

Council on Resident Education in Obstetrics and Gynecology

EDUCATIONAL OBJECTIVES

Core Curriculum in Obstetrics and Gynecology

10th Edition



The American College of
Obstetricians and Gynecologists
WOMEN'S HEALTH CARE PHYSICIANS

Educational Objectives: Core Curriculum in Obstetrics and Gynecology, 10th Edition, was developed by members of the Education Committee of the Council on Resident Education in Obstetrics and Gynecology (CREOG). It should not be viewed as a body of rigid rules. The information is general and intended to be adapted to many different situations, taking into account the needs and resources particular to the locality, the institution, or the type of practice. Variations and innovations that improve the quality of patient care are encouraged.

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PREFACE

The Council on Resident Education in Obstetrics and Gynecology (CREOG) published the first edition of *Educational Objectives for Residency Programs in Obstetrics and Gynecology* in 1976 to establish a framework for a comprehensive residency education curriculum. This 10th edition differs from previous editions in that we have focused on topics and concepts rather than specific information and detail. The overall goals of the text are to provide general guidelines on which an individual program's curriculum can be based and to make it easier for programs to establish realistic, practical learning objectives.

In writing this edition of *Educational Objectives*, we strove to provide readers with a clear, concise description of exactly what knowledge and skills residents should master during their training, regardless of the type of practice they will be entering upon completion of their residencies. This edition of *Educational Objectives* retains the overall format of prior editions and includes summary tables at the end of each unit that delineate the procedures a resident should either understand or be able to perform independently at the time of graduation. We continue to link each major learning objective to one of the following six Accreditation Council for Graduate Medical Education (ACGME) general competencies:

1. Patient Care (PC)
2. Medical Knowledge (MK)
3. Interpersonal and Communication Skills (ICS)
4. Professionalism (P)
5. Practice-Based Learning and Improvement (PBLI)
6. Systems-Based Practice (SBP)

In this edition of *Educational Objectives*, we have included new learning objectives related to patient safety, advocacy, and sexuality. These changes are based on the evolving role of physicians in society and new information obstetrician–gynecologists will need to master in order to optimize the provision of health care for women.

Members of the CREOG Education Committee developed *Educational Objectives: Core Curriculum in Obstetrics and Gynecology*, 10th Edition. The committee is composed of generalists and subspecialists with many years of experience in medical education. They were assisted by editorial consultants from the American College of Obstetricians and Gynecologists and CREOG and the comments and critiques of colleagues in related organizations. The collective effort is a synthesis of learning objectives designed ultimately to prepare the graduating resident to be an independent practitioner of obstetrics and gynecology.

J. Chris Carey, MD
Chair, CREOG Education Committee

Unit 1

GENERAL CONSIDERATIONS ↔

Obstetrician–gynecologists are physicians who possess special knowledge, skills, and professional capability in the medical and surgical care of the female reproductive system and associated disorders. This distinguishes them from other physicians and enables them to serve as consultants to non-obstetrician–gynecologist physicians and as primary physicians for women.

The practice of obstetrics and gynecology requires a commitment to professional as well as to personal growth. In addition to practicing technical skills, physicians should cultivate the ability to expand and apply those skills in a variety of settings. As such, knowledge of ethical principles, communication skills, and the ability to acquire and continually update information are important components of professional development. The Accreditation Council on Graduate Medical Education (ACGME) has identified six core competencies for incorporation into all resident training programs. These competencies, as they apply to the training of residents in obstetrics and gynecology, are summarized as follows in the form of performance-based learning objectives.

I. PATIENT CARE

Residents must be able to provide care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. Residents are expected to do the following:

- A. Demonstrate caring and respectful behaviors when interacting with patients and their families. (PC, P, ICS)
- B. Gather essential information about patients by performing a complete and accurate medical history and physical examination. (PC, ICS, MK)

- C. Make informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence, and clinical judgment. (PC, PBLI, MK)
- D. Develop, negotiate, and implement effective patient management plans. (PC, ICS, P, SBP)
- E. Counsel and educate patients and their families. (PC, PBLI, ICS, P, MK)
- F. Use information technology to support patient care decisions and patient education. (PC, PBLI, SBP)
- G. Perform competently all medical and invasive procedures considered essential for generalist practice in the discipline of obstetrics and gynecology. (PC, MK)
- H. Understand the differences between screening and diagnostic tests essential for generalist practice in obstetrics and gynecology. (PC, MK)
- I. Provide health care services aimed at preventing health problems or maintaining health. (PC, SBP, PBLI)
- J. Work with health care professionals, including those from other disciplines, to provide patient-focused care. (PC, SBP, P, ICS)

II. MEDICAL KNOWLEDGE

Residents must demonstrate knowledge about established and evolving biomedical, clinical, and cognitive (eg, epidemiologic and social-behavior) sciences and apply this knowledge to patient care. Residents are expected to do the following:

- A. Demonstrate an investigative and analytic thinking approach to clinical situations. (MK, PBLI)
- B. Demonstrate a sound understanding of the basic science background of women's health and apply this knowledge to clinical problem solving, clinical decision making, and critical thinking. (MK, PBLI, PC, SBP)

III. INTERPERSONAL AND COMMUNICATION SKILLS

Residents must be able to demonstrate interpersonal and communication skills that assist in effective information exchange and be able

to team with patients, patients' families, and professional associates. Residents are expected to do the following:

