

**GUIDE TO LEARNING IN
FEMALE PELVIC MEDICINE AND
RECONSTRUCTIVE SURGERY**

2018

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The American Board of Obstetrics and Gynecology, Inc.

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AND

The American Board of Urology, Inc.



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TABLE OF CONTENTS

I.	Pelvic Floor and Organ Anatomy	6
II.	Pelvic Floor and Organ Physiology	6
III.	General Pelvic Floor Evaluation	8
IV.	Urinary Incontinence	
	A. Evaluation	8
	B. Counseling and Treatment.....	10
	C. Surgical Treatment for SUI.....	11
	D. Pharmacological Treatment for UUI	12
	E. Behavioral Treatment for UI	13
	F. Treatment with Devices	13
	G. Functional Treatment	13
V.	Overactive Bladder Syndrome/Urgency Incontinence.....	14
VI.	Sensory Disorders of the Lower Urinary Tract	
	A. Painful Bladder Syndrome	16
VII.	Urinary Retention	17
VIII.	Anal/Fecal Incontinence	
	A. Evaluation	17
	B. Treatment	19
IX.	Pelvic Organ Prolapse	
	A. Evaluation	20
	B. Non-surgical Treatment.....	21
	C. Surgical Treatment for POP	22
X.	Urogenital Fistulas	
	A. Vesicovaginal, Urethrovaginal, and Ureterovaginal Fistulas.....	23

B. Rectovaginal Fistula	24
XI. Urethral Diverticula	25
XII. Peri-operative Management	
A. Pre-operative Care	25
B. Intraoperative Care	26
XIII. Congenital Anomalies of the Urogenital Tract	27
XIV. Urinary Tract Infection	28
XV. Neuro-urology	29
XVI. Augmenting Surgical Materials	30
XVII. Symptom Severity and Quality of Life Measures	31
XVIII. Statistics	31
XIX. Scientific Dissemination	32

Preface

The American Board of Obstetrics and Gynecology and The American Board of Urology provide *The Guide to Learning in Female Pelvic Medicine and Reconstructive Surgery* in order to outline the framework for a comprehensive FPMRS fellowship education curriculum. The ACGME program requirements include general competencies: Medical Knowledge (MK), Patient Care (PC), Professionalism (P), Interpersonal and Communication Skills (ICS), Practice Based Learning and Improvement (PBLI), and Systems Based Practice (SBP).

All fellows enrolled in *Female Pelvic Medicine and Reconstructive Surgery* fellowship programs will have completed an ACGME-accredited residency in Obstetrics and Gynecology or Urology and achieved competency in P, ICS, and SBP. The 2016 *The Guide to Learning in Female Pelvic Medicine and Reconstructive Surgery* describes the depth and breadth of learning for FPMRS fellows with specific focus on MK, PC, and PBLI.

ACGME General Competencies

Patient Care (PC)

Fellows must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of female pelvic floor and organ problems focused on the promotion of women's health.

Medical Knowledge (MK)

Fellows must demonstrate knowledge of established and evolving clinical, and cognate (eg, epidemio-logical and social-behavioral) sciences and the application of this knowledge to patient care.

Problem Based Learning and Improvement (PBLI)

Fellows must demonstrate the ability to involve investigation and evaluation of their own patient care, appraisal, and assimilation of scientific evidence, and improvements in patient care.

Interpersonal and Communication Skills (ICS)

Fellows must demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their families, and other health professionals.

Professionalism (P)

Fellows must demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.

Systems Based Practice (SBP)

Fellows must demonstrate actions that demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.

I. Pelvic Floor and Organ Anatomy

1. Demonstrate knowledge of pelvic anatomy, including genital, urinary, colorectal, and musculoskeletal elements. (MK)
2. Describe the vascular supply to each of the pelvic organs and structures, including the external genitalia, uterus, kidney, ureter, urethra, bladder, anus, and recto-sigmoid. (MK)
3. Describe the anatomy, composition and function of the nerve supply to each of the pelvic organs and structures including the external genitalia, erectile tissues, uterus, urethra, bladder, anus and rectosigmoid (sympathetic, parasympathetic, somatic and pelvic autonomic plexuses). (MK)
4. Explain the normal anatomic supports of the vagina, rectum, bladder, urethra, and uterus, including the bony pelvis, pelvic floor nerves and musculature, and connective tissue. (MK)
5. Describe the inter-relationships of the support and function of the pelvic organs; for major pelvic organ functions, describe the contribution of support structures. (MK)
6. Describe the anatomy, borders, and content of the pelvic and retroperitoneal spaces. (MK)
7. Describe the anatomy of the anterior abdominal wall. (MK)
8. Describe the vascular and nerve supply to the urethral and anal sphincter mechanisms. (MK)
9. Describe and contrast common congenital abnormalities with normal reproductive and urinary tract anatomy. (MK)

II. Pelvic Floor and Organ Physiology

1. Describe the normal function of the lower urinary tract during storage and micturition; describe the mechanisms responsible for urinary continence. (MK)
 - a. Explain the role of the central, spinal, and supraspinal and peripheral nervous

