The data below shows the relative percentage of questions from each of the content categories. The Qualifying Exam (QE) consists of 300 multiple-choice questions, of which two hundred are statistically valid, previously tested questions used to grade candidates on the examination. An additional one hundred questions are new field-test questions that are being evaluated for statistical validity for use on future examinations and will not count toward the final grade. The number of field-test questions may vary in subject matter, giving the appearance that there is a larger percentage of questions on some content areas.

This QE blueprint is provided as a study guide, and exact percentages on the topic may vary slightly from year to year.

**Exam Content for Qualifying and In-service Examinations**

**Core Urologic Knowledge**

<table>
<thead>
<tr>
<th>Content Area</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Core Urologic Knowledge</td>
<td>20%</td>
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<tr>
<td>Office Based Urology</td>
<td>7%</td>
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<tr>
<td>Urinary Tract Infections: Cystitis, Prostatitis, Pyelonephritis,</td>
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<tr>
<td>Guidelines</td>
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<tr>
<td>Diagnosis (Dx)</td>
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<tr>
<td>1. UA, urine culture, Chem strips</td>
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<td>Treatment (Rx)</td>
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<tr>
<td>Recurrent vs relapsing UTI</td>
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<tr>
<td>1. Definition of recurrent and relapsing UTI</td>
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<tr>
<td>2. Dx, Significance and Rx of relapsing UTI</td>
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<tr>
<td>Antibiotic prophylaxis</td>
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<tr>
<td>1. When to use</td>
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<td>2. Medications to use</td>
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<td>3. Complications of antibiotic prophylaxis</td>
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<td>Funguria Dx &amp; Treatment</td>
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<tr>
<td>Upper Tract Urinary Infections</td>
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<tr>
<td>Pyelonephritis – Dx and management</td>
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<tr>
<td>Xanthogranulomatous pyelonephritis</td>
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<td>Kidney Abscess</td>
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<td>Kidney scarring – Dx &amp; complications</td>
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<tr>
<td>Inflammatory Bowel Disease relationship to UTI</td>
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<tr>
<td>Crohn’s Disease (Enteric-urinary tract fistulas and obstruction) – Urologic manifestations</td>
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<tr>
<td>Prostatitis vs Prostatosis</td>
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<tr>
<td>Dx and Treatment</td>
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<tr>
<td>Epididymitis</td>
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</tbody>
</table>
i. Dx, significance (relationship to voiding dysfunction, urethral stricture and sexually transmitted diseases)
   ii. Rx

h. Sexually transmitted disease
   i. Dx
   ii. Rx

i. Microscopic hematuria
   i. Guidelines
   ii. Dx
   iii. Rx

j. Proteinuria
   i. Guidelines
   ii. Dx
   iii. Rx

k. Lower Urinary Tract Symptoms (LUTS)
   i. Guidelines

l. When and how to use PSA screening

m. Antibiotic prophylaxis
   i. Guidelines

n. DVT Prophylaxis
   i. Guidelines

2. Postoperative Complications & Trauma (7%)
   a. Ureteroscopy complications
   b. ESWL complications
   c. TRUS prostate biopsy complications
   d. Traumatic Renal, bladder and urethral injuries;
      i. Dx
      ii. Staging or classification
      iii. Rx
   e. Vesicovaginal and ureterovaginal fistula
      i. Dx
      ii. Rx
   f. Penile fracture
      i. Dx
      1. concerns for concomitant urethral injury
      ii. Rx
   g. Nerve injuries following surgery
      i. Positional nerve injuries
      ii. Nerve injuries following retroperitoneal and pelvic surgery
         1. obturator, ilioinguinal, femoral, ejaculation dysfunction, bladder neck denervation, onset of neurogenic bladder (NGB)
   h. Metabolic urgencies and emergencies (Rx)
i. Hyponatremia
   1. Dilution secondary to fluid absorption (TUR syndrome)- Rx
   2. Consequence of DDAVP -Rx
ii. Myoglobinuria (positional)
iii. Postop Addisonian crisis
iv. Hyperkalemia
v. Hypercalcemia

3. Transplantation (0.5%)
a. This section only covers assessment of pts for donor nephrectomy and surgical complications of renal transplants.