- A. Sustain therapeutic and ethically sound relationships with patients, patients' families, and colleagues. (ICS, P)
- B. Provide effective and professional consultation to other physicians and health care professionals. (ICS, P, SBP, MK, PBLI)
- C. Obtain and provide information using effective listening, nonverbal, explanatory, questioning, and writing skills. (ICS, P)
- D. Communicate effectively with patients in language that is appropriate for their ages and educational, cultural, and socioeconomic backgrounds. (ICS, P, PC)
- E. Maintain comprehensive, timely, and legible medical records. (ICS, P, PC)
- F. Communicate effectively with others as a member or leader of a health care team or other professional group. (ICS, SBP, P)

IV. PROFESSIONALISM

Residents must demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse population. Residents are expected to do the following:

- A. Demonstrate respect, compassion, integrity, and responsiveness to the needs of patients and society that supersedes self-interest. (P, ICS)
- B. Demonstrate accountability to patients, society, and the profession.
 - 1. Demonstrate uncompromised honesty. (P, ICS)
 - 2. Develop and maintain habits of punctuality and efficiency. (P)
 - 3. Maintain a good work ethic (ie, positive attitude and high level of initiative). (P)
- C. Demonstrate a commitment to excellence and ongoing professional development. (P, PBLI)
- D. Demonstrate a commitment to ethical principles pertaining to the provision or withholding of clinical care. (P, PC)
- E. Describe basic ethical concepts, such as autonomy, beneficence, justice, and nonmaleficence. (P, ICS)

- F. Describe the process of informed health care decision making, including the elements that must exist and the specific components of an informed-consent discussion. (P, ICS, PC)
- G. Demonstrate an understanding of the use of advanced directives, living wills, and durable power of attorney for health care and strategies for the resolution of ethical conflicts. (P, PC)
- H. Describe surrogate decision making for incapacitated patients, including who can act and should act as a proxy decision maker and what standards they should use to make health care choices for another. (P, PC, ICS)
- I. Examine their personal values and preferences for end-of-life treatment and the values of diverse patients. (P, PBLI)
- J. Differentiate between institution-based “do not resuscitate” (DNR) orders, community-based DNR orders (also called out-of-hospital or portable DNR orders), and advance directives. Describe the legal, ethical, and emotional issues surrounding withholding and withdrawing medical therapies. (P, MK, SBP, PC)
- K. Describe when it is appropriate to use all available technology to sustain a life and when it is appropriate to limit treatment. (P, ICS, SBP, PC)
- L. Describe the principle of justice and the use of limited medical resources. (P, MK)
- M. Describe the differences in ethical decision making if the patient is an adult or a child. (P, PC)
- N. Describe ethical implications of commonly used obstetric and gynecologic technologies. (P, MK, SBP, PC)
- O. Analyze an ethical conflict and develop a course of action that is ethically defensible and medically reasonable. (P, PC, MK, ICS)
- P. Describe important issues regarding stress management, substance abuse, and sleep deprivation.
 - 1. List preventive stress-reduction activities and describe the value of these activities. (P, MK)
 - 2. Identify the warning signs of excessive stress or substance abuse within themselves and in others. (P, MK, ICS)

3. Intervene promptly when evidence of excessive stress or substance abuse is exhibited by themselves, family members, or professional colleagues. (P, ICS, MK, PC)
 4. Understand the signs of sleep deprivation and intervene promptly when they are exhibited by themselves or professional colleagues. (P, MK, PC, ICS)
- Q. Maintain confidentiality of patient information.
1. Describe current standards for the protection of health-related patient information. (P, SBP, ICS)
 2. List potential sources of loss of privacy in the health care system. (P, SBP)
- R. Demonstrate sensitivity and responsiveness to the culture, ages, sexual preferences, behaviors, socioeconomic status, beliefs, and disabilities of patients and professional colleagues. (P, ICS)
- S. Describe the procedure for and the significance of maintaining medical licensure, board certification, credentialing, hospital staff privileges, and liability insurance. (P, SBP, ICS)

V. PRACTICE-BASED LEARNING AND IMPROVEMENT

Residents must be able to use scientific evidence and methods to investigate, evaluate, and improve patient care practices.

- A. Identify areas for personal and practice improvement and implement strategies to enhance knowledge, skills, attitudes, and processes of care, as well as making a commitment to life-long learning. (MK, P, SBP, PBLI)
- B. Analyze and evaluate personal practice experience and implement strategies to continually improve the quality of patient care provided using a systematic methodology. (PBLI, SBP, P, MK, PC)
- C. Locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems. (PBLI, MK, PC)
- D. Obtain and use information about their population of patients and the larger population from which their patients are drawn. (PBLI, SBP, PC)

- E. Demonstrate receptiveness to instruction and feedback. (PBLI, ICS, P)
- F. Apply knowledge of study designs and statistical methods to the appraisal of clinical studies and other information on diagnostic and therapeutic effectiveness. (PBLI, MK, PC)
- G. Use information technology to manage information, access online medical information, and support their education. (PBLI, P, MK)
- H. Facilitate the learning process for students and other health care professionals. (PBLI, ICS, SBP, MK)

VI. SYSTEMS-BASED PRACTICE

Residents must 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. Residents are expected to do the following:

- A. Understand how their patient care and other professional practices affect other health care professionals, the health care organization, and the larger society, and how these elements of the system affect their practices.
- B. Understand the processes for obtaining licensure, receiving hospital privileges, and credentialing. (SBP, PC, P, ICS)
- C. Describe how types of medical practice and delivery systems differ from one another, including methods of controlling health care costs and allocating resources. (SBP, ICS, PC)
 - 1. List common systems of health care delivery, including various practice models. (SBP, PC)
 - 2. Describe common methods of health care financing. (SBP, PC)
 - 3. Describe common business issues essential to running a medical practice. (SBP, P, ICS)
 - 4. Apply current procedural and diagnostic codes to reimbursement requests. (SBP, PC, ICS)
- D. Practice cost-effective health care and resource allocation that do not compromise quality of care. (SBP, PC, P)