- systems, including visceral and somatic afferent and efferent neural pathways on lower urinary tract function. (MK)
- b. Describe the reflex pathways and interactions of the sympathetic, parasympathetic and somatic nervous systems on lower urinary tract function. (MK)
 - c. Discuss the role and mechanism of action of key neurotransmitters on lower urinary tract function (adrenergic, cholinergic, inflammatory mediators, nitrous oxide, ATP and growth factors). (MK)
 - d. Describe the anatomic factors that affect continence and micturition. (MK)
 - e. Describe the urethral sphincter mechanism at rest and with physical stress. (MK)
 - f. Describe the specific actions and side effects of various pharmacologic agents utilized to manage lower urinary tract dysfunction (anticholinergics, beta-3 agonists, alpha blockers). (MK)
 - g. Describe the mechanism of action and effect of estrogen and progesterone on genitourinary tract function. (MK)
2. Describe the physiology of colorectal function. (MK)
- a. Explain the role of the central, spinal, and supraspinal and peripheral nervous systems, including visceral and somatic afferent and efferent neural pathways on colorectal function. (MK)
 - b. Describe anatomic factors and how alterations in anatomy affect colorectal function. (MK)
 - c. Discuss the role and influence of pharmacologic and dietary agents on colorectal function. (MK)
3. Describe normal utero-vaginal physiology and function. (MK)
- a. Describe the normal function of the uterus and vagina before and after menopause. (MK)
 - b. Explain the effects of estrogen and progesterone on uterovaginal function before and after menopause. (MK)
 - c. Describe the anatomic factors that affect the reproductive organs (uterus and vagina) before and after menopause. (MK)
 - d. Discuss the normal physiologic response to sexual stimulation before and after menopause. (MK)
 - e. Describe the influence of gonadal steroids on sexual function before and after menopause. (MK)
 - f. Describe how urinary incontinence, pelvic organ prolapse and anal incontinence impact sexual function. (MK)

III. General Pelvic Floor Evaluation

1. Elicit a comprehensive medical history, including a directed history that identifies all pelvic floor disorders, their type and severity. (PC)
2. Perform a focused pelvic floor examination, including assessment of uterovaginal support, pelvic muscle tone and strength, pelvic muscle spasm and/or pain, evaluation of pelvic floor trigger points, anal sphincter tone, intactness and ability to voluntarily contract, pelvic floor reflexes and sensation, and uterine and adnexal size and tenderness. (PC)
3. Correlate findings on focused pelvic floor examination with the results of diagnostic testing to formulate a treatment plan. (PC)
4. Describe the techniques needed to diagnose different pelvic floor disorders, including urinary incontinence and subtypes, lower urinary tract disorders, pelvic organ prolapse, and anal incontinence, pelvic floor tension myalgia, using prevailing standardized terminology (ICS, ABOG and ABU Guidelines). (MK, PC)
5. Evaluate for co-existing environmental factors or diseases, which may impact patient selection or response to treatment. (PC)
6. Evaluate the effects of pelvic floor disorders on sexual function

IV. Urinary Incontinence

A. Evaluation

1. For the following aspects of urinary incontinence and lower urinary tract disorders, describe the evidence for use, perform, and demonstrate interpretation: (MK, PC)
 - a. Evaluation of urinary symptom severity and bother (urinary diaries, pad tests, condition-specific bother and quality of life questionnaires)
 - b. Assess precipitating factors and lifestyle modifications
 - c. Assess past medical, obstetrical and surgical histories
 - d. Describe and determine the impact of structural, anatomic, and congenital malformations

- e. Evaluate the use current medications and their effects on urinary symptoms
 - f. Evaluate other organ systems, including the nervous system and their effects on lower urinary tract function
 - g. Describe the psychosocial and psychosexual effects of urinary incontinence
 - h. Evaluate the impact of prior treatments on the patient's symptoms and patient preferences or repeat care
 - i. Solicit patient's desires for treatment including desire for no treatment, medical and/or surgical management
2. For the following physical examination techniques characterize lower urinary tract disorders, describe the evidence for use, perform, and demonstrate interpretation: (PC)
- a. Neurologic status (mental status, gait, pelvic floor and lower limb reflexes and sensation and strength).
 - b. Pelvic floor muscle and anal sphincter tone and strength
 - c. Pelvic floor support defects – anterior, apical, and posterior
 - d. Urethral mobility
 - e. Structural, anatomic and congenital malformations
 - f. Signs of stress incontinence (stress test)
3. For the following diagnostic tests to characterize lower urinary tract disorders, describe the evidence for use, describe performance, and demonstrate interpretation: (MK, PC)
- a. Pad testing (1 hour, 24 hour standardized)
 - b. Urodynamics, single channel (simple cystometry, “eye-ball”)
 - c. Urodynamics, multi-channel urodynamics, including video-urodynamics
 - d. Urethral pressure profilometry
 - e. Leak point pressures
 - f. Uroflowmetry (simple, instrumented pressure flow studies)
 - g. Urethral electromyography
 - h. Neurophysiologic studies (e.g., electromyography, sacral reflexes)
 - i. Endoscopy (cystoscopy, urethroscopy)
 - j. Imaging studies (e.g., fluoroscopy, endoanal ultrasound, transperineal ultrasound, MRI)
 - k. Pelvic floor muscle testing (assess for pain, trigger points and strength)

