Health Advocate**	**Scholar**	**Professional**
Demonstrate the ability to perform a consultation, integrating all of the CanMEDS Roles to provide optimal, ethical, and patient-centered medical care Establish and maintain clinical knowledge, skills, and attitudes appropriate to surgical practice Perform a complete and appropriate assessment of a surgical patient Use preventive and therapeutic interventions effectively Demonstrate proficient and appropriate use of procedural skills	Develop rapport, trust, and ethical therapeutic relationships with patients and families Accurately elicit and synthesize relevant information and perspectives of patients and families, colleagues, and other professionals Convey relevant information and explanations accurately to patients and families, colleagues, and other professionals Develop a common understanding of issues, problems, and plans with patients, families, and other professionals, to develop a shared plan of care Convey effective oral and written information about a medical encounter	Participate effectively and appropriately in an inter-professional and interdisciplinary healthcare team Work with other health professionals effectively to prevent, negotiate, and resolve conflict	Demonstrate an understanding of the influences that affect the functioning of the healthcare system at various levels Participate in activities that contribute to the effectiveness of healthcare organizations and systems Manage a practice and career effectively Allocate finite healthcare resources appropriately	Respond to individual patient health needs and issues as part of patient care Describe and respond to the health needs of the communities served Promote the health of individual patients, communities, and populations Promote and participate in patient safety	Maintain and enhance professional activities through ongoing learning Critically evaluate medical information and its sources, and apply this appropriately to practice decisions Facilitate the learning of patients, families, students, residents, other health professionals, the public, and others Demonstrate an understanding of the principles of dissemination of new knowledge Demonstrate an understanding of the use of information technology to enhance surgical practice	Demonstrate a commitment to patients, the profession, and society through ethical practice Demonstrate a commitment to patients, the profession, and society through participation in profession-led regulation Demonstrate a commitment to physician health and sustainable practice

Procedures and clinical skills: Specific objectives according to level of training for R1, R2*

Procedures and clinical skills: Specific objectives according to level of training for R1, R2*

Procedures and clinical skills	Procedures	R1	R2
1. Open/laparoscopic procedures	Exposure to a minimum of 30 procedures (in R1 + R2 collectively) (There should be a minimum of 1-2 of any particular procedure)	• Incision and drainage procedures • Appendectomy • Cholecystectomy • Abdominal stoma creation • Insertion of laparoscopic ports • Bowel resection/anastomosis • Hernia repair (inguinal, incisional) • Opening/closing laparotomy • Venous cut down • Superficial skin lesions excision	• Varicocelectomy • Hydrocelectomy • Meatotomy • Circumcision • Incision & drainage procedures
2. Endoscopic procedures	Exposure to a minimum of 20 procedures (in R1 + R2 collectively) (There should be a minimum of 3 of any particular procedure)		• Cystoscopy • Bladder biopsy/fulguration • Retrograde studies • Insertion of ureteral stents • Prostatic biopsy
3. Diagnostic/therapeutic procedures	Exposure to a minimum of 14 procedures (in R1 + R2 collectively) (There should be a minimum of 1–2 of any particular procedure)	• Diagnostic laparoscopy • Biopsy (trucut/open) • Endotracheal intubation • Central line insertion • Chest tube insertion	• Trans-rectal ultrasound of the prostate • Shockwave lithotripsy (SWL)
4. Trauma	Minimum of 10 exposures (in R1 + R2 collectively) (There should be a minimum of 1–2 of any particular procedure)	• Management of multiple traumas • Surgical exploration	• Ascending urethrogram • Insertion of suprapubic catheter • Repair of bladder injury

* **It is mandatory for residents in R1 + R2 training levels to fulfill these objectives before being promoted to R3.**

OBJECTIVES OF TRAINING IN UROLOGY

DEFINITION

Urology is the surgical branch of medicine concerned with the study, diagnosis, and treatment of abnormalities and diseases of the genito-urinary tract of the male and urinary tract of the female, in adults and children.

GOALS

Upon completion of training, residents are expected to be competent specialists in urology, capable of assuming the role of consultants in the specialty. Residents must acquire working knowledge of the theoretical basis of the specialty, including its foundations in the basic medical sciences and related research. Urology residents must understand the normal function and pathological processes and diseases that affect the adrenal glands, kidneys, ureters, bladder, and urethra in the male and female, and the prostate and external genitalia of the male. This includes an understanding, appropriate to the practice of urology, of normal development and embryology, biochemistry and pharmacology, physiology, anatomy, and gross and microscopic pathology of the genito-urinary tract.

Residents must acquire the requisite knowledge, skills, and attitudes for effective patient-centered care and service to a diverse population. In all aspects of specialist practice, graduates must be able to address issues of gender, age, culture, religion, and ethnicity, in an ethical and professional manner. A close, integrated and collaborative relationship with primary care physicians is essential. Collaborative relationships with specialists in all fields of surgery, medicine, laboratory medicine, radiology, rehabilitation medicine, and social work are also needed.

The professional characteristics to be demonstrated and developed include all of the CanMEDS competencies.

UROLOGY COMPETENCIES
(R3, R4, R5)

At the completion of training, the resident will have acquired the following competencies and will function effectively as a

1) **Medical Expert**
2) **Communicator**
3) **Collaborator**
4) **Manager**
5) **Health Advocate**
6) **Scholar**
7) **Professional**

1) Medical Expert:

Definition:

As *Medical Experts*, urologists integrate all of the CanMEDS Roles, applying medical knowledge, clinical skills, and professional attitudes in their provision of patient-centered care. *Medical Expert* is the central physician Role in the CanMEDS framework.

Key and Enabling Competencies: Residents in the R3 to R5 levels must be able to

1. Function effectively as urology residents with increasing levels of responsibility according to their year of training. All CanMEDS Roles must be integrated to provide optimal, ethical, and patient-centered medical care

1.1. Perform a consultation, including the presentation of well-documented assessments and recommendations in written and/or verbal form in response to a request from another health care professional

1.1.1. Perform a focused physical examination and urological history, including past and present medical history relevant to the urological care of the patient

1.1.2. Formulate a differential and provisional diagnosis

1.1.3. Order or perform, and interpret required investigations

1.1.4. Formulate a treatment plan for the urologic patient

1.1.5. Communicate the consultation, both verbally and in written format, including a clear plan of action or recommendations

1.2. Identify and appropriately respond to relevant ethical issues arising in patient care

1.3. Demonstrate the ability to prioritize professional duties when faced with multiple patients and problems

1.4. Demonstrate compassionate and patient-centered care

1.5. Recognize and respond to ethical dimensions in medical decision-making

1.6. Demonstrate medical expertise in situations other than patient care, such as providing expert legal testimony or advising governmental agencies

2. Establish and maintain clinical knowledge, skills, and attitudes appropriate to urology

2.1. Apply knowledge of the clinical, socio-behavioral, and fundamental biomedical sciences relevant to urology in the following conditions

2.1.1. Congenital and developmental abnormalities

2.1.1.1. Kidney and ureter

2.1.1.1.1. Cystic disease of the kidney

2.1.1.1.2. Horseshoe kidney and other renal anomalies

2.1.1.1.3. Duplication, retrocaval ureter, and other ureteric anomalies

2.1.1.2. Bladder and urethra

2.1.1.2.1. Vesicoureteral reflux

2.1.1.2.2. Posterior urethral valves

2.1.1.2.3. Epispadias and exstrophy

2.1.1.2.4. Hypospadias and chordee

2.1.1.2.5. Other anomalies

2.1.1.3. External genitalia

2.1.1.3.1. Disorders of sexual differentiation

2.1.1.3.2. Undescended testes

2.1.1.3.3. Scrotal and external genital anomalies

2.1.2. Obstructive disease of the upper urinary tract

2.1.2.1. Hydronephrosis and obstructive uropathy

2.1.2.2. Ureteropelvic junction obstruction

2.1.3. Obstructive disease of the lower urinary tract

2.1.3.1. Bladder outflow obstruction

2.1.3.2. Benign prostatic hypertrophy

2.1.3.3. Urethral strictures

2.1.3.4. Obstruction secondary to neurological disorders

2.1.4. Urinary calculus disease

2.1.4.1. Renal and ureteral calculi

2.1.4.2. Bladder and urethral calculi

2.1.5. Urinary fistulae

2.1.6. Urinary and genital infections

2.1.6.1. Bacterial (complicated and uncomplicated) and non-bacterial cystitis and urethritis

2.1.6.2. Pyelonephritis and other renal infections, including xanthogranulomatous pyelonephritis

2.1.6.3. Prostatitis including chronic pelvic pain syndrome

2.1.6.4. Sexually transmitted infections

2.1.6.5. Genito-urinary tuberculosis

2.1.6.6. Genito-urinary parasitic disease

2.1.6.7. Fungal urinary tract infections

2.1.6.8. Other genital infections (including necrotizing fasciitis)

2.1.7. Trauma (including the genito-urinary aspects of multi-system trauma evaluation and management)

2.1.7.1. Renal trauma

2.1.7.2. Ureteral trauma

2.1.7.3. Bladder trauma

2.1.7.4. Urethral trauma

2.1.7.5. External genital trauma

2.1.8. Renovascular hypertension

2.1.8.1. Surgically correctable hypertension

2.1.9. Renal transplantation

2.1.9.1. Recipient selection and organ donation

2.1.9.2. Relevant transplantation immunology

2.1.9.3. Principles of immunosuppression

2.1.9.4. Management of surgical complications of renal transplantation

2.1.10. Andrology

2.1.10.1. Male sexual function and dysfunction

2.1.10.2. Fertility and male factor infertility

2.1.10.3. Hypogonadism

2.1.11. Urological oncology. For all tumors (benign and malignant) of the genito-urinary tract, the resident MUST be able to

2.1.11.1. Describe the etiology, prevention, natural history, role of screening, and pathology

2.1.11.2. Diagnose the condition through appropriate use of investigative and diagnostic techniques

2.1.11.3. Apply staging and grading systems that are in common use

2.1.11.4. Describe the principles of cancer management, including the role of surgery, radiotherapy, chemotherapy, and immunotherapy