- E. Advocate for the patient, women's health, and the profession of obstetrics and gynecology. (SBP, ICS, P)
 - 1. Recognize that social, economic, and political factors are powerful determinants of health and the delivery of health care.
 - 2. Demonstrate knowledge of disparities in health and health care in a variety of populations and exhibit cultural competency in health care delivery.
 - 3. Recognize the role of the women's health care provider to advocate for patient populations and the individual patient, particularly poor and vulnerable women, and help develop methods of care that are effective, efficient, and accessible to all women.
 - 4. Use the American College of Obstetricians and Gynecologists' resources and other resources to advocate on behalf of underserved and vulnerable populations.
 - 5. Learn to communicate effectively about women's health concerns to the public.
 - 6. Recognize the role of the physician in legislative activities as they relate to women's health policy.
 - 7. Work with the American College of Obstetricians and Gynecologists and other professional societies to advocate for physicians and the sustainability of the practice and profession of obstetrics and gynecology.
- F. Acknowledge that patient safety is always the first concern of the physician.
 - 1. Demonstrate the ability to discuss errors in management with peers and patients to improve patient safety. (SBP, ICS, P, PBLI)
 - 2. Develop and maintain a willingness to learn from errors and use errors to improve the system or process of care. (SBP, P, ICS, PBLI, PC, MK)
 - 3. Participate in hospital/departmental quality improvement activities and patient safety initiatives (SBP, P, PBLI, ICS)
 - 4. Recognize the value of input from all members of the health care team and methods by which to facilitate communication among team members. (SBP, ICS, P, PC, PBLI)

5. Demonstrate understanding of institutional disclosure processes and participate in disclosure and discussions of adverse events with patients. (SBP, ICS, P, PC)
- G. Partner with health care managers and health care providers to assess, coordinate, and improve health care and know how these activities can affect system performance. (P, ICS, PC, PBLI)
1. Describe the process of quality assessment and improvement, including the role of clinical indicators, criteria sets, and utilization review. (SBP, ICS, P, PC)
 2. Participate in organized peer-review activities and use outcomes of such reviews to improve personal and system-wide practice patterns. (SBP, P, ICS, PBLI, PC)
 3. Demonstrate an ability to cooperate with other medical personnel to correct system problems and improve patient care. (SBP, P, ICS, PC, PBLI)
- H. Understand risk management and professional liability.
1. List the major types and providers of insurance. (SBP)
 2. Describe the most common reasons for professional liability claims. (SBP, P, ICS)
 3. Describe a systematic plan for minimizing the risk of professional liability claims in clinical practice. (SBP, PC, P, ICS)
 4. Describe basic medical–legal concepts regarding a professional liability claim and list the steps in processing a claim. (SBP, P, ICS)

Unit 2

PRIMARY AND PREVENTIVE AMBULATORY HEALTH CARE

Obstetrician–gynecologists provide primary health care services to their patients both within and outside the traditional purview of reproductive medicine. As primary care physicians, obstetrician–gynecologists establish relationships with their patients that transcend the disease spectrum and extend to routine assessments, preventive care, early intervention, and management of medical disorders. Periodic assessments provide an excellent opportunity to counsel patients about preventive care. These assessments should include screening, evaluation, and counseling based on age and risk factors. As the major providers of reproductive health care for women, obstetrician–gynecologists are responsible for all aspects of care of reproductive disorders. Both the role of primary care physician and the role of reproductive health care provider require specialized skills and training. These skills should be recognized as essential components in the practice of obstetrics and gynecology in that they not only provide care for their patients, but may serve as the gateway to health care for their patients’ significant other(s). Even when certain disorders extend beyond the scope of their practices and require referral, obstetrician–gynecologists serve in a consultant capacity in which they are involved in the continuing health maintenance of their patients.

I. PERIODIC HEALTH ASSESSMENTS ↩

A. Perform initial assessment

To gain the patient’s confidence and cooperation in obtaining the history and performing the physical examination, residents should appreciate the effects of age; race; ethnic and cultural backgrounds;

sexual orientation; lifestyle; personality; mental status; health care literacy; and the patient's level of comfort and modesty. (PBLI, P)

1. Obtain a complete medical history, including a history of genetic diseases. (PC, ICS, P)
2. Perform an appropriate general or focused physical examination. (PC, P)
3. Develop and communicate an ongoing management plan for the patient's needs or concerns (PC, P, MK, ICS)

B. Perform routine screening for selected diseases

Major causes of morbidity and mortality by age can direct attention to areas that warrant special care. The content and frequency of routine health examinations for screening and counseling should be tailored to risk factors and the patient's age using the following periodic assessments. (PC, MK, P)

1. *Ages 12 years and younger*

For the preadolescent patient, the obstetrician–gynecologist usually serves as a consultant. Primary care can be performed by a pediatrician or family physician after assessment of the specific problem for which the patient was referred. (PC)

Specific objectives for the obstetrician–gynecologist in this patient population are found in Unit 5, II-A, “[Pediatric gynecology \(birth to menarche\)](#).”