- I. Bladder cytology
 - m. Urinary microscopy, microbial assessment and culture
- 4. Discuss each of the following as related to the diagnostic tests listed in #3 above.
(MK)
 - a. Prevailing diagnostic terminology, normal values, and test reliability
 - b. Variations in instrumentation and technique
 - c. Technical specifications of the equipment or instrumentation
 - d. Indications, limitations, and cost-effectiveness of testing
 - e. Results which require further testing
- 5. Discuss the diagnosis of stress urinary incontinence, overactive bladder, urgency urinary incontinence and mixed incontinence including
 - a. Common presenting symptoms (MK)
 - b. Underlying pathophysiology (MK)
 - c. Diagnostic workup and clinical history which distinguishes one from another (MK, PC)
- 6. Discuss the following less common causes of urinary incontinence; describe the indications for work-up.
 - a. Genitourinary tract fistulas; including vesicovaginal, urethrovaginal, ureterovaginal fistulas
 - b. Ectopic ureter
 - c. Urethral Diverticula
 - d. Overflow
- 7. Discuss the uncommon and potential additional differential diagnoses associated with urinary incontinence
 - a. Malignancies of peritoneal cavity or pelvic organs
 - b. Peritoneal fistula
 - c. Foreign body
 - d. Physiologic (sweating, hygiene)
 - e. Congenital abnormalities (ectopic ureter, bladder atrophy etc.)

B. Counseling and Treatment (Indications, Recommendations and Alternatives)

- 1. Discuss treatment indications and options for treatment for bothersome urinary

incontinence including stress, urgency and mixed incontinence (MK)

2. Provide patient-centered counseling regarding the initiation and selection of incontinence treatment (surgical and non-surgical). (MK, PC)

C. Surgical Treatment for SUI

1. For the following continence procedures, describe the evidence for use, indications, complications, success rates and technical performance: (MK, PC)
 - a. Sling procedures
 - i. Synthetic full length
 - 1) Retropubic approaches
 - 2) Transobturator approaches
 - 3) Mini-Sling
 - ii. Fascial (autologous fascia lata and rectus fascia, allografts/xenografts)
 - iii. Synthetic mini slings
 - b. Periurethral bulking agents
 - c. Procedures of historical importance:
 - i. Retropubic urethropexy (Burch urethropexy and Marshall-Marchetti-Kranz)
 - ii. Kelly plication
 - iii. Needle suspension procedures (Pereyra, Raz, Stamey, Gittes, Muzsnai)
 - iv. Paravaginal defect repair
2. Describe evidence for success and complication rates for first-line, primary continence procedures, including quality of studies and level of evidence. (PBLI)
3. Discuss differences in success rates, based on the following factors: (MK)
 - a. Primary and secondary continence procedures
 - b. Reported rate of success
4. Composite rates of success
 - a. Urethral hypermobility (with vs. without)
 - b. Concomitant prolapse procedure (with vs. without)
 - c. Concomitant hysterectomy (with vs. without)

5. Identify, evaluate, and manage complications associated with continence surgery, including: (MK, PC)
 - a. Cystotomy
 - b. Fistula
 - c. Persistent or recurrent urinary incontinence symptoms
 - d. Voiding dysfunction or retention
 - e. Foreign body complications including mesh exposure and erosion
 - f. Urinary tract infection, including recurrent infections
 - g. Dyspareunia
 - h. Urinary Urgency

6. For pre-operative urodynamic testing, discuss: (MK)
 - a. Patient selection
 - b. Diagnostic terms
 - c. Interpretation
 - d. Relationship with surgical outcomes
 - e. Prolapse reduction

7. Discuss alternatives, advantages, disadvantages, and evidence for prophylactic continence procedures at the time of vaginal and abdominal prolapse surgery in stress continent women. (MK, PBLI, ICS)

D. Pharmacological Treatment for UUI

1. Describe lower urinary tract receptors, key mediators (detrusor, bladder neck, urethra, CNS) and sites for pharmacologic manipulation to treat urinary incontinence. (MK)

2. Describe the following for each class of drug used to treat urinary incontinence listed in #3 below. (MK, PC, PBLI)
 - a. Indications and contraindications
 - b. Safe and effective dose
 - c. Published rates of effectiveness
 - d. Side effects and their prevalence
 - e. Rates of long-term continuation and compliance
 - f. Quality of studies establishing success and complication rates

- g. Costs

E. Behavioral Treatment for UI

1. For the following behavioral treatments used to treat urinary incontinence, describe the evidence for use, indications, contraindications, effectiveness, complications, compliance and success rates: (MK, PC, PBLI, ICS)
 - a. Timed voiding
 - b. Biofeedback
 - c. Pelvic floor muscle training
 - d. Electrical stimulation
 - e. Other evidenced-based behavioral treatments
2. Counsel patients on each of the behavioral interventions listed above,: (MK, PC, PBLI, ICS)

F. Treatment with Devices

1. For the following device treatments used to treat urinary incontinence, describe the evidence for use, indications, contraindications, effectiveness, complications, compliance and success rates: (MK, PC, PBLI, ICS)
 - a. Continence pessaries
 - b. Intravaginal tampons and tampon-like inserts
 - c. Urethral inserts
 - d. Catheters
2. Perform fitting and subsequent, longitudinal care for continence pessaries. (PC)
3. Counsel patients on each of the device interventions listed above: (MK, PC, PBLI, ICS)