4. Imaging, radiation & patient safety, medical ethics (5%)
a. Ultrasound techniques
b. Complications of Fluoroscopy, CT and MRI
   i. Ways to prevent or Rx the complications arising from radiographic studies
   ii. Methods to reduce radiation risks to the physician and patient
c. Nuclear renography and cystography
   i. Materials used and their purpose
d. Patient safety- outpatient concerns
   i. Sterilization of scopes etc.
   ii. Dx and treatment of autonomic dysreflexia
e. Opioid - Drug abuse
f. Medical Ethics
   i. End of life concerns
   ii. Billing irregularities
   iii. Suspected child abuse
   iv. Jehovah’s witness patient management

5. Evidence Based Medicine - Statistics (0.5%)
a. Basic statistical applications for interpretation of scientific articles

Basic Science- Must have a Clinical Correlation (5%)

1. Physiology, Immunology and Molecular Biology (1%)
a. Physiology of Testosterone Production
b. Bladder and Urinary Sphincteric Function
   i. Mechanism of Action of Medications, e.g. anticholinergics, alpha blocker, beta stimulants, Botox. etc.
   ii. Alterations found in pathologic disease e.g. Interstitial cystitis, spinal cord injuries, Cerebral Palsy, Parkinsonism, etc.
c. Physiology of Erection
   i. Mechanisms of Actions of Medications, e.g., Viagra, Injection therapy, etc.
d. Immunotherapy for GU malignancy
   i. Mechanisms of Action
2. **Anatomy** (2%)
   a. Surgical orientation to anatomic structures

3. **Renovascular Hypertension** (0.5%)
   a. Pathophysiology
   b. Pharmacological treatment
   c. Indications for surgical repair

4. **Nephrology** (0.5%)
   a. Recognition of glomerulonephritis e.g. significance of dysplastic RBC’s in urine, RBC casts, Dx of streptococcal glomerulonephritis, etc.
   b. Proteinuria
      i. Clinical assessment, when is it significant
   c. Myoglobinuria
      i. Etiology, Dx, Rx
   d. Pharmacologic impact on Renal function e.g. Cisplatin, prostaglandins, NSAID’s
   e. Post-obstructive Diuresis
      i. Pathophysiology, Dx and Rx

5. **Fluid and Electrolytes** (1%)
   a. Hypercalcemia Rx
   b. Hyperkalemia Rx
   c. Hyponatremia Rx
      i. TUR syndrome and Rx
      ii. DDAVP induced hyponatremia- symptoms and Rx
   d. Management of central and nephrogenic diabetes insipidus
   e. Electrolyte imbalance induced by transurethral resection, NG tube suction and Bowel preparation – Dx and Rx
   f. Management of postoperative fluids (Adults and Pediatrics)
   g. Complications associated with transfusions, Dx and Rx

**Upper and Lower Tract Urinary Obstruction** (10%)

1. **Upper Tract Obstruction** (2%)
   a. UPJ obstruction
      i. Dx and management
   b. Retroperitoneal Fibrosis
      i. Dx, management- surgical and medical
   c. Ureteral strictures and fistulas post endoscopy
      i. Dx and management
   d. Complications of long term indwelling ureteral stents

2. **BPH- urethral obstruction- LUTS (male and female)** (8%)
   a. BPH
i. Dx (indications for urodynamic studies)
   1. Interpretation of urodynamic studies
ii. Medical treatment BPH
iii. Surgical Treatment BPH
b. Urethral strictures-stenosis
   i. Pelvic Fracture Urethral Injuries
      1. Dx
      2. Treatment
   ii. Urethral stricture (Anterior)
      1. Dx
      2. Treatment
c. Lichen Sclerosis- Dx and treatment
d. Lower Urinary Tract Symptoms (LUTS) – male and female
   i. Dx (UDS when is it necessary?)
   ii. Behavioral management
   iii. Pharmacological management
   iv. Options for refractory UUI/OAB (OnabotulinumtoxinA, neuromodulation)
e. Postoperative urinary incontinence
   i. Evaluation
   ii. Treatment of postoperative urinary incontinence
   iii. Indications for Artificial Urinary Sphincter (AUS)
      1. Management of complications of AUS

Urolithiasis (10% + core)