2. *Ages 13–18 years* ↩

For adolescents, the obstetrician–gynecologist serves either as a consultant or as a primary health care provider, depending on the nature of his or her practice and level of expertise in the spectrum of reproductive tract disorders. (These disorders are described in Unit 5, II-D, “[Adolescent gynecology](#).”) The following areas warrant special attention in this age group:

- a. Assess patients for evidence of substance use (tobacco, alcohol, and other drugs). (PC, ICS, P)
- b. Assess sexual health concerns, such as the following: (P, PC, MK)
 - (1) Conception
 - (2) Prevention of sexually transmitted infections (STIs)

- (3) Pregnancy issues
- (4) Noncoital sexual activity
- (5) Sexual orientation
- c. Test sexually active adolescents for STIs, such as the following: (PC, P)
 - (1) Gonorrhea
 - (2) Chlamydia
 - (3) Syphilis
 - (4) Hepatitis B
 - (5) Human immunodeficiency virus (HIV) infection
 - (6) Herpes simplex virus
- d. Counsel adolescents about behavior and personal safety, such as the following: (PC, ICS, P)
 - (1) Bicycle helmets
 - (2) Automobile safety belts
 - (3) Sporting equipment and apparel
 - (4) Weapon safety
 - (5) Inappropriate sexual contact
 - (6) Appropriate use of social media
- e. Evaluate psychosocial well-being, including issues regarding abuse. (PC, ICS, P)
 - (1) Promote confidentiality in health care relationships
 - (2) Facilitate the parent–child relationship
- f. Assess nutritional and growth status and level of physical activity. (PC, P)
- g. Offer vaccinations against the following: Human papillomavirus; influenza; tetanus, diphtheria, and pertussis; measles, mumps, and rubella; hepatitis B; varicella; and meningitis. (PC, P)

3. *Ages 19–39 years*

The obstetrician–gynecologist usually is the chief health care provider for women aged 19–39 years and provides both specialist care in obstetrics and gynecology and primary preventive

health care. The following areas warrant special attention in this age group:

- a. Describe normal reproductive physiology, including issues such as fecundity and sexual health. (MK, P)
- b. Assess reproductive concerns, such as the following: (P, PC, MK)
 - (1) Family planning and preconception care
 - (2) Prevention of STIs
 - (3) Pregnancy and postpartum care
 - (4) Infertility
 - (5) Sexuality and sexual activity
 - (6) Breast care
- c. Treat menstrual disorders, such as the following: (PC, MK, P)
 - (1) Amenorrhea
 - (2) Oligomenorrhea
 - (3) Abnormal uterine bleeding
- d. Evaluate and manage breast disorders, such as the following: (PC, MK)
 - (1) Mastitis
 - (2) Galactorrhea
 - (3) Mastodynia
 - (4) Breast masses
- e. Evaluate psychosocial well-being, including issues regarding abuse. (PC, ICS, P)
- f. Describe the principal reproductive health care issues of women with developmental delay and physical disabilities. (MK)
- g. Counsel adolescents about behavior and personal safety (PC, ICS, P)
- h. Offer appropriate vaccinations (PC, MK)
- i. Assess nutritional status and level of physical activity. (PC, P)

4. *Ages 40–64 years*

Women aged 40–64 years are in a time of transition and may face reproductive and perimenopausal concerns, medical conditions, and psychosocial issues. The following areas warrant special attention in this age group:

- a. Assess and manage reproductive concerns, such as the following: (PC, MK, P)
 - (1) Family planning until menopause
 - (2) Prevention of STIs
 - (3) Pregnancy care (eg, offering genetic counseling/prenatal diagnosis with amniocentesis or chorionic villus sampling)
 - (4) Infertility
- b. Evaluate and treat perimenopause/menopause concerns. (PC, MK, P)
 - (1) Normal aging, lifestyle modifications, and hormone therapy
 - (2) Risk factors for and prevention of osteoporosis
- c. Assess cancer risks (eg, lung, breast, endometrium, ovary, colon, and skin) (PC, MK, P)
- d. Evaluate psychosocial risks and well-being, including issues of abuse, depression and anxiety. (PC, ICS, P)
- e. List the major risk factors for cardiovascular disease. (MK)
- f. Assess cancer risks (eg, lung, breast, endometrium, ovary, colon, and skin). (PC, MK)
- g. Describe the appropriate assessment for urinary and fecal incontinence. (PC, MK)
- h. Offer appropriate vaccinations (PC, MK)
- i. Assess nutritional status and level of physical activity. (PC, P)

5. *Ages 65 years and older*

The goal of health maintenance in women 65 years and older is improvement of the quality of life and prolongation of a disease-free state. The following areas warrant special attention in these patients:

- a. Describe the biologic effect of aging on major organ systems. (MK)

- b. Describe the psychologic problems that may be associated with aging, such as the following: (MK)
 - (1) Depression
 - (2) Emotional abuse or neglect
 - (3) Change in sexual function
- c. Describe the appropriate interventions to prevent fractures in women. (MK)
- d. Describe the appropriate assessment for urinary and fecal incontinence. (MK)
- e. List the major risk factors for cardiovascular disease. (MK)
- f. Assess cancer risks (eg, lung, breast, endometrium, ovary, colon, and skin). (PC, MK)
- g. Describe the altered pharmacokinetics of drugs in the elderly population and the likelihood of drug interactions with medications commonly prescribed in this age group. (MK)
- h. List the drugs that most commonly cause adverse reactions in elderly patients. (MK)
- i. Summarize age-related changes in common laboratory values. (MK)
- j. Offer appropriate vaccinations (PC, MK)
- k. Assess nutritional status and level of physical activity. (PC, MK)
- l. Perform a basic assessment of functional status, including the following: (PC, MK, P)
 - (1) Activities of daily living
 - (2) Mini-mental status examination, including assessment for dementia
 - (3) Capacity for independent decision making

C. Counsel patients

Counseling encourages patients to adopt healthy behavior and to seek regular preventive care that may reduce the prevalence of disorders later in life. The obstetrician–gynecologist is in a position to evaluate the patient’s general health and to counsel her regarding general health risk behavior. Patients should be counseled about

high-risk behavior and health maintenance behavior at least annually. Counseling should include factors such as the following: (PC, ICS, MK, P)

1. The importance of a healthy diet and exercise
2. Risk factors and health problems associated with substance abuse
3. Weight management
4. Contraception
5. Prevention of STIs
6. Prevention of accidents in the home and workplace
7. Preserving good dental health, such as regular tooth brushing and flossing and regular dental appointments
8. Psychosocial issues
9. Prevention of osteopenia and osteoporosis
10. Sexual health and well-being

D. Provide immunizations (PC, MK)

Describe the appropriate indications and schedule for selective immunizations for human papillomavirus; rubella; measles; meningitis; varicella; hepatitis A and hepatitis B; influenza; pneumococcal pneumonia; tetanus, diphtheria, and pertussis; and herpes zoster.