2.1.11.5. Be familiar with the role of percutaneous, angiographic, and new techniques and their indications

2.1.11.6. Describe the principles of cancer palliation

2.1.11.7. The following tumors must be covered:

2.1.11.7.1. Tumors of the kidney

2.1.11.7.1.1. Renal epithelial tumors

2.1.11.7.1.2. Wilms' tumor

2.1.11.7.1.3. Urothelial carcinoma of renal pelvis and ureter

2.1.11.7.1.4. Angiomyolipoma

2.1.11.7.2. Tumors of the bladder

2.1.11.7.2.1. Urothelial carcinoma

2.1.11.7.2.2. Squamous cell carcinoma

2.1.11.7.3. Cancer of the prostate

2.1.11.7.3.1. Adenocarcinoma

2.1.11.7.3.2. Other tumors

2.1.11.7.4. Tumors of the testes

2.1.11.7.4.1. Germ cell (including seminoma and non-seminoma)

2.1.11.7.4.2. Non-germ cell tumors

2.1.11.7.5. Cancer of the penis

2.1.11.7.5.1. Squamous cell carcinoma

2.1.11.7.6. Cancer of the urethra

2.1.11.7.7. Tumors of the adrenal

2.1.11.7.7.1. Pheochromocytoma

2.1.11.7.7.2 Neuroblastoma

2.1.11.7.7.3. Adrenal adenoma

2.1.11.7.7.4. Adenocarcinoma

2.1.11.7.8. Metastatic cancers of the genito-urinary tract

2.1.12. Voiding disorders, including relevant neurourology

2.1.12.1. Urinary incontinence

2.1.12.2. Voiding dysfunction due to neurological disease

2.1.12.3. Nocturnal enuresis

2.1.12.4. Functional voiding disorders

2.1.12.5. Interstitial cystitis

2.1.13. Adrenal diseases

2.1.13.1. Adrenal cysts, hyperplasia

2.1.13.2. Adrenal hyperfunction, hypofunction, and associated syndromes

2.1.14. Systemic diseases and other processes affecting the urinary tract

2.1.14.1. Urological manifestations of systemic diseases (including diabetes mellitus, sepsis, HIV/AIDS, and other disorders of immunocompromised patients)

2.1.14.2. The urinary tract in pregnancy (including normal physiologic and anatomic changes and management of urinary tract problems in the pregnant patient)

2.1.15. Disorders of the male external genitalia

2.1.15.1. Hydrocele, varicocele, spermatocele, cysts

2.1.15.2. Torsion of the testes, cord, and appendages

2.1.15.3. Inguinal hernia

2.1.15.4. All benign, premalignant, and malignant dermatological lesions of the male external genitalia

2.2. Demonstrate knowledge of the mechanism of action and physiological effects of therapeutic technologies relevant to urology

2.2.1. Laparoscopy

2.2.1.1. Understand the principles of laparoscopy, the role of laparoscopy in benign and malignant diseases, its indications and contraindications, and recognition and treatment of its complications

2.2.2. Electrosurgery

2.2.3. Extracorporeal shockwave lithotripsy

2.2.4. Lasers

2.2.5. Transurethral prostatic hyperthermia/thermotherapy and other alternative modalities used in the management of patients with benign prostatic hyperplasia

2.2.6. Botulinum toxin

2.2.7. Neurostimulation

2.2.8. Radiofrequency ablation

2.2.9. Cryotherapy

2.3. Describe the CanMEDS framework of competencies relevant to urology

2.4. Apply lifelong learning skills of the scholar role to implement a personal program to keep up-to-date, and enhance areas of professional competence

2.5. Contribute to the enhancement of quality care and patient safety in their practice, integrating the best available evidence and practices

3. Perform a complete and appropriate assessment of a patient

3.1. Identify and explore issues to be addressed in a patient encounter effectively, including the patient's context and preferences

3.2. Elicit a history that is relevant, concise, and accurate to context and preferences for the purposes of prevention and health promotion, diagnosis, and/or management

3.3. Perform a focused physical examination that is relevant and accurate for the purposes of prevention and health promotion, diagnosis, and/or management

3.4. Select medically appropriate investigative methods in a resource-effective and ethical manner

3.5. Demonstrate effective clinical problem solving skills and judgment to address patient problems, including interpreting available data and integrating information to generate differential diagnoses and management plans

4. Use preventive and therapeutic interventions effectively

4.1. Implement a management plan in collaboration with a patient and his/her family

4.2. Demonstrate appropriate and timely application of preventive and therapeutic interventions relevant to urology

4.3. Ensure appropriate informed consent is obtained for therapies

4.4. Ensure patients receive appropriate end-of-life care

5. Appropriately use and interpret diagnostic tests relevant to urology

5.1. Demonstrate effective, appropriate, and timely performance of diagnostic procedures relevant to their practice

5.1.1. Urinalysis

5.1.1.1. Routine urinalysis

5.1.1.2. Urine culture techniques

5.1.1.3. Urinary collections for metabolic studies

5.1.1.4. Urine cytological studies

5.1.2. Semen analysis

5.1.2.1. Qualitative and quantitative analyses

5.1.3. Prostatic fluid examination

5.1.3.1. Microscopic examination

5.1.4. Biochemical serum studies

5.1.4.1. Renal function tests

5.1.4.2. Adrenal function tests

5.1.4.3. Tumor markers

5.1.5. Intravenous excretory urography

5.1.6. Retrograde urethrography, cystography, and pyelography

5.1.7. Antegrade imaging of the kidneys and pelvic vessels

5.1.8. Loopography

5.1.9. Voiding cystourethrography

5.1.10. Ultrasonography

5.1.10.1. Kidney

5.1.10.2. Bladder

5.1.10.3. Prostate

5.1.10.4. Scrotal contents

5.1.10.5. Doppler studies of renal, gonadal, and penile vessels

5.1.10.6. Ultrasound-guided procedures (aspirations, biopsies, drainage)

5.1.11. Radioisotope studies

5.1.11.1. Renal scans (all types)

5.1.11.2. Voiding cystograms

5.1.11.3. Bone scans for staging of malignant disease

5.1.11.4. Scans for localization of inflammatory lesions

5.1.11.5. Scans for adrenal localization

5.1.12. CT scanning

5.1.12.1. Abdomen and pelvis

5.1.12.2. CT-guided procedures (aspirations, biopsies, drainage)

5.1.13. MRI scanning of the urinary tract

5.1.14. Angiography of the renal vasculature

5.1.15. Urodynamic studies

5.1.15.1. Cystometrogram

5.1.15.2. Uroflowmetry

5.1.15.3. Voiding pressure studies

5.1.15.4. Pelvic floor electromyography

5.1.15.5. Videourodynamic studies

5.1.16. Phallodynamics

5.1.16.1. Dynamic infusion cavernosometry and caversography (DICC)

5.1.16.2. Duplex ultrasound scans

5.1.16.3. Combined injection and stimulation test (CIS)

5.1.17. Diagnostic histopathology

5.1.17.1. Malignant lesions of the kidney

5.1.17.1.1. Renal carcinoma

5.1.17.1.2. Wilms' tumor

5.1.17.2. Benign lesions of the kidney

5.1.17.2.1. Oncocytoma

5.1.17.2.2. Angiomyolipoma

5.1.17.3. Urothelial neoplasms

5.1.17.3.1. Urothelial carcinoma of the renal pelvis and ureter

5.1.17.3.2. Bladder carcinomas

5.1.17.3.3. Urethra carcinoma

5.1.17.4. Prostatic neoplasms

5.1.17.4.1. Prostatic adenocarcinoma

5.1.17.4.2. Prostatic intraepithelial neoplasia

5.1.17.4.3. Benign prostatic hyperplasia

5.1.17.5. Testis tumors

5.1.17.5.1. Germ cell tumors (seminoma and non-seminoma)

5.1.17.5.2. Functional tumors of the testes (Leydig cell tumors)

5.1.17.5.3. Sertoli cell tumors

5.1.17.6. Inflammatory lesions of the kidneys

5.1.17.6.1. Xanthogranulomatous pyelonephritis

5.1.17.6.2. Tuberculosis

5.1.17.6.3. Chronic pyelonephritis

5.1.17.7. Inflammatory lesions of the lower urinary tract

5.1.17.7.1. Interstitial cystitis

5.1.17.7.2. Cystitis cystica

5.1.17.7.3. Cystitis glandularis

5.1.17.7.4. Cystitis follicularis

5.1.17.7.5. Prostatitis

6. Demonstrate proficient and appropriate use of procedural skills

6.1. *Surgical Procedures List A*

The training resident in levels R3 to R5 **must perform** the following procedures as the **primary surgeon** and **only under the direct and immediate supervision of the attending urologist**. In addition, he must be able to manage the patient prior to, during, and after the procedure.

Endoscopic and Percutaneous Procedures
6.1.1. Cystoscopy and urethroscopy, ureteric catheterization, including ureteric stent insertion and removal, retrograde pyelography
6.1.2. Urethral dilatation and visual internal urethrotomy
6.1.3. Transurethral biopsy of bladder and urethra
6.1.4. Transurethral resection of prostate
6.1.5. Transurethral resection of bladder tumors
6.1.6. Transurethral resection/incision of ureterocele
6.1.7. Manipulation of bladder calculi including litholopaxy
6.1.8. Ureteroscopy, lithotripsy, and basket extraction of ureteric calculi
6.1.9. Endoscopic injection for vesico-ureteric reflux
6.1.10. Suprapubic catheter insertion
6.1.11. Percutaneous renal surgery including nephrolithotomy with ultrasound/electrohydraulic/laser lithotripsy
6.1.12. Transrectal ultrasound-guided biopsy of the prostate
6.1.13. Extra-corporeal shockwave lithotripsy
Open Procedures
6.1.14. Circumcision
6.1.15. Suprapubic cystostomy
6.1.16. Urethral meatotomy, meatoplasty
6.1.17. Meatal repair for glanular hypospadias
6.1.18. Fulguration of venereal warts
6.1.19. Scrotal surgery—hydrocele, epididymal cyst, epididymectomy, simple orchiectomy
6.1.20. Varicocele repair
6.1.21. Orchiopexy for inguinal testis
6.1.22. Radical orchiectomy

6.1.23. Repair of testicular torsion
6.1.24. Pyeloplasty for ureteropelvic junction obstruction
6.1.25. Nephrectomy (simple and radical)
6.1.26. Nephroureterectomy
Laparoscopic Procedures
6.1.27. Laparoscopic orchiopexy/orchiectomy for abdominal testis

6.2. *Surgical Procedures List B*

The training resident in levels R3 to R5 **must know how to perform** and **be able to describe** the following procedures, including indications, and peri-operative management. Residents may not actually perform one of these procedures independently during the residency-training period, but if the opportunity arises, they should assist in the operation.