1. Renal and Ureteral Calculi (9%)
   a. Dx- including metabolic evaluation
      i. Heredity (genetic) causes for nephrolithiasis
      ii. Urinary Crystal identification
   b. Rx
      i. All forms, SWL, PCN, ureteroscopy, etc.
      ii. Medical therapy for underlying metabolic abnormalities
         1. Complications of medical therapy
   c. Recommended follow-up following stone extraction
2. Complications of PCN, ESWL, Ureteroscopy (See Core Knowledge)
   a. Ureteral stricture post ureteroscopy, Dx and Rx
   b. Ureteral perforation: Dx and Rx
   c. PCN complications
      iv. Bleed
      v. Bowel perforation
      vi. Urinoma
   d. Urosepsis following endoscopic procedures
3. **Bladder stones**

   a. Etiology, Significance, Dx, Rx

Oncology

1. **Upper tract disease**

   a. Adrenal Pathology (Staging, Dx, Rx)
      i. Benign
      ii. Malignant – staging, Dx, Rx
      iii. Concepts on Chemotherapy
   
b. Renal Tumors
      i. Benign
      ii. Malignant - Staging, Dx, Rx
      iii. Concepts on Chemo-Immunotherapy
      iv. Ablative Rx of renal tumors
         1. Indications
         2. Follow-up
      v. Observation protocols for renal tumors
   
c. Upper Tract Urothelial disease
      i. Staging, Dx, Treatment

2. **Lower Tract disease**

   a. Bladder Tumors
      i. Benign
      ii. Malignant
         1. Staging, Dx, Rx
         2. Concepts on Chemotherapy
      iii. Intravesical therapy
   
b. Prostate Cancer
      i. PSA monitoring
      ii. Staging, Dx and Rx
         1. Observation protocols
         2. Androgen resistant prostate cancer
      iii. Concepts on Chemo-Immunotherapy
   
c. Penile Cancer
      i. Staging, Dx, Rx
      ii. When to pursue lymphadenectomy
      iii. Rudimentary concepts on Chemotherapy
   
d. Testicular Cancer
      i. Staging, Dx, management
      ii. Rudimentary Concepts on Chemotherapy
3. **Urinary diversions** (4%)
a. Patient selection
b. Postoperative complications (pouch or neobladder ruptures, fistulas and strictures)
   i. Dx and Management
c. Metabolic complications including electrolyte and vitamin deficiencies
d. Neobladder Management complications
   i. Incontinence
   ii. Urinary Retention- Dx, Rx
   iii. Stone formation-Dx, Rx

4. **Laparoscopic and Robotic Operative Complications** (See Core Knowledge)
a. Recognition of Injury or complication
   i. Diminished blood flow
   ii. Reduced urine output
   iii. Air embolism
   iv. Complications of trocar placement
b. Management of complications

**Andrology: Impotence and Infertility** (8%)

1. **Impotence-Andrology-Androgen Deficiency** (6%)
a. Androgen deficiency
   i. Dx, when to treat
   ii. Complications of treatment
b. Erectile Dysfunction
   i. Dx
   ii. Medical therapy
   iii. Use and contraindications of medical therapy
      1. use in cardiac patients
   iv. Injectable therapy, use and contraindications
c. Erectile dysfunction- Surgical treatment- IPP
   i. who to consider- contraindications for usage
   ii. complications of placement and management
   iii. long term complications
d. Peyronnie’s disease
   i. Diagnosis
   ii. Medical therapy
   iii. Surgical therapy
      1. Complications of surgical therapy
e. Priapism
   i. Etiologies,
      1. High flow vs low flow
2. sickle cell Rx
3. Medical causes both drugs and malignancy as etiology
   ii. Treatment

2. Infertility (2%)
   a. Diagnosis and Rx
      i. Varicocele
         1. Grading system for varicocele
         2. Pathophysiology of infertility with varicocele
         3. Indication for intervention
         4. Treatment
      ii. Obstructive causes
         1. Dx and Treatment
         2. Findings and significance of findings at time of vasovasostomy
         3. Association of Cystic fibrosis with vassal anomalies and significance
      iii. Endocrinologic causes
         1. Dx and Treatment

Female Pelvic Medicine Includes Management of Neurogenic Bladder (12%)