II. FOCUSED AREAS IN GYNECOLOGIC CARE

A. Contraception

The obstetrician–gynecologist is in a unique position to serve as a resource person for the community or the individual regarding sexual health, family planning and/or contraception. On the community level, the obstetrician–gynecologist should be able to speak to any audience on the subject of birth control. He or she should be able to discuss the cultural, societal, ethical, and religious implications of contraceptives as well as describe their effectiveness, medical benefits, and adverse effects. (P, PC, MK, ICS, PBLI)

1. Define the following terms: method effectiveness and user effectiveness. (MK)

2. Describe national and local policies that affect control of reproduction. (MK, SBP)
3. Describe how religious, ethical, and cultural differences affect health care providers and users of contraception. (PBLI)
4. Describe the effect of contraception on population growth in the United States and other nations. (MK, SBP)
5. Describe the factors that influence the individual patient's choice of contraception. (MK, PBLI)
6. Obtain a pertinent history from a patient requesting information about contraception. (PC, ICS, P)
7. Perform a focused physical examination to detect findings that might influence the choice of contraception. (P, PC)
8. Interpret the results of selected laboratory tests that might influence a patient's choice of contraception. (MK)
9. Describe the advantages, disadvantages, failure rates, mechanisms of action and complications associated with the following methods of contraception: (MK)
 - a. Sterilization
 - b. Oral steroid contraception
 - c. Transdermal steroid contraception
 - d. Vaginal steroid contraception
 - e. Injectable steroid contraception
 - f. Implantable steroid contraception
 - g. Intrauterine devices
 - h. Barrier methods
 - i. Natural family planning
 - j. Abstinence
10. Describe the pharmacology of hormonal contraception. (MK)
11. Describe appropriate methods for postcoital contraception. (MK)
12. Describe the appropriate follow-up for a woman using any of the aforementioned methods of contraception. (MK)

B. Induced abortion

Residents should be able to counsel pregnant patients on alternatives available to them, including induced abortion and adoption. Residents who decide not to provide this service because of a moral objection still should be able to counsel patients, make appropriate referrals, and manage postabortal complications. (PC, ICS, PBLI, P)

1. Obtain a pertinent history from a patient requesting an induced abortion. (ICS, P)
2. Perform a targeted physical examination to confirm the presence of an intrauterine pregnancy, accurately determine gestational age, and identify other abnormal physical findings that may influence the choice of abortion method. (PC, P)
3. Order and interpret selected laboratory tests in patients requesting induced abortion. (PC)
4. Describe the principal techniques for pregnancy termination, such as the following: (PC, MK, P)
 - a. Suction curettage
 - b. Dilation and evacuation
 - c. Medical abortion
 - d. Induction termination
5. Describe and treat the principal complications of induced abortion. (PC, MK, P)
6. Perform postprocedure care and counseling
7. Describe the possible psychologic aftermath of induced abortion. (PC, MK, P)

C. Sexual health

The obstetrician–gynecologist should understand the concepts of sexual development and identity. The practitioner also should understand the ways in which a patient’s sexuality may be altered by physical or psychological conditions, including menopause and advancing age. The obstetrician–gynecologist should be familiar and comfortable with the terminology used in sexual counseling and should understand the range of sexual function disorders. (PC, ICS, PBLI)

1. Describe stages of sexual response: desire, arousal, orgasm, resolution, and refractory period. (MK)
2. Describe the principal disorders of sexual function, including the following: (PC, MK)
 - a. Hypoactive sexual desire disorder
 - b. Female sexual arousal disorder
 - c. Sexual aversion disorder
 - d. Female orgasmic disorder
 - e. Pelvic pain disorders, including vaginismus and dyspareunia
3. Obtain a complete sexual history. (PC, ICS)
 - a. Sexual activity and masturbation
 - b. Use of devices and appliances (including storage)
4. Perform a targeted physical examination to evaluate sexual dysfunction. (PC)
5. Describe possible interventions for patients with disorders of sexual function. (PC, MK)
6. Be able to discuss common sexual concerns with patients with understanding of their backgrounds, religious/moral beliefs, ages, and social situations. (PC, ICS, P)
7. Understand the effects of age and menopause on sexual function, and be able to discuss these effects with patients. (PC, P)
8. Know the effects of common medications and substances, such as the following, on sexual function: (MK)
 - a. Contraceptives
 - b. Antidepressants and antipsychotics
 - c. Antihypertensives
 - d. Antiepileptics
 - e. Alcohol
 - f. Illicit drugs (eg, cocaine, marijuana, narcotics)
9. Describe the appropriate long-term follow-up for patients with disorders of sexual function. (PC)

D. Lesbian health

The obstetrician–gynecologist should be sensitive and knowledgeable regarding methods to promote health for lesbians. (PBLI, P)

1. Display sensitivity to sexual orientation and describe ways to promote an office environment that is respectful of a patient's sexuality. (PBLI, P)
2. Describe health risks that may be higher or lower in the lesbian population, and conduct appropriate health screening for lesbian patients. (PC, MK, P)
3. Address reproductive concerns and options. (PC, ICS, MK, P)