Endoscopic and Percutaneous Procedures
6.2.1. Resection of posterior urethral valves
6.2.2. Endoscopic pyeloplasty (endopyelotomy)
6.2.3. Transurethral excision of external sphincter
Open Procedures
6.2.4. Renal biopsy
6.2.5. Nephrolithotomy and ureterolithotomy
6.2.6. Ureterolysis, ureteroplasty, uretero-pyelostomy
6.2.7. Cutaneous ureterostomy/pyelostomy
6.2.8. Vesicostomy
6.2.9. Procedures for renal trauma repair
6.2.10. Perineal urethrostomy
6.2.11. Trans-uretero-ureterostomy
6.2.12. Procedures for correction of penile curvature and Peyronie's disease
6.2.13. Penectomy
6.2.14. Urethrectomy
6.2.15. Augmentation cystoplasty
6.2.16. Continent urinary reservoir
6.2.17. Drainage of perinephric, perivesical, and retroperitoneal abscess
6.2.18. Adrenalectomy, including surgery of pheochromocytoma
6.2.19. Insertion of testicular prosthesis
6.2.20. Insertion of penile prosthesis
6.2.21. Insertion of artificial urinary sphincter
6.2.22. Simple retropubic prostatectomy
6.2.23. Radical nephrectomy with vena cava thrombus below diaphragm
6.2.24. Correction of mid and distal shaft hypospadias
6.2.25. Biopsy of penile lesions
6.2.26. Testicular biopsy
6.2.27. Vasectomy
6.2.28. Cavernosal shunting procedures for priapism
6.2.29. Pediatric indirect hernia repair
6.2.30. Procedures for correction of stress urinary incontinence
6.2.31. Uretero-neocystostomy
6.2.32. Repair of urinary fistulae—involving bladder, urethra, ureter, kidney
6.2.33. Urinary diversion procedures—ileal conduits
6.2.34. Radical cystectomy and anterior pelvic exenteration
6.2.35. Procedures for ureteral and bladder trauma repair
6.2.36. Pelvic lymphadenectomy
6.2.37. Partial nephrectomy for cancer
6.2.38. Uretero-ureterostomy
6.2.39. Correction of proximal hypospadias and epispadias

6.2.40. Surgical reconstruction for exstrophy
6.2.41. Transplant nephrectomy
6.2.42. Renal transplantation
6.2.43. Anatrophic nephrolithotomy
6.2.44. Removal of vena caval and atrial tumor thrombus for carcinoma of the kidney
6.2.45. Urethral reconstruction for anterior urethral strictures and pelvic fracture distraction injuries
6.2.46. Epididymo-vasostomy with microscope
6.2.47. Post-chemotherapy retroperitoneal lymph node dissection
6.2.48. Vasovasostomy
6.2.49. Inguinal lymphadenectomy for carcinoma penis
6.2.50. Cadaveric and live donor renal harvesting for transplantation
6.2.51. Retroperitoneal lymph node dissection
Laparoscopic Procedures
6.2.52. Adrenalectomy
6.2.53. Pyeloplasty
6.2.54. Nephrectomy (simple and radical)
6.2.55. Prostatectomy
6.2.56. Varicocelectomy
6.2.57. Live donor nephrectomy

6.3. Prepare a patient for surgery and seek appropriate consultation from other healthcare professionals if necessary

6.4. Ensure appropriate informed consent is obtained for procedures

6.5. Document and disseminate information related to procedures performed and their outcomes

6.6. Ensure adequate follow-up is arranged for procedures performed

7. Seek appropriate consultation from other health professionals, recognizing the limits of their expertise

7.1. Demonstrate insight into their own limitations of expertise

7.2. Demonstrate effective, appropriate, and timely consultation of another health professional as needed for optimal patient care

7.3. Arrange appropriate follow-up care services for a patient and their family

2) Communicator:

Definition:
As *Communicators*, urologists effectively facilitate the doctor-patient relationship and the dynamic exchanges that occur before, during, and after the medical encounter.

Key and Enabling Competencies: Urologists will be able to

1. Develop rapport, trust, and ethical therapeutic relationships with patients and families

1.1. Recognize that being a good communicator is a core clinical skill for urologists, and that effective physician-patient communication can foster patient satisfaction, physician satisfaction, adherence, and improved clinical outcomes

1.2. Establish positive therapeutic relationships with patients and their families that are characterized by understanding, trust, respect, honesty, and empathy

1.3. Respect patient confidentiality, privacy, and autonomy

1.4. Listen effectively

1.5. Demonstrate awareness of, and responsiveness to, nonverbal cues such as non-verbalized fears, anxieties, and needs for privacy

1.6. Facilitate structured clinical encounters effectively

2. Accurately elicit and synthesize relevant information and perspectives of patients and families, colleagues, and other professionals

2.1. Gather information about a disease and about a patient's beliefs, concerns, expectations, and illness experience

2.2. Seek out and synthesize relevant information from other sources, such as a patient's family, caregivers, and other professionals

3. Convey relevant information and explanations accurately to patients and families, colleagues, and other professionals

3.1. Deliver information to a patient and family, colleagues, and other professionals in a humane manner and in such a way that it is understandable, and encourages discussion and participation in decision-making

3.1.1. Communicate bad news to patients and families in an empathic manner

4. Develop a common understanding of issues, problems, and plans with patients, families, and other professionals to develop a shared plan of care

4.1. Effectively identify and explore problems to be addressed from a patient encounter, including the patient's context, responses, concerns, and preferences

4.2. Respect diversity and differences, including, but not limited to the impact of gender, religion, and cultural beliefs on decision-making

4.3. Encourage discussion, questions, and interaction in the encounter

4.4. Engage patients, families, and relevant health professionals in shared decision-making to develop a plan of care

4.5. Address challenging communication issues effectively, such as obtaining informed consent, delivering bad news, and addressing anger, confusion, and misunderstanding

4.5.1. Demonstrate awareness of their own feelings and biases and recognize any personal reactions, which may be detrimental to the physician-patient relationship

5. Convey effective oral and written information about a medical encounter

5.1. Maintain clear, accurate, and appropriate records (e.g., written or electronic) of clinical encounters and plans

5.1.1. Accurately and succinctly record data collected from patients, laboratory tests, and radiological studies

5.1.2. Communicate opinions clearly in the form of consultation letters, telephone calls to family physicians, other consultant specialists, and allied health professionals

5.2. Present verbal reports of clinical encounters and plans

5.2.1. Clearly and concisely explain

5.2.1.1. Diagnosis and management plans for urological problems in a way that motivates and facilitates patients' willing participation

5.2.1.2. Management plans to other health care personnel in a way that ensures their effective participation

5.2.1.3. Steps necessary for problem management when acting as a consultant for other physicians

5.3. Effectively present medical information to the public or media about a medical issue

3) Collaborator:

Definition:

As *Collaborators*, urologists work effectively within a healthcare team to achieve optimal patient care.

Key and Enabling Competencies: Urologists will be able to

1. Participate effectively and appropriately in an interprofessional healthcare team

1.1. Describe the urologist's roles and responsibilities to other professionals

1.2. Describe the roles and responsibilities of other professionals within the urological healthcare team, including, but not limited to nurses, occupational and physiotherapists, and imaging technologists

1.3. Recognize and respect the diversity of roles, responsibilities, and competencies of other professionals in relation to their own

1.4. Work with others to assess, plan, provide, and integrate care for individual patients (or groups of patients)

1.5. Work with others to assess, plan, provide, and review other tasks, such as research problems, educational work, program review, or administrative responsibilities

1.6. Participate in interprofessional urological team meetings

1.7. Enter into interdependent relationships with other professions for the provision of quality care

1.8. Describe the principles of team dynamics

1.9. Respect team ethics, including confidentiality, resource allocation, and professionalism

1.10. Demonstrate progressive leadership in a healthcare team, as appropriate

2. Work effectively with other health professionals to prevent, negotiate, and resolve interprofessional conflict

2.1. Demonstrate a respectful attitude towards other colleagues and members of an interprofessional team

2.2. Work with other professionals to prevent conflicts

2.3. Employ collaborative negotiation to resolve conflicts

2.4. Respect differences and address misunderstandings and limitations in other professionals

2.5. Recognize one's own differences, misunderstandings, and limitations that may contribute to interprofessional tension

2.6. Reflect on interprofessional team functioning

4) Manager

Definition:

As *Managers*, urologists are integral participants in healthcare organizations, organizing sustainable practices, making decisions about allocating resources, and contributing to the effectiveness of the healthcare system.

Key and Enabling Competencies: Urologists will be able to

1. Participate in activities that contribute to the effectiveness of healthcare organizations and systems

1.1. Work collaboratively with others in their organizations

1.2. Participate in systemic quality process evaluation and improvement, such as patient safety initiatives

1.3. Describe the structure and function of the healthcare system as it relates to urology, including the roles of urologists

1.4. Describe principles of healthcare financing, including physician remuneration, budgeting, and organizational funding

2. Manage their practice and career effectively

2.1. Set priorities and manage time to balance patient care, practice requirements, outside activities, and personal life

2.2. Manage a practice, including finances and human resources

2.2.1. Demonstrate knowledge of issues pertaining to running a private office, including staffing, billing, and maintaining patient records

2.3. Implement processes to ensure personal practice improvement

2.4. Appropriately employ information technology for patient care

3. Allocate finite healthcare resources appropriately

3.1. Recognize the importance of just allocation of healthcare resources, balancing effectiveness, efficiency, and access with optimal patient care

3.2. Apply evidence and management processes for effective cost-appropriate care

3.2.1. Access appropriate urological diagnostic and therapeutic technology in a timely and efficient manner to benefit patients

3.3. Organize a priority list for patients waiting for surgery

4. Serve in administration and leadership roles

4.1. Chair or effectively participate in committees and meetings

4.2. Lead or implement change in healthcare

4.3. Plan relevant elements of healthcare delivery (e.g., work schedules)

5) Health Advocate:

Definition:

As *Health Advocates*, urologists responsibly use their expertise and influence to advance the health and well-being of individual patients, communities, and populations.

Key and Enabling Competencies: Urologists will be able to

1. Respond to individual patient health needs and issues as part of patient care

1.1. Identify the health needs of an individual urology patient

1.2. Identify opportunities for advocacy, health promotion, and disease prevention for individuals to whom they provide care

1.2.1. Take advantage of opportunities to discuss lifestyle changes that influence urological health

2. Respond to the health needs of the communities that they serve

2.1. Describe the practice communities that they serve

2.2. Identify opportunities for advocacy, health promotion, and disease prevention in the communities that they serve, and respond appropriately

2.2.1. Demonstrate understanding of the role of community-based patient support groups

2.3. Appreciate the possibility of competing interests between the communities served and other populations

3. Identify the determinants of health for the populations served

3.1. Identify the determinants of health of the populations, including barriers to accessing care and resources

3.2. Identify vulnerable or marginalized populations within those served and respond appropriately

4. Promote the health of individual patients, communities, and populations

4.1. Describe an approach to implementing a change in a determinant of health of the populations served, such as screening/early detection of certain diseases

4.2. Describe how public policy impacts on the health of the populations served

4.3. Identify points of influence in the healthcare system and its structure

4.4. Describe ethical and professional issues inherent in health advocacy, including altruism, social justice, autonomy, integrity, and idealism

4.5. Appreciate the possibility of conflict inherent in their roles as health advocate for patients or communities and manager or gatekeeper

4.6. Describe the role of the medical profession in collectively advocating for health and patient safety

4.6.1. Understand the role and function of the Saudi Urological Association (SUA) and other provincial and international urological societies

6) Scholar

Definition:

As *Scholars*, urologists demonstrate a lifelong commitment to reflective learning, as well as the creation, dissemination, application, and translation of medical knowledge.