G. Functional Treatment

1. Describe the following functional factors related to urinary incontinence. (MK)
 - a. Mobility issues
 - b. Fecal impaction
 - c. Dementia

- d. Hyperglycemia
 - e. Infection
 - f. Nocturnal polyuria
 - g. Medications
 - i. Sedatives
 - ii. Hypnotics
 - iii. Diuretics
 - iv. Antidepressants
2. Discuss the role and risks of each of the following functional interventions in the management of urinary incontinence. (MK)
- a. Weight optimization
 - b. Fluid management, including evening restrictions
 - c. Change of pharmacologic agents or timing of their use (diuretics)
 - d. Obstructive Sleep Apnea (e.g., use of CPAP therapy)
 - e. Optimize control of allergies, bronchitis, and chronic cough
 - f. Modification of the environment (e.g., use of a bedside commode)
 - g. Optimize bowel function and minimize constipation and fecal impaction
 - h. Modification of clothing to compensate for decreased dexterity
 - i. Intermittent self-catheterization
 - j. Absorbent products
 - k. Other evidenced based treatments
3. Counsel patients regarding hazards and limitations of chronic indwelling catheters for incontinence or voiding dysfunction management. (MK, PC, ICS)

V. Overactive Bladder Syndrome/Urgency Incontinence

1. Cite the prevailing international definitions of urinary frequency, urgency, nocturia, urgency incontinence, and overactive bladder syndrome. (MK, PBLI)
2. Evaluation of OAB symptom severity and bother (condition-specific bother and quality of life questionnaires)
3. Discuss the impact of OAB on:
 - a. Quality of life

- b. Psychosocial and sexual function
 - c. Development of other medical conditions
- 4. Evaluate co-existing factors or diseases which may direct treatment selection and response. (PC)
- 5. Evaluate for any current medications and their effect on OAB
- 6. Prior treatments, patient's response and patient preferences
- 7. Discuss the indications, characteristic findings and limitations of the following methods that may be used to diagnose overactive bladder syndrome. (MK)
 - a. Clinical symptoms
 - b. Urinary diary
 - c. Urine, urethral, cervical culture
 - d. Filling cystometry
 - e. Cystourethroscopy
- 8. Cite indications, techniques, response rates and side effects of the following: (MK, PBLI)
 - a. Bladder training
 - b. BiofeedbackPharmacologic agents, including
 - i. Anticholinergics
 - ii. B-agonists
 - c. Neuromodulation (SNS and PTNS)
 - d. Intradetrusor Botox injections
 - e. Other evidence based treatments
- 9. Drugs used to treat urgency urinary incontinence
 - a. Antimuscarinic agents
 - b. α -adrenergic agonists and antagonists
 - c. β -adrenergic agonists
 - d. Selective norepinephrine and serotonin uptake inhibitors
 - e. Tricyclic antidepressants
 - f. Neurotoxins (botulinum, capsaicin, resiniferatoxin)

VI. Sensory Disorders of the Lower Urinary Tract

A. Painful Bladder Syndrome

1. Discuss the proposed theories and the levels of evidence regarding the pathophysiology of painful bladder syndrome. (MK, PBLI)
2. Diagnose painful bladder syndrome using prevailing international definitions and urinary diaries. (PC)
3. Explain the role of diet on the development or exacerbation of painful bladder symptoms. (MK)
4. Perform and interpret cystourethroscopy, hydrodistention, and bladder biopsy findings for painful bladder syndrome. (PC)
5. For the following procedures, describe the evidence for use, indications, complications, success rates and technical performance. (MK, PC, PBLI)
 - a. Hydrodistention of the bladder under anesthesia
 - b. Bladder instillation
 - c. Physical and behavioral therapy
 - d. Systemic therapy including
 - i. Immunosuppressive agents, such as corticosteroids
 - ii. Antihistamines
 - iii. Anti-inflammatory agents
 - iv. Sodium pentosan polysulfate
 - e. Comprehensive pain management including the use of alternative therapies
 - f. Endoscopic surgical procedures
 - g. Surgical procedures
 - i. Bladder augmentation procedures
 - ii. Urinary diversions
 - h. Other evidenced based therapies

VII. Urinary Retention

1. Describe the potential causes for urinary retention, including post-operative, pharmacologic, functional, anatomic obstruction or secondary to a neurologic condition. (MK)
2. Evaluate the acute or chronic presentation of urinary retention with a complete history, physical exam and proper testing (post-void residual). (PC)
3. Explain the role and timing of more advanced testing. (PC)
4. Discuss the indications and techniques for management (PC)
 - a. Urethral catheter drainage
 - b. Clean intermittent catheterization
 - c. Suprapubic Catheter drainage
 - d. Urethral sling incision or revision
 - e. Neuromodulation

VIII. Anal/Fecal Incontinence

A. Evaluation

1. For the following aspects of the pelvic floor history to characterize bowel control disorders, describe the evidence for use and perform: (PC)
 - a. Evaluation of bowel symptom duration, severity, frequency and bother (bowel diaries, condition-specific bother and quality of life questionnaires); include fecal incontinence associated symptoms (diarrhea, fecal urgency, constipation, impaction, or defecatory problems)
 - b. Stool consistency
 - c. Assess precipitating factors and lifestyle modifications
 - d. Past medical, obstetrical and surgical history
 - e. Underlying colo-rectal disorders including Irritable Bowel Syndrome, motility disorders, Inflammatory Bowel diseases.
 - f. Structural, anatomic, and congenital malformations
 - g. Current medications and their effects on colorectal function and symptoms