E. Transgender health

The obstetrician–gynecologist should be sensitive and knowledgeable regarding methods to promote health for transgender women. (PBLI, P)

1. Display sensitivity to gender identity and describe ways to promote an office environment that is respectful of a patient's gender identity. (PBLI, P)
2. Describe health risks that may be higher or lower in the transgender population and conduct appropriate health screening for transgender patients. (PC, MK, P)
3. Describe the various surgical procedures that might be requested by a transgender patient. (MK)
4. Refer, when appropriate, to specialists, such as reproductive endocrinologists, urologists, and urogynecologists. (PC, P)

F. Crisis intervention

The obstetrician–gynecologist should be able to identify an abused woman, provide immediate medical evaluation and treatment for her and, if indicated, assist with referrals for legal assistance and psychologic counseling. (PC, ICS, SBP, P)

1. Describe the principal types of violence against women of all ages:
 - a. Incest
 - b. Rape

- c. Physical abuse
 - d. Psychologic abuse
2. Obtain a pertinent history from a possible victim of physical, psychologic, or sexual abuse. (PC, ICS, P)
 3. Perform a focused mental status examination and physical examination to detect findings of physical, psychologic, or sexual abuse. (PC, P)
 4. Describe the appropriate legal safeguards that must be observed in evaluating a victim of abuse, such as maintaining the proper chain of evidence in handling laboratory specimens and reporting the crime to the appropriate authorities. (SBP)
 5. Perform or order selected laboratory tests to evaluate a victim of abuse. (PC, P)
 6. Provide immediate treatment for the victim of abuse: (PC, P)
 - a. Prophylaxis for STIs
 - b. Postcoital contraception
 7. Provide appropriate follow-up care and referrals for victims of abuse. (PC, SBP, P)
 8. Assess a patient's environment for safety and possible placement (PC, ICS, P)

III. MANAGEMENT OF NONGYNECOLOGIC CONDITIONS

Many nongynecologic conditions can be managed effectively with a team approach in which the obstetrician–gynecologist plays a key role. The obstetrician–gynecologist is encouraged to develop collaborative relationships with other specialists to allow timely referrals as well as to enhance clinical skills. Residents must be able to diagnose and treat many uncomplicated nongynecologic conditions and know when and to whom patients should be referred. (PC, SBP, P)

A. Allergic rhinitis

1. Describe the signs and symptoms of allergic rhinitis. (MK)
2. Obtain a history and perform a targeted physical examination to diagnose allergic rhinitis. (PC, ICS, P)

3. Describe the differential diagnosis of allergic rhinitis. (MK)
4. Counsel patients about the effect of environmental allergens and initiate basic medical treatment for allergic rhinitis. (P, PC, ICS)

B. Respiratory tract infection

1. Describe the differential diagnosis of respiratory tract infection. (MK)
2. Obtain a pertinent history in a patient with suspected respiratory tract infection. (PC, ICS)
3. Describe the usual signs and symptoms of respiratory tract infection. (MK)
4. Perform a targeted physical examination to diagnose respiratory tract infection. (PC, P)
5. Interpret the results of selected tests, such as the following, to diagnose respiratory tract infection: (PC, MK)
 - a. Chest X-ray
 - b. Tuberculin skin test
6. Treat uncomplicated respiratory tract infection.
7. Describe the indications for referral of a patient with a more severe respiratory tract infection.

C. Asthma

1. Obtain a pertinent history from a patient with asthma. (PC, ICS, P)
2. Perform a targeted physical examination to detect findings associated with asthma. (PC, P)
3. Interpret the results of basic pulmonary function tests, such as forced expiratory volume in 1 second (FEV_1). (MK)
4. Describe the differential diagnosis of asthma. (MK)
5. Treat mild asthma with appropriate medications. (PC)
6. Describe the indications for referral of a patient with more severe asthma. (PC, MK, SBP)

D. Hypertension

1. Describe the criteria for the diagnosis of hypertension. (MK)
2. Describe the major causes of hypertension. (MK)
3. Describe the long-term consequences of untreated hypertension. (MK)
4. Describe the principal symptoms of hypertension. (MK)
5. Initiate a treatment plan for mild hypertension. (PC)
6. Describe the indications for referral of a patient with hypertension. (PC, SBP)

E. Abdominal pain

1. Obtain a pertinent history in a patient with abdominal pain. (PC, ICS, P)
2. Perform a targeted physical examination to evaluate a patient with abdominal pain. (PC, P)
3. Describe the differential diagnosis of abdominal pain. (MK)
4. Interpret the results of selected laboratory, radiologic, and endoscopic tests to determine the etiology of abdominal pain. (PC, MK)
5. Treat selected patients with abdominal pain, and describe the indications for referral. (PC, SBP)

F. Gastrointestinal disorders

1. Describe the signs and symptoms of common gastrointestinal disorders, such as the following: (PC, MK)
 - a. Acute diarrhea
 - b. Constipation
 - c. Diverticulosis/diverticulitis
 - d. Gastroenteritis
 - e. Gastroesophageal reflux
 - f. Irritable bowel syndrome

2. Obtain a pertinent history and perform a targeted physical examination to evaluate a patient with gastrointestinal symptoms. (PC, ICS, P)
3. Interpret the results of selected laboratory, radiologic, and endoscopic tests to determine the etiology of a patient's gastrointestinal symptoms. (PC, MK)
4. Treat selected patients with gastrointestinal disorders and describe the indications for referral. (PC, SBP)