Key and Enabling Competencies: Urologists will be able to

1. Maintain and enhance professional activities through ongoing learning

1.1. Describe the principles of maintenance of competence

1.1.1. Maintain an inquisitive attitude

1.1.2. Describe the time commitment required for ongoing self-study for the maintenance of competence

1.2. Describe principles and strategies for implementing a personal knowledge management system

1.3. Recognize and reflect on learning issues in practice

1.4. Conduct a personal practice audit

1.5. Pose an appropriate learning question

1.6. Access and interpret relevant evidence

1.7. Integrate new learning into practice

1.8. Evaluate the impact of any change in practice

1.9. Document the learning process

1.9.1 Complete surgical logs through the electronic logbook

1.10. Demonstrate continuing evaluation of their own capabilities and limitations

2. Critically evaluate medical information and its sources, and apply this appropriately to practice decisions

2.1. Describe the principles of critical appraisal

2.2. Critically appraise retrieved evidence in order to address a clinical question

2.3. Integrate critical appraisal conclusions into clinical care

3. Facilitate the learning of patients, families, students, residents, other health professionals, the public, and others

3.1. Describe principles of learning relevant to medical education

3.2. Collaboratively identify the learning needs and desired learning outcomes of others

3.3. Select effective teaching strategies and content to facilitate others' learning

3.4. Demonstrate an effective lecture or presentation

3.5. Assess and reflect on a teaching encounter

3.6. Provide effective feedback

3.7. Describe principles of ethics with respect to teaching

4. Contribute to the development, dissemination, and translation of new knowledge and practices

4.1. Describe the principles of research and scholarly inquiry

4.2. Describe the principles of research ethics

4.2.1. Demonstrate an understanding of the ethics of animal and human experimentation

4.2.2. Demonstrate an ability to incorporate gender, cultural, and ethnic perspectives in research methodology, data presentation, and analysis

4.3. Pose a scholarly question

4.3.1. Formulate a scientific research study to answer a clinical question

4.4. Conduct a systematic search for evidence

4.4.1. Demonstrate the use of databases for literature searches and reviews

4.5. Select and apply appropriate methods to address the question

4.5.1. Describe basic statistical methods used in clinical trials

4.6. Disseminate the findings of a study

5. Complete at least one scholarly project under the mentorship of an attending urologist or other faculty supervisor. The project should be presented at either a national or an international scientific event or published in a peer-reviewed journal. Residents are encouraged to complete the project or make significant progress toward completion of training before their final examination.

7) Professional

Definition:

As *Professionals*, urologists are committed to the health and well-being of individuals and society through ethical practice, profession-led regulation, and high personal standards of behavior.

Key and Enabling Competencies: Urologists will be able to

1. Demonstrate a commitment to their patients, profession, and society through ethical practice

1.1. Exhibit appropriate professional behaviors in practice, including honesty, integrity, commitment, compassion, respect, and altruism

1.1.1. Demonstrate personal responsibility to patients through availability and confidentiality

1.2. Demonstrate a commitment to delivering the highest quality care and maintenance of competence

1.2.1. Demonstrate adherence to the best available practice, including referral to other qualified practitioners when appropriate

1.2.2. Demonstrate meticulous accuracy in reporting clinical and scientific information

1.3. Recognize and appropriately respond to ethical issues encountered in practice

1.4. Manage conflicts of interest

1.5. Recognize the principles and limits of patient confidentiality, as defined by professional practice standards and the law

1.6. Maintain appropriate relations with patients

2. Demonstrate a commitment to patients, the profession, and society through participation in profession-led regulation

2.1. Participate in Saudi and international professional organizations

2.2. Demonstrate knowledge and an understanding of the professional, legal, and ethical codes of practice

2.2.1. Demonstrate knowledge of the ethical problems of human organ procurement for the purposes of transplantation

2.2.2. Demonstrate working knowledge of provincial and federal laws and regulations related to the practice of medicine in general and urology in particular

2.2.3. Demonstrate an understanding and appreciation for patients' legal rights in matters related to informed consent, delegated consent, and informed decision-making

2.3. Fulfill regulatory and legal obligations required of current practice

2.4. Demonstrate accountability to professional regulatory bodies

2.5. Recognize and respond to others' unprofessional behaviors in practice

2.5.1. Demonstrate an understanding of medical protective procedures and the role of the Canadian Medical Protective Association in areas of patient-physician and hospital-physician disputes

2.6. Participate in peer review

3. Demonstrate a commitment to physician health and sustainable practice

3.1. Balance personal and professional priorities to ensure personal health and a sustainable practice

3.2. Strive to heighten personal and professional awareness and insight

3.3. Recognize other professionals in need and respond appropriately

3.4. Identify a colleague or faculty member with whom they may discuss personal and professional goals, conflicts, and stresses

CanMEDS Specific Training Level Objectives Guide (R3, R4, R5)

CanMEDS Roles and Goals/Competencies							
General	**Medical Expert**	**Communicator**	**Collaborator**	**Manager**	**Health Advocate**	**Scholar**	**Professional**
Residents are expected to be competent specialists in urology, capable of assuming the role of consultants in the specialty. Residents must acquire working knowledge of the theoretical basis of the specialty, including its foundations in basic medical sciences and related research. Urology residents must understand the normal function and pathological processes and diseases that affect the adrenal gland, kidneys, ureters, bladder, and urethra in the male and female, and the prostate and external genitalia of the male. This includes an understanding, appropriate to the practice of urology, of normal development and embryology, biochemistry and pharmacology, physiology, anatomy, and gross and microscopic pathology of the genito-urinary tract.	Function effectively as urology residents with increasing levels of responsibility according to year of training. Integrate all of the CanMEDS Roles to provide optimal, ethical, and patient-centered medical care Establish and maintain clinical knowledge, skills, and attitudes appropriate to urology Perform a complete and appropriate assessment of a patient Use preventive and therapeutic interventions effectively Appropriately use and interpret diagnostic tests relevant to urology Demonstrate proficient and appropriate use of procedural skills Recognize the limits of their expertise and seek appropriate consultation from other health professionals	Develop rapport, trust, and ethical therapeutic relationships with patients and families Accurately elicit and synthesize relevant information and perspectives of patients and families, colleagues, and other professionals Convey relevant information and explanations accurately to patients and families, colleagues, and other professionals Develop a common understanding of issues, problems, and plans with patients, families, and other professionals to develop a shared plan of care Convey effective oral and written information about a medical encounter	Participate effectively and appropriately in an inter-professional healthcare team Work with other health professionals effectively to prevent, negotiate, and resolve inter-professional conflict	Participate in activities that contribute to the effectiveness of healthcare organizations and systems effectively Allocate finite healthcare resources appropriately Serve in administrative and leadership roles	Respond to individual patient health needs and issues as part of patient care Identify determinants of health for the populations and communities served Promote the health of individual patients, communities, and populations	Maintain and enhance professional activities through ongoing learning Critically evaluate medical information and its sources, and apply this appropriately to practice decisions Facilitate the learning of patients, families, students, residents, other health professionals, the public, and others Contribute to the development, dissemination, and translation of new knowledge and practices Complete at least one research project under the mentorship of an attending urologist, present the project at either a national or an international scientific event, and encourage its publication in a peer-reviewed journal.	Demonstrate a commitment to patients, the profession, and society through ethical practice Demonstrate a commitment to patients, the profession, and society through participation in profession-led regulation Demonstrate a commitment to physician health and sustainable practice

Procedures and clinical skills: Specific objectives according to level of training for (R3, R4, R5)*

Procedures and clinical skills	Procedures	R3	R4	R5
1. Minor open/laparoscopic procedures	Minimum of 70 procedures performed collectively (There should be a minimum of 10 of any particular procedure)	• Varicocelectomy • Hydrocelectomy • Cystostomy • Meatotomy & circumcision • Incision & drainage procedures • Orchiopexy / hernial repair/ Orchiectomy • Testicular biopsy		
	Minimum required (%) to be promoted to the next level of training	50	30	20
2. Major open/laparoscopic procedures	Minimum of 30 procedures performed collectively (There should be minimum of 2 of any particular procedure)	• Sperm retrieval procedures • Pyeloplasty • Pyelolithotomy/nephrolithotomy • Open prostatectomy/radical prostatectomy • Repair of vesicovaginal fistula • Ureteral reimplantation • Nephrectomy (simple, radical/donor, partial) • Distal hypospadias repair • Nephroureterectomy • Adrenalectomy • Radical cystectomy • Pelvic/retroperitoneal lymphadenectomy • Urinary diversion/augmentation cystoplasty • Ureterolysis • Urethroplasty • Vesicouretheral suspension procedures		
	Minimum required (%) to be promoted to the next level of training	20	30	50
3. Minor endoscopic procedures	Minimum of 70 procedures performed collectively (There should be minimum of 10 of any particular procedure)	• Cystoscopy • Bladder biopsy/fulguration • Retrograde studies • Insertion of ureteral stents • Prostatic biopsy • Visual internal urethrotomy • Cystoscopic injection for vesicoureteral reflux		
	Minimum required (%) to be promoted to the next level of training	50	50	0
4. Major endoscopic procedures	Minimum of 30 procedures performed collectively (There should be a minimum of 5 of any particular procedure)	• Ureteroscopy • Cystolitholapaxy • Trans-urethral resection of the prostate • Trans-urethral resection of bladder tumor • Percutaneous nephrolithotomy (PCNL) • Endopyelotomy		
	Minimum required (%) to be promoted to the next level of training	30	50	20
5. Management of trauma cases	Minimum of 10 cases collectively (There should be a minimum of 2 of any particular case)	• Conservative treatment • Cystostomy • Urinary bladder repair • Renal exploration • Urethral repair		
	Minimum required (%) to be promoted to the next level of training	40	40	20
6. Diagnostic/therapeutic urological procedures	Minimum of 40 procedures performed collectively (There should be a minimum of 5-10 of any particular procedure)	• Trans-rectal ultrasound of the prostate • Shockwave lithotripsy (SWL) • Urodynamics • Penile doppler studies		
	Minimum required (%) to be promoted to the next level of training	40	40	20

* **Residents in R3 will be required mainly to perform minor (open/endoscopic/laparoscopic) procedures**
* **Residents in R4 will be required mainly to perform major (endoscopic) procedures**
* **Residents in R5 will be required mainly to perform major (open/laparoscopic) procedures**
* **Apart from major (open/laparoscopic procedures), residents are required to finish at least 75% of their required procedures before being promoted to the R5 training year**