- h. Other organ systems, including the nervous system and their effects on colorectal function and symptoms
 - i. Determine psychosocial and psychosexual effects of fecal incontinence
 - j. Prior treatments, patient's response and patient preferences
- 2. For the following physical examination techniques to characterize fecal incontinence, perform, and demonstrate interpretation of: (PC)
 - a. Neuromuscular examination including assessment of pelvic floor muscle and anal sphincter tone and strength, pelvic floor reflexes, and perineal and anal sensory function
 - b. Identification of anal fistula, fissures, or scarring, perineal descent, rectal prolapse, hemorrhoids, tumor, and anal sphincter disruptions
- 3. Diagnostic Tests for Fecal Incontinence and Defecatory Disorders
 - a. Endoscopy including anoscopy, proctoscopy, and colonoscopy
 - b. Anal manometry
 - c. Anorectal sensory assessment
 - d. Measurement of rectal compliance
 - e. Defecography/ evacuation proctography/dynamic fluoroscopy
 - f. Neurophysiologic studies (e.g., electromyography, sacral reflexes)
 - g. Endoanal ultrasound, transperineal ultrasound of the anal sphincter complex and pelvic floor musculature
 - h. Levator and anal sphincter MRI
 - i. Fistulogram
 - j. Motility studies
- 4. For the diagnostic tests listed in #3 characterize fecal incontinence, describe the evidence for use, describe performance, and demonstrate interpretation: (MK, PC)
 - a. Standard terminology, normal values, and test reliability
 - b. Variations in instrumentation and technique
 - c. Indications, limitations, and cost-effectiveness
 - d. Results which require further testing
- 5. Evaluate co-existing factors or diseases which may direct treatment selection and response. (PC)

B. Treatment

1. Discusses the step-wise evidence-based algorithm for treatment of fecal incontinence.(MK)
2. Discuss the patient factors that impact treatment choices and outcomes for fecal incontinence. (MK)
3. Discuss the evidence, mechanism and implementation of the following fecal incontinence treatment options: (MK)
 - a. Behavioral interventions
 - i. Dietary changes
 - ii. Pelvic floor muscle exercises
 - iii. Biofeedback
 - iv. Electrical stimulation
 - v. Enemas
 - vi. Other behavioral interventions
 - b. Pharmacologic interventions
 - i. Altering intestinal transit
 - ii. Bile salt binding medications
 - c. Surgical
 - i. Sphincteroplasty
 - ii. Bulking agents
 - iii. Sacral neuromodulation
 - iv. Colostomy
 - v. Dynamic muscle transposition
 - vi. Artificial sphincter
 - vii. Other evidenced based treatments
4. For first-line surgical procedures for fecal incontinence, discuss: (MK, PC, PBLI)
 - a. The evidence basis
 - b. Indications
 - c. Risks
 - d. Alternatives
 - e. Efficacy
 - f. Complications
 - g. Technical performance

IX. Pelvic Organ Prolapse

A. Evaluation

1. For the following aspects of the pelvic floor history to characterize pelvic organ prolapse, describe the evidence for use, perform, and demonstrate interpretation: (MK, PC)
 - a. Evaluation of prolapse symptom severity and bother (condition-specific bother and quality of life questionnaires)
 - b. Evaluation of urinary symptoms, severity and bother (urinary diaries, pad tests, condition-specific bother and quality of life questionnaires)
 - c. Evaluation of bowel symptoms, severity and bother (bowel diaries, condition-specific bother and quality of life questionnaires)
 - d. Assess precipitating factors and lifestyle modifications
 - e. Assess precipitating factors and lifestyle modifications
 - f. Past medical, obstetrical and surgical histories
 - g. Structural, anatomic, and congenital malformations
 - h. Current medications and their effects on pelvic support
 - i. Determine psychosocial and psychosexual effects of pelvic organ prolapse
 - j. Prior treatments, patient's response and patient preferences
2. Demonstrates patient counseling about other pelvic floor symptoms and disorders and explain their relationship to pelvic organ prolapse. (PC, MK)
3. Explain the most common symptoms associated with prolapse and explain the relationship between symptoms and anatomy. (MK)
4. Discuss various systems to describe vaginal support and prolapse. (MK)
5. Discuss lower urinary tract symptoms associated with pelvic organ prolapse, including difficulty voiding, splinting, hesitancy, slow stream and post-void fullness stress urinary incontinence, urgency incontinence and the role and methods for reduction stress testing. (MK)
6. Discuss bowel symptoms associated with prolapse, including difficult defecation,