G. Urinary tract disorders

Residents should understand the treatment of acute urethritis, acute cystitis, acute pyelonephritis, and ureteral calculi. Learning objectives for the management of conditions affecting the urinary system are found in Unit 4, [Gynecology](#). (PC, MK)

H. Headache

1. Describe the principal causes of headaches, including migraine, tension, stress, sinus and intracranial lesions. (MK)
2. Obtain a pertinent history and perform a focused physical examination to evaluate a patient with headaches. (PC, ICS, P)
3. Treat muscle tension headaches, mild migraines, and menstrual migraines. (PC)
4. Describe indications for referral of patients with unusual/severe headaches. (PC, SBP)

I. Depression

1. Describe risk factors for depression. (MK)
2. Describe the signs and symptoms of depression. (PC, MK)
3. Describe the differential diagnosis of depression. (MK)
4. Describe the use and interpretation of screening instruments for the identification of depression. (PC, MK)
5. Obtain a pertinent history from a patient with signs of depression. (PC, ICS, P)

6. Identify patients at risk of suicide or other harmful acts. (PC, MK, P)
7. Treat depression with interventions, such as administration of antidepressants or referral for counseling. (PC, SBP)

J. Premenstrual syndrome and premenstrual dysphoric disorder ↩

1. Define premenstrual symptoms, premenstrual syndrome (PMS), and premenstrual dysphoric disorder (PMDD). (MK)
2. Describe the signs and symptoms of PMS/PMDD. (PC, MK)
3. Describe the differential diagnosis of PMS/PMDD. (MK)
4. Describe the relevance of a symptom diary in the diagnosis of PMS/PMDD. (PC, MK)
5. Obtain a pertinent history from a patient with signs of PMS/PMDD. (PC, ICS, P)
6. Treat PMS/PMDD with interventions, such as lifestyle changes, supplements, nonprescription analgesics, and prescription medications. (PC)

K. Anxiety

1. Describe the differential diagnosis of patients with an apparent anxiety disorder. (MK)
2. Obtain a pertinent history for a patient with signs of an anxiety disorder. (PC, ICS, P)
3. Treat mild anxiety with interventions, such as administration of anxiolytic agents or referral for counseling. (PC, SBP)

L. Skin disorders

Involvement of obvious gynecologic epithelial surfaces is covered in Unit 4, Gynecology.

1. Obtain a history relevant to dermatologic risk factors: (PC, ICS, P)
 - a. Environmental exposure to ultraviolet light
 - b. Personal and hygienic habits predisposing to skin lesions

2. Perform a physical examination of all areas of skin, including those susceptible to chronic exposure to ultraviolet light. (PC, P)
3. Perform a skin biopsy and interpret the results of the biopsy. (PC, MK)
4. Treat selected dermatologic conditions, such as the following: (PC)
 - a. Uncomplicated sunburn
 - b. Uncomplicated irritative or inflammatory skin disorders
 - c. Poison ivy, oak, or sumac
 - d. Contact dermatitis
 - e. Insect bites
 - f. Fungal dermatitis
 - g. Eczematous lesions
 - h. Mild acne
5. Describe the characteristic physical findings of basal cell carcinoma, squamous cell carcinoma, melanoma, and Paget disease. (PC, MK)
6. Describe skin conditions that may be manifestations of significant systemic diseases. (MK)
7. Describe the indications for referral of patients with skin disorders. (PC, SBP)

M. Diabetes

1. Describe classification of diabetes, including prediabetes, type 1, type 2, and gestational. (MK)
2. Describe risk factors for diabetes. (PC, MK)
3. Describe signs and symptoms of diabetes. (PC, MK)
4. Obtain a pertinent history in a patient with suspected diabetes. (PC, ICS, P)
5. Describe the criteria for the diagnosis of diabetes. (MK)
6. Describe the use of diet, oral hypoglycemic agents, and insulin for treatment of diabetes. (PC, MK)

7. Assess glycemic control by laboratory studies. (PC)
8. Describe indications for referral of patients with diabetes. (PC, SBP)

N. Thyroid diseases

1. Describe the most common causes of hypothyroidism and hyperthyroidism. (MK)
2. Describe the most common signs and symptoms of hypothyroidism and hyperthyroidism. (PC, MK)
3. Obtain a pertinent history and perform a targeted physical examination to evaluate thyroid disease, including thyroid cancer, benign nodules, and hypothyroidism or hyperthyroidism. (PC, ICS, P)
4. Interpret the results of selected diagnostic tests to confirm the diagnosis of hypothyroidism or hyperthyroidism. (PC, MK)
5. Describe the indications for referral of a patient with thyroid disease. (PC, SBP)

O. Low back pain

1. Describe the differential diagnosis of low back pain. (MK)
2. Obtain a pertinent history in a patient with low back pain. (PC, ICS, P)
3. Perform a targeted physical examination to evaluate low back pain symptoms and to evaluate possible gynecologic causes. (PC)
4. Describe indications for referral of patients with more severe low back pain. (PC, SBP)

P. Osteoporosis

1. Describe risk factors for osteoporosis. (MK)
2. Describe the use and interpretation of screening tests for the identification of osteoporosis. (PC, MK)
3. Describe the evaluation of secondary causes of osteoporosis. (MK)

4. List preventive measures for osteoporotic bone loss and fracture. (MK)
5. Treat osteoporosis and provide appropriate follow-up care. (PC, SBP)

Q. Overweight and obesity

1. Define overweight and obesity. (MK)
2. Calculate a patient's body mass index using her height and weight. (MK, PC)
3. Discuss overweight and obesity in a culturally sensitive manner. (ICS, PC, P)
4. Obtain a pertinent history from a patient who is overweight or obese. (PC, ICS, P)
5. Describe the gynecologic effect of being overweight or obese. (MK)
6. Educate patients regarding medical and surgical options for weight loss. (MK, PC, ICS, SBP)
7. Promote regular physical activity. (PC, ICS)