TEACHING AND LEARNING

Teaching and Learning

1. Time management for the distribution of learning and educational activities

1.1 Every week at least **4–6 hours of formal training time** should be reserved. Formal teaching time is an activity that is planned in advanced with an assigned tutor, time slot, and venue. Formal teaching time includes any of the following:

1.1.1. Morning report or case presentations

1.1.2. Journal clubs

1.1.3. Systematic reviews, etc.

1.1.4. Hospital grand rounds and other continuing medical education (CMEs)

1.1.5. Core specialty topics (*see Section 4.2 page 75*), simulations, or workshops

1.2. Every two weeks, at least 1 hour should be assigned to meet with mentors, review portfolios, mini-CEX, etc.

2. Practice-based learning (PBL) contents

2.1. Residency training educational curriculum, which includes

2.1.1. Morning reports (MR)

2.1.2. Morbidity and mortality reports (MMR)

2.1.3. Grand rounds/guest speaker lectures

2.1.4. Case presentations

2.1.5. Journal clubs, critical appraisal, and evidence-based medicine

2.1.6. Joint specialty meetings

2.2. Weekly half-day academic activity, which includes

2.2.1. Topic review

2.2.2. Urological procedures

2.2.3. Approach to common conditions and symptoms

2.2.4. Clinical skills

2.2.5. Communication skills

2.2.6. Medical ethics

2.2.7. Data interpretation

2.2.8. Research and evidence-based medicine

2.3. Work-based learning, which includes

2.3.1. Daily-rounds-based learning

2.3.2. On-call duty-based learning

2.3.3. Clinical-based learning

2.4. Self-directed learning (SDL)

3. Practice-based learning (PBL) objectives

ACTIVITY	OBJECTIVES	CanMEDS COMPETENCIES
1. Educational Curriculum		
a. Morning Report (MR)	• Educate all attending residents, monitor patient care, and review management decisions and their outcomes. • Develop competence in short presentations of all admitted patients in a scientific and informative fashion. • Develop confidence in presenting long cases in a systematic fashion. • Generate appropriate differential diagnoses and proper management plans.	Manager Medical Expert Professional Scholar
b. Morbidity and Mortality Report (MMR)	• Identify areas of improvement for clinicians involved in case management. • Prevent errors that lead to complications. • Modify behavior and judgment based on previous experiences. • Identify systems issues that may affect patient care, such as outdated policies and changes in patient identification procedures.	Professional Manager Medical Expert
c. Grand Rounds/Guest Speaker Lectures	• Increase medical knowledge and skills, and ultimately, improve patient care. • Understand and apply current practice guidelines in the field of urology and its subspecialties. • Describe the latest advances in the field of urology and research. • Identify and explain areas of controversy in the field of urology.	Medical Expert Professional
d. Case Presentation	• Present a comprehensive history and physical examination with details pertinent to the patient's problem. • Formulate a list of all problems identified in the history and physical examination. • Develop a proper differential diagnosis for each problem. • Formulate a diagnosis/treatment plan for each problem. • Present a follow-up patient's case, in a focused, problem-based manner that includes pertinent new findings and diagnostic and treatment plans. • Demonstrate a commitment to improving case presentation skills by regularly seeking feedback on presentations. • Accurately and objectively record and present data.	Medical Expert Scholar
e. Journal Clubs, Critical Appraisal, and Evidence-Based Medicine	• Promote continuing professional development. • Keep up -to-date with the literature. • Disseminate information and build up debate about good practice. • Ensure that professional practice is evidence-based. • Learn and practice critical appraisal skills. • Provide an enjoyable educational and social occasion.	Medical Expert Scholar Health Advocate
f. Joint Specialty Meetings	• Provide the knowledge, technical skills, and experience necessary for urology residents to interpret and correlate clinical findings, and laboratory data such as radiological imaging, with pathological changes. • Promote effective communication and sharing of expertise with peers and colleagues.	Medical Expert Communicator Collaborator Manager

	• Promote the development of investigative skills to better understand pathologic processes as they apply to both individual patients and the general patient population. • Promote the acquisition of knowledge, provide experience in laboratory direction and management, and encourage residents to assume a leadership role in the education of other physicians and allied health professionals.	
2. Academic Half-Day		
a. Topic Review	• Review common emergency and non-emergency situations in terms of diagnosis and management.	Medical Expert Scholar
b. Urological Procedures	• Apply knowledge and technical expertise in performing the procedure, interpreting results, and understanding limitations. • Demonstrate effective, appropriate, and timely performance of therapeutic procedures • Demonstrate evidence-based physical examination skills that are relevant and concise. • Learn ultrasound-guided procedures • For each procedure, master - Indications - Contraindications - Complications and complication rate - Procedural techniques - Sterile techniques - Consent for the procedure - Ability to demonstrate the procedure - Ultrasound technology, in general - Reporting of complications	Medical Expert Professional Collaborator
c. Approaches to Common Conditions and Symptoms	• Demonstrate diagnostic and therapeutic skills. • Access and apply relevant information to clinical practice. • Practice contemporary, evidence-based, and cost-effective medicine. • Avoid unnecessary or harmful investigations or management.	Medical Expert Scholar Professional
d. Clinical Skills	• Recognize the many facets of the doctor-patient relationship and apply a bio-psychosocial model to issues of health and medicine. • Master skills of basic interviewing and demonstrate competence in some advanced interviewing skills. • Master basic skills in physical examination and be able to perform and interpret a focused examination. • Exhibit professional behaviors, including demonstration of respect for patients, colleagues, faculty, and others in all settings. • Prepare residents for clinical exams.	Medical Expert Scholar Communicator Professional
e. Communication Skills	• Recognize the many facets of the doctor-patient relationship and apply a bio-psychosocial model to issues of health and medicine. • Develop patient-centered therapeutic communication through shared decision-making and effective dynamic interactions with patients, families, caregivers, other professionals, and other key individuals. • Master basic interviewing skills and demonstrate competence in some advanced interviewing skills. • Exhibit professional behavior, including demonstration of respect for patients, colleagues, faculty, and others in all settings.	Communicator Profession
f. Medical Ethics	• Recognize the humanistic and ethical aspects of the medical career. • Examine and affirm personal and professional moral commitments. • Develop a foundation of philosophical, social, and legal knowledge. • Apply ethical knowledge in clinical care.	Communicator Medical expert Professional
g. Data Interpretation	• Describe the different investigational tools used in urology. • Enhance proper interpretation of different investigational data. • Enhance proper utilization of investigational tools. • Recognize limitations of the different investigation tools.	Medical expert Scholar

h. Research and Evidence-Based Practice	• Develop sound knowledge in research design, including ethics, study design, abstract writing skills, and presentation skills. • Gain competence in literature review, data synthesis, data analysis, and interpretation. • Develop a viable research proposal with the help of a faculty mentor. • Conduct research on a topic broadly related to urology. • Disseminate research findings through oral presentations, poster presentations, abstract preparation, or article publication.	Scholar Professional Manager
3. Work-Based Learning		
a. Daily-Rounds-Based Learning	• Present a focused history and physical examination finding to the rounding team. • Document historical and physical examination findings according to accepted formats including a complete written database, problem list, and a focused S.O.A.P. note. • Develop a patient management plan in consultation with others.	Medical Expert Communicator Health Advocate Professional
b. On-Call Duty-Based Learning (OBL)	• Elicit a comprehensive history and perform a complete physical examination on admission, clearly record the patient's assessment and differential diagnosis of medical problems, and initiate the management plan. • Discuss the management plan, including investigations and treatment, with senior residents. • Communicate plans to the nurse assigned to patient care. • Perform basic procedures necessary for diagnosis and management. **As a senior resident** • Supervise junior residents' admission notes and orders, discuss proposed plans of management, and supervise implementation. • Supervise junior residents' skills in history-taking and physical examination. • Help junior residents interpret laboratory investigations and perform bedside diagnostic and therapeutic procedures. • Attend consultations within and outside the department, including emergency consultations, and participate in outpatient clinics once or twice weekly.	Medical Expert Scholar Health Advocate Professional
c. Clinic-Based Learning (CBL)	• Elicit a focused history and physical examination under the supervision of the consultant/senior resident. • Briefly present the clinical findings to the attending consultant/senior resident. • Discuss the differential diagnosis and management plan with the attending consultant/senior resident. • Record the patient's assessment and differential diagnosis, and the management plan. • Develop communication skills by observing the attending consultant/senior resident. **As a senior resident** • Supervise junior residents' notes and orders, and manage the attending junior resident. • Write a concise note during on-call. • Discuss management plans with the consultant, including investigations, treatment, and referral to other disciplines. • Discuss the need for specialized procedures with the consultant. • Elicit clinical signs for the junior resident. • Interpret and discuss laboratory results with junior residents. • Assess the performance of junior residents in terms of focused history-taking, focused physical examination, and communication skills.	Medical Expert Communicator Health Advocate

4. Self-Directed Learning (SDL)		
	• Achieve personal learning goals beyond the essential, core curriculum. • Maintain a personal portfolio (self-assessment, reflective learning, and personal development plan). • Conduct and critic research project • Develop a habit of reading journals.	Professional Medical Expert Scholar

4. Core education program (CEP) includes the following <u>three</u> formal teaching and learning activities

4.1. **Universal topics (20–30%)**

4.1.1. Priority will be given to topics that

4.1.1.1. Are of high value

4.1.1.2. Are interdisciplinary and integrated

4.1.1.3. Require expertise potentially beyond what is available at local clinical training sites

4.1.2. Universal topics are being developed centrally by the Saudi Commission and will be available as e-learning modules

4.1.3. Each universal topic will have a self-assessment at the end of the module

4.1.4. Outline of universal topics:

Intent:

These are high value, interdisciplinary topics of upmost importance to the trainee. Topics are centrally delivered to ensure that every trainee receives high quality teaching and develops essential core knowledge. These topics are common to all specialties.

Topics included here meet one or more of the following criteria:

- Impactful: Topics that are common or life-threatening
- Interdisciplinary: Topics that are difficult to teach in a single discipline
- Orphan: Topics that are poorly represented in the undergraduate curriculum
- Practical: Topics that trainees will encounter in hospital practice

Development and Delivery:

Core topics for postgraduate curriculum will be developed and delivered centrally by the Commission through an e-learning platform. A set of preliminary learning outcomes for each topic has been developed. Content experts, in collaboration with the central team, may modify the learning outcomes. These topics will be didactic in nature with a focus on practical aspects of care. These topics will be content-heavy in comparison to workshops and other face-to-face interactive sessions that are planned.

The suggested duration of each topic is 1.30 hours.

Assessment: The topics will be delivered in a modular fashion. At the end of each learning unit, there will be an on-line formative assessment. After completion of all topics, there will be a combined summative context-rich multiple-choice question (MCQ) assessment. All trainees must attain minimum competency on the summative assessment. These topics can be assessed in a summative manner along with specialty examinations.