- splinting, or feeling of incomplete evacuation. (MK)
7. Discuss relationship of prolapse with body image, sexual activity and function. (MK)
 8. For the following physical examination techniques to characterize pelvic support, describe the evidence for use, perform, and demonstrate interpretation:: (PC)
 - a. Neurologic status (pelvic floor and lower limb reflexes and sensation)
 - b. Pelvic floor muscle and anal sphincter strength
 - c. Pelvic organ support defects (identifying and quantifying all pelvic support defects using Pelvic Organ Prolapse Quantification (POP-Q) system)
 - d. Urethral mobility
 - e. Sign of stress incontinence (reduction stress test)
 9. Describe factors that may affect severity of observed prolapse and alter POP-Q measurements during examination (strain, supine vs. standing, etc.). (MK)
 10. Describe evidence for and use of techniques to identify enteroceles and perineal descent. (MK)
 11. Discuss treatment indications, counseling and selection of treatment options (surgical and non-surgical) for symptomatic prolapse. (MK)
 12. Provide patient-centered counseling regarding the initiation and selection of prolapse treatment. (MK, PC)

B. Non-surgical Treatment

1. Discuss the evidence, indications and efficacy of pelvic floor physical therapy in prolapse care. (MK)
2. List factors which impact successful pessary fitting for prolapse, including: stage, genital hiatus, vaginal length, uterus, etc. (MK, PC)
3. Fit and manage prolapse pessaries. (PC)
4. Discuss the evidence, risks, complications and efficacy, advantages and

disadvantages, of the following prolapse pessaries. (MK, PC)

- a. Ring with and without support
 - b. Donut
 - c. Gellhorn
 - d. Gehrung
 - e. Lever
 - f. Cube
 - g. Inflatable
5. Discuss the role of estrogen replacement therapy (systemic vs. local) in women using pessary for prolapse. (MK, PC)
6. Explain how recommendations differ based on presence or absence of uterus. (MK, PC)

C. Surgical Treatment for POP

1. Describe indications, risks, benefits, complication, efficacy and evidence for each of the following prolapse procedures. (MK, PC, PBLI)
 - a. Sacrocolpopexy (open, laparoscopic, robotic)
 - b. Transvaginal mesh procedures (absorbable, non-absorbable, biologics)
 - c. Uterosacral suspension
 - d. Sacrospinous ligament suspension
 - e. McCall's culdeplasty
 - f. Iliococcygeous suspension
 - g. Colpocleisis
 - h. Manchester operation
 - i. Hysteropexy
 - j. Anterior colporrhaphy
 - k. Anterior vaginal repair with graft
 - l. Paravaginal repair
 - m. Posterior colporrhaphy
 - n. Posterior vaginal repair with graft
 - o. Defect-specific posterior repair
 - p. Trans-anal posterior repair
 - q. Perineorrhaphy
 - r. Levatorplasty

- s. Other evidence based procedures
2. Describe the considerations in planning prolapse surgery, focusing on the indications for intra-operative sequencing of combined procedures from the above list.

X. Urogenital Fistulas

A. Vesicovaginal, Urethrovaginal, and Ureterovaginal Fistulas

1. Describe risk factors for genitourinary fistulas (urethrovaginal, vesicovaginal, ureterovaginal, colovesical). (MK)
2. Treat genito-urinary fistulas. (PC)
3. Perform and interpret the results of selected tests to diagnose genitourinary fistulas. (MK, PC)
 - a. Dye testing (bladder instillation, Double dye tampon test)
 - b. Cystourethroscopy
 - c. CT Urogram
 - d. MRI
 - e. Ultrasound
 - f. Retrograde pyelograms
4. For the following procedures, describe the evidence for use, indications, complications, success rates and technical performance: (MK, PC, PBLI)
 - a. Prolonged bladder drainage
 - b. Cauterization plus drainage
 - c. Endoscopic injection (fibrin glue)
 - d. Abdominal (open and minimally invasive), transvesical, and vaginal vesicovaginal fistula repairs
 - i. Vascular pedicle grafts (e.g., martius, omental)
 - ii. Peritoneal grafts
 - iii. Flaps
 - e. Ureteroneocystostomy
 - f. Psoas hitch

- g. Boari flap
 - h. Transureteroureterostomy
 - i. Augmentation cystoplasty
5. Describe repair outcomes. (MK)
- a. Timing of repair
 - b. Success rates
 - c. Persistent urinary symptoms
6. Describe preoperative and postoperative care for genitourinary fistula and urethral diverticula repair. (PC)
- a. Postoperative bladder drainage

B. Rectovaginal Fistula

1. Describe risk factors for rectovaginal fistulas, including vaginal childbirth, operative vaginal delivery, episiotomy, posterior compartment surgery, complex Bartholin gland cyst excision, pelvic radiation, inflammatory bowel disease, neoplasm and trauma. (MK)
2. Describe appropriate techniques, imaging studies, and procedures to diagnose rectovaginal fistula and differentiate it from a colovaginal fistula. (MK, PC)
- a. Fistulogram
 - b. Ultrasound
 - c. CT oral and rectal contrast
3. Describe operative techniques to repair rectovaginal fistula and impact of location and etiology on technique. (MK, PC)
- a. Martius graft
 - b. Peritoneal grafts
 - c. Cutaneous flaps
4. Discuss preoperative and postoperative management of rectovaginal fistula repair. (MK, PC)