1. Urinary Incontinence, urethral diverticulum, OAB, Painful bladder syndrome (4%)
   a. Urinary Incontinence
      i. Evaluation: Hx, PE, indications for urodynamic study
      ii. Interpretation of urodynamic studies
   b. Stress Incontinence
      i. Behavioral and functional treatment
      ii. Surgical treatment (bulking agents, mid urethral and pubovaginalis sling, retropubic colposuspension)
      iii. Complications of surgery including mesh complications and obstruction
   c. Urge Urinary Incontinence/OAB
      i. Behavioral management
      ii. Pharmacological management
      iii. Options for refractory UUI/OAB (OnabotulinumtoxinA, neuromodulation)
   d. Painful Bladder syndrome including interstitial cystitis
      i. Diagnosis
      ii. Rx
   e. Urethral diverticulum
      i. Dx
      ii. Treatment
   f. Artificial urinary sphincters (Male and Female)
      a. Indications
      b. Placement and complications
2. Pelvic Organ Prolapse, Pelvic Floor Physiology, (1%)
   a. Pelvic Organ Prolapse
      a. Evaluation; History and physical, staging, radiologic evaluation
      b. Nonsurgical treatment
      c. Surgical treatment
   b. Pelvic Floor Physiology (No neural questions see below)
      a. Anatomy
         i. Normal
         ii. Loss of support related to pelvic prolapse
      b. Function of urethral sphincter normal and with incontinence
      c. Influence of hormones on physiology
   c. Fecal Incontinence and Defecation Disorders
      a. Evaluation
      b. Nonsurgical treatment
      c. Surgical treatment

3. Neurourology, Congenital Anomalies affecting FPMS, Female Sexual Dysfunction (7%)
   a. Neural innervation to bladder
      a. Normal
      b. Alterations related to specific disease process
   b. Neurogenic bladder (includes DM, Parkinson’s, MS, CP, SCI, CVA)
      a. Evaluations for NGB including indications and interpretations of UDS
      b. Pharmacotherapy
      c. Surgical intervention (Botox for NGB Not OAB, Augments, urinary diversion)
         i. Indications for urinary augmentation and urinary diversion
      d. Complications of Bladder augmentations and urinary diversion
         i. Surgical complications, e.g. rupture of augment, stones, ureteroenteric strictures, stomal and mid loop stenosis
         ii. Metabolic complications
      e. Dx and Management of autonomic dysreflexia
   c. Congenital female abnormalities that could impact FPMS
      a. Ectopic ureters
         i. Dx
         ii. Management
      b. Imperforate or duplicated vagina
         i. Dx
         ii. Management
   d. Female sexual Dysfunction
      a. Dx
      b. Management
Pediatric Urology (10%)

1. Infections and Inflammatory Processus in Children (1%)
   a. Henoch- Schonlein -Urologic manifestations
   b. Balanoposthitis – Dx, Rx
   c. Phimosis- Rx
   d. Pediatric Vulvovaginitis- Dx and Rx
   e. Vaginal adhesions - Rx
   f. Sexual Transmitted Disease in adolescence
      i. HPV vaccine
      ii. Ethics of Rx ( see core- competency)
   g. UTI’s in neonates and children;  Dx and Rx
      i. Antibiotic prophylaxis in children

2. Congenital Anomalies and Embryological defects (3%)
   Note: Excludes obstructive disorders e.g. UPJ, PUV, primary obstructive megaureter, ureterocele see topic below
   a. Cloacal anomalies- common UG sinus
   b. Congenital adrenal Hyperplasia
   c. Cryptorchidism (anorchia)
   d. Disorders of Sexual Differentiation
   e. Gender dysmorphia
   f. Ectopic Ureters
   g. Epispadias-Exstrophy Complex
   h. Congenital Epididymal and Vasal anomalies
      i. Significance of vassal agenesis to cystic fibrosis
      ii. Significance of vassal abnormalities to renal agenesis or dysplasia
   i. Hydrocele
   j. Hydrocolpos ( Mullerian Duct abnormalities)
   k. Hypospadias
   l. Enlarged prostatic utricle
   m. Imperforate Anus – associated GU anomalies
   n. Prune Belly Syndrome
   o. Congenital megalourethra
   p. Testicular torsion (neonatal and Intravaginal)
   q. Renal Agenesis
   r. Renal Fusion anomalies
      i. Horse shoe kidneys cross fused ectopy
   s. Renal cystic disease of childhood
      i. Multicystic dysplastic kidneys
      ii. Autosomal recessive kidney disease
iii. Autosomal dominant kidney disease
t. Urachal Abnormalities, Dx and Rx
u. Adolescent Varicoceles
   i. Indications for surgical intervention
v. Vesicoureteral reflux
   i. Diagnosis
   ii. Management
   iii. Indication for surgical intervention