Module 1: **Introduction**

1. Safe drug prescribing
2. Hospital acquired infections
3. Sepsis; systemic inflammatory response syndrome (SIRS); disseminated intravascular coagulation (DIVC)
4. Antibiotic stewardship
5. Blood transfusion

Safe drug prescribing: At the end of the learning unit, residents should be able to

a) Recognize the importance of safe drug prescribing in healthcare
b) Describe various adverse drug reactions with examples of commonly prescribed drugs that can cause such reactions
c) Apply principles of drug-drug interactions, drug-disease interactions, and drug-food interactions in common situations
d) Apply principles of prescribing drugs in special situations such as renal failure and liver failure
e) Apply principles of prescribing drugs in the elderly, pediatric patients, and pregnant and lactating patients
f) Promote evidence-based cost-effective prescribing
g) Discuss the ethical and legal framework governing safe drug prescribing in Saudi Arabia

Hospital Acquired Infections (HAI): At the end of the learning unit, residents should be able to

a) Discuss the epidemiology of HAI with special reference to HAI in Saudi Arabia
b) Recognize HAI as one of the major emerging threats in healthcare
c) Identify the common sources of HAI
d) Describe the risk factors of common HAIs, such as ventilator-associated pneumonia, methicillin-resistant staphylococcus aureus (MRSA), central line-associated bloodstream infection (CLABSI), and vancomycin-resistant enterococcus (VRE)
e) Identify the role of healthcare workers in the prevention of HAI

f) Determine appropriate pharmacological (e.g., selected antibiotic) and non-pharmacological (e.g., removal of indwelling catheter) measures in the treatment of HAI

g) Propose a plan to prevent HAI in the workplace

Sepsis, SIRS, DIVC: At the end of the learning unit, residents should be able to

a) Explain the pathogenesis of sepsis, SIRS, and DIVC

b) Identify patient-related and non-patient-related predisposing factors of sepsis, SIRS, and DIVC

c) Recognize a patient at risk of developing sepsis, SIRS, and DIVC

d) Describe the complications of sepsis, SIRS, and DIVC

e) Apply the principles of management of patients with sepsis, SIRS, and DIVC

f) Describe the prognosis of sepsis, SIRS, and DIVC

Antibiotic Stewardship: At the end of the learning unit, residents should be able to

a) Recognize antibiotic resistance as one of the most pressing global public health threats

b) Describe the mechanism of antibiotic resistance

c) Determine appropriate and inappropriate use of antibiotics

d) Develop a plan for safe and proper antibiotic usage with respect to indications, duration, types of antibiotics, and discontinuation.

e) Evaluate local guidelines in the prevention of antibiotic resistance

Blood Transfusion: At the end of the learning unit, residents should be able to

a) Review the different components of blood products available for transfusion

b) Recognize the indications and contraindications of blood product transfusions

c) Discuss the benefits, risks, and alternatives to transfusions

d) Undertake consent for specific blood product transfusions

e) Perform steps necessary for safe transfusions

f) Develop an understanding of special precautions and procedures necessary during massive transfusions

g) Recognize transfusion-associated reactions and provide immediate management

Module 2: Cancer

1. Principles of cancer management
2. Side effects of chemotherapy and radiation therapy
3. Oncologic emergencies
4. Cancer prevention
5. Monitoring and follow-up of cancer patients

Principles of Cancer Management: At the end of the learning unit, residents should be able to

a) Discuss the basic principles of staging and grading of cancers
b) Enumerate the basic principles (e.g., indications, mechanism, types) of
    a. Cancer surgery
    b. Chemotherapy
    c. Radiotherapy
    d. Immunotherapy
    e. Hormone therapy

Side Effects of Chemotherapy and Radiation Therapy: At the end of the learning unit, residents should be able to

a) Describe important side effects (e.g., frequent, or life- or organ-threatening) of common chemotherapy drugs
b) Explain the principles of monitoring side effects in a patient undergoing chemotherapy
c) Describe measures (pharmacological and non-pharmacological) available to ameliorate side effects of commonly prescribed chemotherapy drugs
d) Describe important (e.g., common and life-threatening) side effects of radiation therapy
e) Describe measures (pharmacological and non-pharmacological) available to ameliorate side effects of radiotherapy

Oncologic Emergencies: At the end of the learning unit, residents should be able to

a) Enumerate important oncologic emergencies encountered both in hospital and ambulatory settings
b) Discuss the pathogenesis of important oncologic emergencies
c) Recognize oncologic emergencies
d) Institute immediate measures when treating a patient with oncologic emergencies
e) Counsel patients in an anticipatory manner to recognize and prevent oncologic emergencies

Cancer Prevention: At the end of learning unit, residents should be able to

a) Conclude that many major cancers are preventable
b) Identify smoking prevention and lifestyle modifications as major prevention measures
c) Recognize cancers that are preventable
d) Discuss major cancer prevention strategies at the individual as well as national level
e) Counsel patients and families in a proactive manner regarding cancer prevention, including screening

Monitoring and Follow-Up of Cancer Patients: At the end of the learning unit, residents should be able to

a) Describe the principles of monitoring and follow-up of patients with cancer
b) Enumerate the monitoring and follow-up plan for common forms of cancer
c) Describe the role of primary care physicians, family physicians, and similar others in the monitoring and follow-up of cancer patients
d) Liaise with oncologists to provide monitoring and follow-up for patients with cancer

Module 3: Medical and Surgical Emergencies

1. Management of acute chest pain
2. Management of acute breathlessness
3. Management of altered sensorium
4. Management of hypotension and hypertension

At the end of the learning unit, residents should be able to

a) Triage and categorize patients
b) Identify patients who need prompt medical and surgical attention
c) Generate preliminary diagnoses based on history and physical examination
d) Order and interpret urgent investigations
e) Provide appropriate immediate management to patients
f) Refer patients to the next level of care, if needed

Module 4: Acute Care

1. Pre-operative assessment
2. Post-operative care
3. Acute pain management
4. Chronic pain management
5. Management of fluid in the hospitalized patient
6. Management of electrolyte imbalances

Pre-Operative Assessment: At the end of the learning unit, residents should be able to

a) Describe the basic principles of pre-operative assessment

b) Perform pre-operative assessments in uncomplicated patients with special emphasis on
    i. General health assessment
    ii. Cardiorespiratory assessment
    iii. Medications and medical device assessment
    iv. Drug allergy
    v. Pain relief needs
c) Categorize patients according to risks

Post-Operative Care: At the end of the learning unit, residents should be able to

a) Devise a post-operative care plan including monitoring of vitals, pain management, fluid management, medications, and laboratory investigations
b) Properly refer patients to appropriate facilities
c) Describe the process of post-operative recovery in a patient
d) Identify common post-operative complications
e) Monitor patients for possible post-operative complications
f) Institute immediate management for post-operative complications

Acute Pain Management: At the end of the learning unit, residents should be able to

a) Review the physiological basis of pain perception
b) Proactively identify patients who might be in acute pain
c) Assess a patient with acute pain
d) Apply various pharmacological and non-pharmacological modalities available for acute pain management
e) Provide adequate pain relief for uncomplicated patients with acute pain
f) Identify and refer patients with acute pain who can benefit from specialized pain services

Chronic Pain Management: At the end of the learning unit, residents should be able to

a) Review bio-psychosocial and physiological bases of chronic pain perception
b) Discuss various pharmacological and non-pharmacological options available for chronic pain management
c) Provide adequate pain relief for uncomplicated patients with chronic pain
d) Identify and refer patients with chronic pain who can benefit from specialized pain services

Management of Fluid in Hospitalized Patients: At the end of the learning unit, residents should be able to

a) Review the physiological basis of water balance in the body

b) Assess a patient for his/her hydration status
c) Recognize a patient with over- and under-hydration
d) Order fluid therapy (oral as well as intravenous) for a hospitalized patient
e) Monitor fluid status and response to therapy through history, physical examination, and selected laboratory investigations

Management of Acid-Base Electrolyte Imbalances: At the end of the learning unit, residents should be able to

a) Review the physiological basis of electrolyte and acid-base balances in the body
b) Identify diseases and conditions that are likely to cause, or be associated with, acid/base and electrolyte imbalances
c) Correct electrolyte and acid-base imbalances
d) Perform careful calculations, checks, and other safety measures while correcting acid-base and electrolyte imbalances
e) Monitor response to therapy through history, physical examination and selected laboratory investigations

Module 5: Ethics and Healthcare

1. Occupational hazards of healthcare workers (HCW)
2. Evidence-based approaches to smoking cessation
3. Patient advocacy
4. Ethical issues: transplantation/organ harvesting; withdrawal of care
5. Ethical issues: treatment refusal; patient autonomy
6. Role of doctors in death and dying

Occupational Hazards of Healthcare Workers (HCW): At the end of the learning unit, residents should be able to

a) Recognize common sources and risk factors of occupational hazards among HCW
b) Describe common occupational hazards in the workplace
c) Develop familiarity with legal and regulatory frameworks governing occupational hazards among HCW
d) Develop a proactive attitude to promote workplace safety
e) Protect oneself and colleagues against potential occupational hazards in the workplace

Evidence-Based Approach to Smoking Cessation: At the end of the learning unit, residents should be able to

a) Describe the epidemiology of smoking and tobacco usage in Saudi Arabia

b) Review the effects of smoking on the smoker and family members
c) Effectively use pharmacologic and non-pharmacologic measures to treat tobacco usage and dependence
d) Effectively use pharmacologic and non-pharmacologic measures to treat tobacco usage and dependence among special population groups, such as pregnant women, adolescents, and patients with psychiatric disorders

Patient Advocacy: At the end of the learning unit, residents should be able to

a) Define patient advocacy
b) Recognize patient advocacy as a core value governing medical practice
c) Describe the role of patient advocates in the care of patients
d) Develop a positive attitude towards patient advocacy
e) Be a patient advocate in conflicting situations
f) Be familiar with local and national patient advocacy groups

Ethical issues: transplantation/organ harvesting; withdrawal of care: At the end of the learning unit, residents should be able to

a) Apply key ethical and religious principles governing organ transplantation and withdrawal of care
b) Be familiar with the legal and regulatory guidelines regarding organ transplantation and withdrawal of care
c) Counsel patients and families in the light of applicable ethical and religious principles
d) Guide patients and families to make informed decisions

Ethical issues: treatment refusal; patient autonomy: At the end of the learning unit, residents should be able to

a) Predict situations in which a patient or family is likely to decline prescribed treatment
b) Describe the concept of “rational adult” in the context of patient autonomy and treatment refusal
c) Analyze key ethical, moral, and regulatory dilemmas in treatment refusal
d) Recognize the importance of patient autonomy in the decision-making process
e) Counsel patients and families declining medical treatment in the light of best interest of patients