XI. Urethral Diverticula

1. Describe risk factors for urethral diverticula. (MK)
2. Discuss management options for symptomatic and asymptomatic urethral diverticula. (PC)
3. Discuss the management option(s) for urethral diverticula and concomitant stress urinary incontinence
4. Perform and interpret the results of selected tests to diagnose urethral diverticula: (MK, PC)
 - a. Cystourethroscopy
 - b. VCUG
 - c. Double-balloon catheter
 - d. Ultrasound
 - e. MRI
 - i. describe proper imaging technique and sequencing of MRI to optimize usage of this imaging modality.
5. For the following procedures, describe the evidence for use, indications, complications, success rates and technical performance: (MK, PC, PBLI)
 - a. Urethral diverticulectomy
 - b. Spence procedure
6. Describe the indicated procedures, technical performance, complication rates and success rates of SUI correction at the time of urethral diverticulectomy.
7. Describe postoperative care after urethral diverticula repair. (PC)
 - a. Postoperative bladder drainage

XII. Peri-operative Management

A. Pre-operative Care

1. Conduct detailed preoperative assessment with consideration given to the needs of special patient groups, such as: (PC, ICS, P, SBP)
 - a. Those with multiple prior surgeries
 - b. Geriatric patients
 - c. Obese patients
 - d. Patients with coexisting medical conditions, such as cardiopulmonary disease or coagulation disorders
 - e. Neurologically impaired, including wheelchair dependent
 - f. Non-English speaking patients
 - g. Immunocompromised and steroid-dependent patients
 - h. Those who decline blood products

2. Describe preoperative evaluation and preparation of geriatric patients, including: (MK, PC, ICS)
 - a. Assess poly-pharmacy and identify drugs most likely to cause adverse reactions in geriatric patients
 - b. Assess functional status and impact of surgery on patient's capacity for independent living
 - c. Explain surgical options in light of medical condition and functional status, including possible anesthesia complications
 - d. Assess patient's capacity for independent decision making
 - e. Counsel patients and family about advance directives, living wills, power of attorney

3. Describe indications for and request appropriate preoperative evaluation, including urodynamics, cystoscopy, procto-sigmoidoscopy, and radiographic imaging. (PC, SBP)

4. Co-Manage underlying medical and surgical conditions and request appropriate preoperative evaluation including blood work, radiologic studies, ECG, echo, etc. (PC, SBP)

B. Intraoperative Care

1. Conduct appropriate preoperative time out and postoperative debrief, including discussion of the surgical plan with the operating room team and evaluation of conduct of procedure. (ICS, SBP)

2. Be able to describe patient positioning which minimizes compression and stretch neuromuscular injuries. (MK)
3. Be able to position the patient for the procedure to minimize compression and stretch neuromuscular injuries. (PC)
4. Administer appropriate antibiotics and deep vein thrombosis prophylaxis. (PC)
5. Discuss the various surgical power sources (electrosurgery), indications for each, alternatives, and complications. (MK, PC)
6. Recognize and treat intraoperative lower urinary tract injury (bladder and ureter) using:
 - a. Cystoscopy with
 - i. techniques to confirm ureteral efflux including urine coloring agents, glucose solutions
 - ii. retrograde pyelograms and ureteral stent placement. (PC)
7. Recognize and repair intraoperative injury to bowel and vascular systems, when appropriate. (PC)
8. Recognize and request assistance for intraoperative injuries that require consultation.
9. Describe the management of severe intra-operative bleeding and the implementation of massive transfusion protocols.

XIII. Congenital Anomalies of the Urogenital Tract

1. Describe the normal embryology of Mullerian and gonadal development. (MK)
2. Describe the pathogenesis of abnormal Mullerian development, including imperforate hymen, vaginal septum (transverse and longitudinal), and vaginal agenesis with and without a uterus. (MK)
3. Evaluate and diagnose congenital anomalies of the urogenital tract. (MK)

4. Discuss the relationship between genital anomalies and renal/lower urinary tract anomalies. (MK)
5. Describe features of a patient's history suggestive of a developmental anomaly of the urogenital tract. (MK)
6. Interpret the following tests to diagnose a urogenital anomaly, its etiology, and potential clinical implications: (MK, PC)
 - a. Ultrasound- 2D and 3D
 - b. Endocrinologic assay (hormones)
 - c. Karyotype assessment
 - d. CT, MRI
 - e. Endoscopic assessment (hysteroscopy, laparoscopy, cystoscopy, retrograde pyelogram)
7. Perform appropriate non-surgical and surgical techniques to treat urogenital anomalies, including imperforate hymen, vaginal agenesis with and without uterus, transverse and longitudinal vaginal septum, Mullerian anomalies. (PC)
8. Discuss appropriate timing and indications for gonadectomy. (MK)
9. Discuss appropriate timing, indications and post-op considerations for creation of a neo-vagina (MK)
10. Counsel patients and their families about the impact of urogenital anomalies on reproduction and timing of reconstruction. (ICS)

XIV. Urinary Tract Infection

1. Obtain a pertinent patient history and diagnose urinary tract infection. (PC, ICS)
2. Distinguish pathophysiology, including host factors, for lower and upper urinary tract infections. (MK)
3. Describe diagnostic methods and diagnostic criteria for the various types of urinary tract infections including:

- a. asymptomatic bacteriuria
 - b. uncomplicated UTI
 - c. complicated UTI
 - d. recurrent UTI
 - e. persistent UTI (MK)
 - f. UTI caused by Multi-drug resistant organisms
4. Describe techniques, accuracy, sensitivity, specificity, and interpretation of the following urine tests for primary and recurrent urinary tract infection. (MK)
 - a. Urine dipstick analysis
 - b. Urine analysis
 - c. Urine culture
 5. Describe the indications for the following tests for urinary tract infection. (PC)
 - a. Cystourethroscopy
 - b. Upper tract imaging
 6. Describe evidence for urinary tract infection treatment options, including the following. (MK).
 - a. Short-term (3-day) therapy
 - b. Longer treatment (7-10 days)
 - c. Prophylactic treatment (periodic versus postcoital antibiotics, vaginal estrogenization)
 - d. Non-microbial agents, probiotics, urine acidifiers, anti-urothelial adherence agents
 7. Administer and assess efficacy of appropriate therapy for acute, chronic, and complicated urinary tract infections. (PC)

XV. Neuro-urology

1. Describe the pathophysiology of neurologic conditions which affect the bladder and lower urinary tract. (MK)
2. Elicit a complete neuro-urologic history elucidating relevant neurologic conditions and any gross motor and sensory deficits. (PC)

3. Perform an accurate neurologic examination, including assessment of lower limb reflexes, sensory and motor function, perineal sensation and reflexes, and pelvic floor and anal sphincter muscle strength. (PC)
4. Appropriately evaluate bladder storage and voiding function using urodynamic testing and prevailing international terminology. (PC)
5. Describe the pathophysiology of the risks associated with neurogenic lower urinary tract dysfunction. (MK)
6. Assess the risks of bladder dysfunction to upper urinary tract function. (PC)
7. Formulate a management plan to protect the upper urinary tract from neurogenic bladder dysfunction. (PC)
8. Discuss the pathophysiology and management of autonomic dysreflexia. (MK)
9. Recognize and manage lower urinary symptoms related to neurologic disorders. (PC)

XVI. Augmenting Surgical Materials

1. Discuss different types of graft materials using in prolapse and incontinence surgery, including graft properties, advantages, and risks associated with each graft. (MK)
 - a. Autograft
 - b. Allograft
 - c. Xenograft
2. Discuss relevant characteristics (pore size, filament type, flexibility, tensile strength) of augmenting surgical materials. (MK)
3. Discuss the level of evidence (success and complications) for the use of augmenting surgical materials for prolapse and incontinence surgery. (MK, PBLI)

XVII. Symptom Severity and Quality of Life Measures (MK)

1. Discuss the difference between ad hoc, validated generic and condition-specific tools and their ability to measure the impact of pelvic floor dysfunction
2. Given examples and discuss the strengths and weaknesses of validated tools to measure symptom severity and quality of life of women with
 - a. Urinary incontinence
 - b. Anal incontinence
 - c. Pelvic organ prolapse
 - d. Sexual function
3. Discuss reliability and validity testing of scales used to evaluate pelvic floor dysfunction including
 - a. Test retest reliability
 - b. Chronbach's alpha
 - c. Construct or face validity
 - d. Criterion validity
 - e. Responsiveness
 - f. Minimally important differences

XVIII. Statistics

1. Design a hypothesis driven analytical study, including: (MK, PBLI)
 - a. Define the problem or key gap in the literature that the investigation will address
 - b. Develop hypothesis (null hypothesis) and specific aims
 - c. Describe the significance of the study
 - d. Describe the innovation of the study
 - e. Design an approach to meet the specific aims
 - f. Determine the sample size with appropriate statistical analysis; describe data management and the analysis plan for the investigation
 - g. List study limitations and strengths
 - h. Draw appropriate inferences
 - i. Make valid conclusions

2. Discuss different types of study bias (selection, information, confounding). (MK, PBLI)
 - a. Discuss different types of study design, strengths and limitations of each
 - b. Identify and apply appropriate measures of central tendency, types of distribution (normal vs. non-normal) and statistical analysis for each (parametric vs. non-parametric)
 - c. Describe difference between prevalence and incidence
 - d. Provide definitions for false positive, false negative, positive and negative predictive values, sensitivity, and specificity
 - e. Describe how a power analysis is performed
3. Define and interpret the meaning of Type I error (alpha error) and Type II error (beta error). (MK, PBLI)
4. Use appropriate statistical methods to determine if differences between study populations are significant. (MK, PBLI)
5. Define and describe the use of: (MK, PBLI)
 - a. Chi-square test of association
 - b. Independent and paired student's t-test
 - c. Mann-Whitney U test
 - d. Wilcoxon sign rank test
 - e. Pearson and Spearman correlations
 - f. Analysis of variance (ANOVA)
 - g. Logistic and linear regression analysis
 - h. Odds ratio, risk ratio, hazards ratio
 - i. Survival analysis
 - j. Analysis of qualitative data
6. Interpret confidence intervals. (MK)
7. Interpret research findings and discuss potential limitations. (MK)

XIX. Scientific Dissemination

1. Write publishable scientific thesis, including:
 - a. Study aims

- b. Significance and innovation of research
 - c. Study population and generalizability of findings
 - i. Inclusion and exclusion criteria
 - ii. Appropriate study design to answer specific aims
 - iii. Experimental, randomized, analytical, prospective/retrospective, observational
 - iv. Types of bias (selection, information, confounding)
 - v. Appropriateness of control group
 - vi. Statistical (study) power
 - vii. Outcome measures
2. Analysis of results is appropriate (statistical tests and interpretations).
3. Conclusions justified by findings and relevant to hypothesis.