3. Pediatric Obstructive Uropathy (2%)
   a. Antenatal Hydronephrosis
      i. Differential Dx and Management
   b. Posterior and anterior urethral valves Dx and Management
      i. Vescostomy when to do
      ii. Management of nephrogenic diabetes insipidus
      iii. Long term sequelae of PUV
   c. Primary Obstructing Megaureter Dx and Management
d. UPJ obstruction Dx and Management
e. Ureteroceles - Dx
   i. Duplex
   ii. Single system- significance
   iii. Management of ureteroceles

4. Pediatric Neurogenic Bladder and Voiding Dysfunction (2%)
   a. Dx – interpretation of UDS assessments
   b. Etiologies of Neurogenic bladder in children
      i. Cerebral palsy
         1. Dx and Management
      ii. Spina bifida
         1. Dx and Management
      iii. Spinal cord injuries
         1. Dx and Management
   iv. Tethered Cord
      1. Dx and Management
c. Pharmacologic and Surgical Rx Neurogenic bladder (Not augments – see below)
   i. Antimuscaranics
   ii. Onabotulinum Toxin
d. Bladder and Bowel dysfunction
   i. Dx and Management
e. Neural Stimulation
   i. Sacral Nerve stimulation
ii. Percutaneous Tibial nerve stimulation
f. Management of Neurogenic Bowel
   i. Bowel Irrigations
   ii. ACE indications and complications

5. Pediatric Neoplasms and Urinary augmentation and diversion (1.5%)
   a. Neoplasms
      i. Renal
         1. Mesoblastic Nephroma
         2. Wilms tumors Dx and Management
            a. Congenital anomalies associated with Wilms Tumors e.g.
               Deny Drash, Aniridia, Hemi hypertrophy
         3. Clear Cell Sarcoma of the kidney: Dx and management
         4. Rhabdoid tumor of kidney: dx and management
         5. Tuberous sclerosis- angiomyolipoma
         6. Von Hippel Landau
         7. Renal cell carcinoma of childhood
      ii. Testicular tumors of childhood and adolescence: Dx and Management
         1. Yolk sac
         2. Teratoma
         3. NSGC tumors in post pubertal pt
         4. stromal tumors (Leydig cell tumors)
         5. Adrenal rest in congenital adrenal hyperplasia
         6. Epidermoid cysts
      iii. Rhabdomyosarcoma: Dx and Management
         1. Bladder and prostate
         2. spermatic cord
         3. vagina (sarcoma botryoides)
   iv. NO NEUROBLASTOMAS!!!

b. Urinary Diversions, Augmentations. BNR, AUS & Slings
   i. Indications and segments used for bladder augmentation
   ii. Complications of augmentations
      1. Rupture
      2. Electrolyte and vitamin abnormalities
      3. Bladder stones management and prevention
      4. Renal Preservation
   iii. Assessment of post augment urinary incontinence
   iv. Complications and management of continent stomas
   v. Bladder Neck reconstruction or slings with or without augmentation
   vi. Vesicostomy management of complications
vii. Indication and complications of urinary conduits.
viii. Artificial Urinary Sphincter- Indications in childhood and management of complications

6. Nephrology – Pediatric
   a. Microscopic hematuria (workup) in Pediatrics
      i. Post infectious GMN- Dx
   b. Gross hematuria of Neonate, evaluation and Rx
      i. Renal Vein Thrombosis
      ii. Renal Artery Thrombosis
      iii. Acute Tubular Necrosis of infancy
   c. Hypercalciuria of infancy
      i. Etiology, treatment

Key for Abbreviations

ACE- Antegrade Continent Enema
CP- Cerebral Palsy
CVA- Cerebral Vascular Accident
DVT- Deep Vein Thrombosis
DX- Diagnosis
ESWL- Extracorporeal Shock Wave Lithotripsy
HPV- Human Papilloma Virus
LUTS- Lower Urinary Tract Symptoms
MS- Multiple Sclerosis
NGB- Neurogenic Bladder
Rx- Treatment
OAB- Overactive Bladder
PCN- Percutaneous Nephrostomy
PSA- Prostatic Specific Antigen
SCI- Spinal Cord Injury
TRUS- Transrectal Ultrasound
TUR- Transurethral Resection
UTI- Urinary Tract Infection