Role of Doctors in Death and Dying: At the end of the learning unit, residents should be able to

a) Recognize the important role a doctor can play during the dying process
b) Provide emotional as well as physical care to a dying patient and family
c) Provide appropriate pain management in a dying patient

d) Identify suitable patients and refer to palliative care services

4.2. **Core specialty topics (40–50%)**

4.2.1. Format of presentation: interactive lectures, case discussion, and quizzes

4.2.2. Duration: 2 hours

4.2.3. Core specialty topics: Case discussions; interactive lectures, videos, workshops

Topic	Learning objectives
1. Back/flank pain	• Identify the standard investigation • List all differential diagnoses • Describe the standard management for pain
2. Enlarged kidney	• List differential diagnoses • Learn standard methods of investigation and management
3. Hematuria in emergency	• List causes • Describe acute management
4. Urine analysis and microscopy	• Describe the basis of the test • Interpret U/A
5. Renal cystic diseases	• Describe pathophysiology of the various types of renal cystic disease • Describe the standard investigation and principles of management
6. Antenatal hydronephrosis	• Describe the epidemiology • Define the grading system • Describe the standards of management
7. Urinary tract infections	• Describe the different classification systems • Describe the standards of management
8. Renal failure	• Describe the pathophysiology • Manage urological causes of renal failure in emergency settings • Describe the perioperative management of patients with renal insufficiency
9. Rising prostate-specific antigen (PSA)	• Describe different clinical scenarios causing rising PSA • Describe the management of each of these scenarios
10. Screening in urology	• Describe the indications and screening tools for benign and malignant urological conditions in pediatric patients and adults
11. Urinary retention	• Recognize the different causes of acute urinary retention (AUR) and the principles of management • Describe how to deal with difficult catheterization
12. Urodynamic	• Describe the mechanics • List the clinical utilization • Interpret urodynamic studies
13. Men's sexual dysfunction	• Describe the pathophysiology and management of erectile dysfunction, ejaculatory dysfunction, and androgen deficiency • Understand the epidemiology and psycho-social impact of these conditions
14. Infertile couple	• Understand the definition and pathophysiology of infertility in male patients • Describe the principles of management and counseling of both partners
15. Lower urinary tract symptoms (LUTS)	• Describe the primary assessment of patients with (LUTS) • Recognize serious causes • Differentiate between urological and non-urological causes
16. Wetting	• Differentiate between incontinence and enuresis • Classify the causes • Describe the approach to evaluation and management
17. Acute scrotum	• Describe the causes • Understand the principles of management
18. Empty Scrotum	• Describe the immediate management, investigation, and surgical intervention
19. Ambiguous genitalia	• Describe the immediate evaluation • Describe the surgical approach
20. Sexually transmitted diseases (STDs)	• List the different causes • Describe the cutaneous manifestations • Describe the principles of managing the patient and the partner

21. Patient with multiple trauma	• Describe the principles of managing genito-urinary trauma in this setting
22. Guidewires and catheters	• Describe the various types of guidewires and catheters used in urology and their utilization
23. Minimally invasive surgery (MIS)	• Understand the evolution of endoscopy, laparoscopy, and robotic surgery • Describe their indication, application, and limitations
24. Imaging in urology	• List the diagnostic and therapeutic imaging tools used in urology • Describe the physics of imaging • Recognize appropriate utilization
25. Intravesicle Bacillus Calmette-Guerin (BCG)	• List all Indications, contraindications, and complications of BCG, and how to manage them
26. Post-obstructive diuresis	• Understand the pathophysiology • Identify patients at risk • Manage a patient presenting with post-obstructive diuresis
27. Scrotal mass	• Describe the different pathologies • Describe the possible evaluation methods • Describe the indicated management

4.2.4. **Professional development topics**

4.2.4.1. The art of presentation

4.2.4.2. Principles of research

4.2.4.3. Seeing beyond health experts

4.2.4.4. Health advocacy

3.2.4.5. Portfolio in training

4.2.5. **Communication and Counselling**

COMMUNICATION SITUATIONS
4.2.5.1. Disclosing medical errors
4.2.5.2. Documentation
4.2.5.3. Breaking bad news
4.2.5.4. Expressing empathy
4.2.5.5. Dealing with patient emotions (anger, fear, sadness)
4.2.5.6. Cultural diversity
4.2.5.7. End-of-life discussion
4.2.5.8. Informed consent
4.2.5.9. Special needs patients (learning disability, low literacy)
4.2.5.10. Disclosing adverse events
4.2.5.11. Establishing boundaries
4.2.5.12. Explaining diagnosis, investigation, and treatment
4.2.5.13. Involving the patient in decision-making
4.2.5.14. Communicating with relatives and dealing with difficult patients/family
4.2.5.15. Communicating with other healthcare professionals
4.2.5.16. Seeking informed consent/clarification for an invasive procedure or obtaining consent for a post-mortem
4.2.5.17. Giving instructions on discharge
4.2.5.18. Giving advice on lifestyle, health promotion, or risk factors

4.2.6. **Practical skills training (simulation and workshops)**

(The implementation of such projects will be based on logistic feasibility and equal opportunity for all residents and training centers across the Kingdom)

For R1, R2

Simulation Projects	Description
4.2.6.1. Knot tying	• Hands-on training, wet lab • Full day course
4.2.6.2. Intestinal anastomosis	• Hands-on training • Full day course
4.2.6.3. Advanced trauma life support (ATLS)	• Attend ATLS course • Two-day course
4.2.6.4. Cystoscopy	• Hands-on training on high-fidelity simulation • Half-day course
4.2.6.5. Ureteroscopy	• Hands-on training on high-fidelity simulation • Half-day course
4.2.6.6. TRUS guided biopsy	• Hands-on training on high-fidelity simulation • Half-day course

For R3, R4, R5

Simulation Projects	Description
4.2.6.7. Fundamentals of laparoscopic surgery for urology	• Attend FLS course • Two-day course
4.2.6.8. Transurethral resection of the prostate – Transurethral resection of bladder tumor (TURP-TURBT)	• Hands-on training on high-fidelity simulation • One-day course
4.2.6.9. Ureteroscopic management of stone	• Hands-on training on high-fidelity simulation • One-day course

4.3. **Trainee selected Topics (20–30%)**

4.3.1. Trainees from each specialty will be given a choice to develop a list of topics on their own

4.3.2. They can choose any topics relevant to their needs

4.3.3. All topics must be planned and cannot be random

4.3.4. All topics need to be approved by the local education committee

4.3.5. Delivery will be local

4.3.6. Institutions may also work with trainees to determine topics

ASSESSMENT

Assessment

Residents' evaluation and assessment throughout the program is carried out in accordance with the Commission's training and examination rules and regulations. This includes the following:

A. Annual promotion assessment:

This assessment is conducted towards the end of each training year throughout the program, and includes the following:

1- End of year in-training evaluation report:

This is a summative evaluation report prepared for each resident at the end of each year based on the **end of rotation reports**, which might also involve clinical, oral exams, and completing other academic or clinical assignment(s). These academic or clinical assignments should be documented by electronic tracking system (when applicable) on an annual basis. Evaluations will be based on accomplishment of the minimum requirements of the procedures and clinical skills as determined by the program.

1.1 End of rotation evaluation:

To fulfil the CanMEDS competencies based on the end of rotation evaluation, the resident's performance will be evaluated jointly by relevant staff for the following competencies:

1. Performance of the trainee during daily work.
2. Performance and participation in academic activities.
3. Performance in a 10–20 minute direct observation assessment of trainee-patient interactions. Trainers are encouraged to perform at least one assessment per clinical rotation, preferably near the end of the rotation. Trainers should provide timely and specific feedback to the trainee after each assessment of a trainee-patient encounter.
4. Performance of diagnostic and therapeutic procedural skills by the trainee. Timely and specific feedback for the trainee after each procedure is mandatory.
5. The CanMEDS-based competencies end of rotation evaluation form must be completed within two weeks following the end of each rotation (preferably in an electronic format) and signed by at least two consultants. The program director will discuss the evaluation with the resident, as necessary. The evaluation form will be submitted to the Regional Training Supervisory Committee of the SCFHS within four weeks following the end of the rotation.

2. End of year examination:

End of year examination will be limited to R1, R2, R3 and R4. The number of exam items, eligibility, and passing score will be in accordance with the Commission's training and examination rules and regulations. The promotion exam during R1 is conducted by general surgery. Passing of the POU exam during (R2) will replace the promotion exam for that particular training year.

B. Final in-training evaluation report (FITER)/Comprehensive competency report (CCR)

In addition to the approval of completion of clinical requirements (resident's logbook) by the local supervising committee, FITER is also prepared by program directors for each resident at the end of his/her final year in residency (R5), which might also involve clinical, oral exams, and completing other academic assignment(s).

C. Principles of Urology examination (Saudi Board Examination: Part One)

This exam is conducted in the form of a written examination with an MCQ format and held at least once a year. The number of exam items, eligibility, and passing score will be in accordance with the Commission's training and examination rules and regulations.

D. Final urology board examination (Saudi Board Examination: Part Two)

The final Saudi Board Examination comprises two parts:

1. Written examination

This examination assesses the theoretical knowledge base (including recent advances) and problem-solving capabilities of candidates in the specialty of urology. It is delivered in an MCQ format and held at least once a year. The number of exam items, eligibility, and passing score will be in accordance with the Commission's training and examination rules and regulations.

2. Clinical examination

This examination assesses a broad range of high-level clinical skills, including data gathering, patient management, and communication and counseling skills. The examination is held at least once a year, preferably in an Objective Structured Clinical Examination (OSCE) format. The exam eligibility and passing score will be in accordance with the Commission's training and examination rules and regulations.

E. Certification:

Certificate of training completion will only be issued upon the resident's successful completion of all program requirements. Candidates passing all components of the final specialty examination are awarded the "Saudi Board in Urology" certificate.

Urology comprehensive in-training evaluation report (ITER)

Resident Name: **SCFHS#** **Training Center:**
Level of training: **Rotation Dates:**

Competencies	Meeting Expectations *				
	Rarely	Inconsistently	Generally	Exceeds	N/A
Medical Expert					
1. Appropriate basic and clinical knowledge					
2. Accurate history and physical exam					
3. Appropriate clinical decisions					
4. Appropriate emergency management					
5. Appropriate indication for surgical procedures					
Procedures and clinical skills					
6. Performance during endoscopic procedures					
7. Performance during open surgical procedures					
8. Performance during laparoscopic procedures					
9. Achieving the minimum number required					
Communicator					
10. Appropriate interaction with urology patients					
11. Accurate documentation					
12. Appropriate planning					
13. Clear presentation					
Collaborator					
14. Proper Interaction with health professionals					
15. Proper consultations					
16. Proper management of conflicts					
Manager					
17. Proper use of information technology					
18. Proper understanding of resources					
19. Appropriate time management					
20. Follow policies and procedures					
21. Maximize benefits to patients					
Health advocate					
22. Appropriate responses in advocacy situations					
Scholar					
23. Understand the continuous need for education					
24. Implement an ongoing plan for self-education					
25. Analyze and integrate medical information					
26. Teach others					
27. Completion of the electronic Log-book					
Professional					
28. Proper professional attitude					
29. Understands medical and legal obligations					
30. Punctual					
31. Maintain ethics and morals					
32. Accepts advices					
33. Participates in professional organizations					
Total					

Please comment on the strengths and weaknesses of the candidate. Make direct reference to the objectives and give specific examples wherever possible.

Score					
Evaluation methods	Mini-CEX[1]	DOPS[2]	OSCE[3]	MCQ[4]	Other:
Residency training committee	1. Date		4. Date		
	2 Date		5. Date		
	3. Date		6. Date		
Program director Name:	Date		Signature		
Resident Name:	Date		Signature		

*** Rarely ≤30%, Inconsistently >30–60%, Generally >60–90%, Exceeds >90%**

[1] **Mini-CEX**= Mini clinical evaluation exercise
[2] **DOPS**= Direct observation of procedural skill
[3] **OSCE**= Objective structured clinical examination
[4] **MCQ**= Multiple choice questions

Final in-training evaluation report (FITER)/ Comprehensive competency report (CCR)

Name and identification number:
Evaluation covering the last year as a resident:
Address:

In the view of the Residency Program Committee, this resident has acquired the competencies of the specialty/subspecialty as prescribed in the Objectives of Training and is competent to practice as a specialist.

	YES	NO
• Written exams		
• Oral exams		
• Clinical observations (e.g., ITERs) from faculty		
• OSCEs		
• Feedback from healthcare professionals		
• Other evaluations:		
• Completion of a scholarly project		

COMMENTS
Date Name of program director/assessor for CCR
Signature

Date Name of postgraduate dean/assessor for CCR
Signature

Date Name of resident Signature

This is to attest that I have read this document.

Identification number:

RESIDENT'S COMMENTS:

Note: If, during the period from the date of signature of this document to the completion of training, the Residency Program Committee judges that the candidate's demonstration of competence is inconsistent with the present evaluation, it may declare the document null and void and replace it with an updated FITER. Eligibility for the examination would be dependent on the updated FITER.

FITER: (Medical Expert Competency)
Identification number: _____

A rationale must be provided to support ratings with asterisks.	**EXPECTATIONS**				
	*** Rarely meets**	*** Inconsistently meets**	**Generally meets**	**Sometimes exceeds**	*** Consistently exceeds**
Medical Expert					
a. Possesses basic scientific and clinical knowledge relevant to urology					
b. Performs histories and physical examinations that are complete, accurate, and well-organized					
c. Uses all pertinent information to arrive at complete and accurate clinical decisions					
d. Recognizes and manages emergency conditions resulting in prompt and appropriate treatment. Remains calm, acts in a timely manner, and prioritizes correctly					
e. Recognizes and appropriately manages patients with complex urologic problems and multi-system disease					
f. Demonstrates proficiency in pre-operative and post-operative patient management, including indications for surgical intervention					
Please comment on the strengths and weaknesses of the candidate and provide a rationale for your ratings. Make direct reference to the objectives and give specific examples wherever possible.					

*** Rarely meets ≤30%, Inconsistently meets >30–60%, Generally meets >60–80%, Sometimes exceeds >80–90%, Consistently exceeds >90%**

FITER: (Procedures and clinical skills Competencies)
Identification number:

A rationale must be provided to support ratings with asterisks.	**EXPECTATIONS**				
	*** Rarely meets**	*** Inconsistently meets**	**Generally meets**	**Sometimes exceeds**	*** Consistently exceeds**
PROCEDURES AND CLINICAL SKILLS					
a. Demonstrates the ability to perform diagnostic and therapeutic procedures described in the Medical Expert Section 6.1 of the Objectives of Training in Urology					
1. **Endoscopic Procedures (From list A)**					
• Cystoscopy, Cystoscopic procedures					
• Prostatic procedures including TURP					
• Ureteral procedures including ureteroscopy and lithotripsy • Manipulation and extraction of stones					
• Percutaneous renal surgery					
2. **Open Surgical Procedures (From list A)**					
• Male external genitalia					
• Testis					
• Bladder					
• Prostate					
• Ureter					
• Kidney					
3. **Laparoscopic Procedures (From list A)**					
• Undescended testicle					
b. Minimizes risks and discomforts to the patient					
c. Overall is proficient in procedures and clinical skills					
Please comment on the strengths and weaknesses of the candidate and provide a rationale for your ratings. Make direct reference to the objectives and give specific examples wherever possible.					

*** Rarely meets ≤30%, Inconsistently meets >30–60%, Generally meets >60–80%, Sometimes exceeds >80–90%, Consistently exceeds >90%**

FITER: (Communicator Competency)
Identification number:

A rationale must be provided to support ratings with asterisks.	**EXPECTATIONS**				
	*** Rarely meets**	*** Inconsistently meets**	**Generally meets**	**Sometimes exceeds**	*** Consistently exceeds**
COMMUNICATOR					
a. Establishes a therapeutic relationship with urological patients and communicates well with the family. Provides clear and thorough explanations of diagnosis, investigation, and management in a professional manner. Demonstrates empathy and sensitivity to racial, gender, and cultural issues					
b. Prepares documentation that is accurate and timely					
c. Develops diagnostic and therapeutic plans that are understandable to patients and clear and concise for other healthcare personnel, including other consultants					
d. Presents clinical summaries and scientific information in a clear and concise manner to a healthcare audience					
Please comment on the strengths and weaknesses of the candidate and provide a rationale for your ratings. Make direct reference to the objectives and give specific examples wherever possible.					

*** Rarely meets ≤ 30%, Inconsistently meets >30–60%, Generally meets >60–80%, Sometimes exceeds >80–90%, Consistently exceeds >90%**

FITER: (Collaborator Competency)
Identification number:

A rationale must be provided to support ratings with asterisks.	**EXPECTATIONS**				
	*** Rarely meets**	*** Inconsistently meets**	**Generally meets**	**Sometimes exceeds**	*** Consistently exceeds**
COLLABORATOR					
a. Interacts effectively with health professionals by recognizing and acknowledging their roles and expertise					
b. Consults and delegates effectively					
c. Establishes good relationships with peers and other health professionals					
d. Effectively provides and receives information from other health professionals					
e. Manages conflict situations well					
Please comment on the strengths and weaknesses of the candidate and provide a rationale for your ratings. Make direct reference to the objectives and give specific examples wherever possible.					

*** Rarely meets ≤ 30%, Inconsistently meets >30–60%, Generally meets >60–80%, Sometimes exceeds >80–90%, Consistently exceeds >90%**

FITER: (Manager Competency)
Identification number:

A rationale must be provided to support ratings with asterisks.	**EXPECTATIONS**				
	*** Rarely meets**	*** Inconsistently meets**	**Generally meets**	**Sometimes exceeds**	*** Consistently exceeds**
MANAGER					
a. Understands and makes effective use of information technology, such as methods for searching medical databases					
b. Makes cost-effective use of healthcare resources based on sound judgment					
c. Prioritizes and uses personal and professional time effectively in order to achieve a balanced personal and professional life					
d. Demonstrates an understanding of the principles of practice management					
e. Demonstrates the ability to effectively utilize healthcare resources to maximize benefits to all patients, including managing waiting lists					
Please comment on the strengths and weaknesses of the candidate and provide a rationale for your ratings. Make direct reference to the objectives and give specific examples wherever possible.					

*** Rarely ≤ 30%, Inconsistently >30–60%, Generally meets >60–80%, Sometime exceeds >80–90%, Consistently exceeds >90%**

FITER: (Health advocate Competency)
Identification number:

A rationale must be provided to support ratings with asterisks.	**EXPECTATIONS**				
	*** Rarely meets**	*** Inconsistently meets**	**Generally meets**	**Sometimes exceeds**	*** Consistently exceeds**
HEALTH ADVOCATE					
a. Understands the specialist's role to intervene on behalf of patients with respect to the social, economic, and biological factors that may impact their health					
b. Understands the specialist's role to intervene on behalf of the community with respect to the social, economic, and biological factors that may impact on community health					
c. Recognizes and responds appropriately in advocacy situations					
Please comment on the strengths and weaknesses of the candidate and provide a rationale for your ratings. Make direct reference to the objectives and give specific examples wherever possible.					

*** Rarely meets ≤30%, Inconsistently meets >30–60%, Generally meets >60–80%, Sometimes exceeds >80–90%, Consistently exceeds >90%**

FITER: (Scholar Competency)
Identification number:

A rationale must be provided to support ratings with asterisks.	**EXPECTATIONS**				
	*** Rarely meets**	*** Inconsistently meets**	**Generally meets**	**Sometimes exceeds**	*** Consistently exceeds**
SCHOLAR					
a. Demonstrates an understanding of, and a commitment to, the need for continuous learning. Develops and implements an ongoing and effective personal learning strategy					
b. Critically appraises medical information by asking relevant questions and determining which information is reliable. Successfully integrates information from a variety of sources.					
c. Understands the principles of adult learning and helps others learn by providing guidance, teaching, and giving constructive feedback					
d. Facilitates the learning of patients, other house staff/students, and other health professionals					
e. Completes the electronic log book in a timely fashion					
Please comment on the strengths and weaknesses of the candidate and provide a rationale for your ratings. Make direct reference to the specific objectives and give specific examples wherever possible.					

*** Rarely meets ≤30%, Inconsistently meets >30–60%, Generally meets >60–80%, Sometimes exceeds >80–90%, Consistently exceeds >90%**

FITER: (Professional Competency)
Identification number:

A rationale must be provided to support ratings with asterisks.	**EXPECTATIONS**				
	*** Rarely meets**	*** Inconsistently meets**	**Generally meets**	**Sometimes exceeds**	*** Consistently exceeds**
PROFESSIONAL					
a. Demonstrates integrity, honesty, compassion, and respect for diversity					
b. Fulfils medical, legal, and professional obligations of the specialist					
c. Meets deadlines and demonstrates punctuality					
d. Monitors patients and provides follow-up					
e. Understands the principles of ethics and applies these in clinical situations					
f. Demonstrates an awareness of limitations, and seeks advice when necessary. Accepts advice graciously					
g. Demonstrates respect towards other physicians and healthcare workers					
h. Participates in professional organizations—local, provincial, and national					
Please comment on the strengths and weaknesses of the candidate and provide a rationale for your ratings. Make direct reference to the objectives and give specific examples wherever possible.					

*** Rarely meets ≤30%, Inconsistently meets >30–60%, Generally meets >60–80%, Sometimes exceeds >80–90%, Consistently exceeds >90%**

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Saudi Commission For Health Specialties
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