R. Arthritis and joint disorders

1. Know the common disorders that affect joints, including the following: (MK)
 - a. Childhood arthritis
 - b. Fibromyalgia
 - c. Gout
 - d. Lupus
 - e. Osteoarthritis
 - f. Rheumatoid arthritis
2. Recognize arthritis as a public health problem. (MK, SBP)
3. Provide early diagnosis and appropriate management, including consultation/referral to a specialist. (PC, SBP)
4. Counsel patients regarding joint-related disorders. (PC, ICS)

PROCEDURES

The following table lists the procedures pertinent to primary and preventive ambulatory care and summarizes the level of technical proficiency that should be achieved by graduating residents. Residents should either understand a procedure (including indications, contraindications, and principles) or be able to perform it independently. These distinctions are based on the premise that knowledge of a procedure is implicit in the ability to perform it. (PC)

Procedure	Understand	Understand and Perform
Arterial blood gas assessment	X	
Auditory acuity testing	X	
Bone densitometry studies	X	
Complete physical examination		X
Electrocardiography	X	
External auditory canal and tympanic membrane examination		X
Fecal occult blood testing		X
Fitting of diaphragm or cervical cap		X
Funduscopy examination (basic)		X
Gastrointestinal endoscopy	X	
Insertion and removal of implantable steroid contraception		X
Insertion and removal of intrauterine device		X
Peak expiratory flow (FEV ₁) determination	X	
Pulse oximetry		X
Skin biopsy		X
Scraping of skin lesions for microscopy	X	
Visual acuity testing (ie, standard eye chart)	X	
Visual field deficit testing	X	

Unit 3

OBSTETRICS

Obstetrician–gynecologists must be able to recognize the physiologic changes of pregnancy and describe the gross anatomic changes of pregnancy. They must be able to recognize those factors in the history and physical examination that indicate possible medical or obstetric complications. They must understand how to obtain and apply information from the history, physical examination, and diagnostic studies to evaluate the course of pregnancy.

In evaluating patients for preconception care, obstetrician–gynecologists must assess those factors of the history, physical examination, and diagnostic studies that pregnancy would alter; assess the patient’s access to and adherence to a plan of prenatal care; and consult with or refer her to other experts on specific conditions that may arise during the pregnancy.

In the clinical management of a normal term pregnancy, an understanding of the labor and delivery process is mandatory. Obstetrician–gynecologists must be able to determine the correct timing of delivery and perform spontaneous vaginal deliveries, operative vaginal deliveries, as well as abdominal deliveries. The principles and practice of immediate newborn resuscitation remain an important function for the obstetrician and should be taught at the appropriate postgraduate level in conjunction with the obstetrics component of the residency curriculum.

Although obstetric residents are trained to address a variety of normal and complicated obstetric conditions, residents should recognize that additional expertise may be required in certain patients and should refer them to subspecialty-trained physicians as appropriate.

The obstetrician–gynecologist must be familiar with the principles of obstetric anesthesia, including conduction anesthesia, general anesthesia, and local anesthesia techniques. Although the performance of these procedures is

usually the responsibility of attending physicians trained in anesthesia, the obstetrician–gynecologist must be aware of the indications and contraindications for different anesthetic techniques and must be capable of managing anesthetic-related complications, such as hypotension, seizures, and respiratory arrest.

I. BASIC SCIENCE/MECHANISMS OF DISEASE

A. Genetics (See Unit 7, III. “Obstetrics”)

B. Physiology

1. Describe the major physiologic changes in each organ system during pregnancy. (MK)
2. Evaluate symptoms and physical findings in a pregnant patient to distinguish physiologic from pathologic findings. (MK)
3. Interpret common diagnostic tests in the context of the normal physiologic changes of pregnancy. (MK, PC, SBP)

C. Embryology and developmental biology

1. Describe the normal process of gametogenesis. (MK)
2. Describe the normal process of fertilization. (MK)
3. Describe the normal process of embryologic development of the singleton pregnancy. (MK)
4. Describe the embryology of multiple gestations. (MK)

D. Anatomy

1. Describe the muscular, neurologic, and vascular anatomy of the pelvis and vulva. (MK)
2. Describe the anatomic changes in the woman caused by normal physiologic adaptation to pregnancy. (MK)
3. Describe the anatomic changes that occur during the intrapartum period, such as cervical effacement and dilation. (MK)
4. Describe the anatomic changes that occur during the puerperium, such as alterations in the breast and uterine involution. (MK)

E. Pharmacology

1. Describe the role for nutritional supplementation in pregnancy. (MK)
2. Describe the effect of pregnancy on serum and tissue drug concentrations and drug efficacy. (MK)
3. Describe the factors that influence transplacental drug transfer, such as the following: (MK)
 - a. Molecular size
 - b. Lipid solubility
 - c. Degree of ionization at physiologic pH
 - d. Protein binding
4. Describe the possible teratogenic effects of prescription drugs in pregnancy, such as the following: (MK)
 - a. Antibiotics
 - b. Angiotensin-converting enzyme inhibitors and angiotensin antagonists
 - c. Dermatologic agents
 - d. Seizure medications
 - e. Depression, antipsychotics, and anxiolytic medications
5. Describe the possible effects of nonprescription drugs, such as the following: (MK)
 - a. Antiinflammatories/analgesics
 - b. Antihistamines/decongestants
 - c. Vitamins and supplements

F. Pathology and neoplasia

1. Describe symptoms and physical findings suggestive of malignancy in the pregnant patient. (MK)
2. In consultation with a medical or gynecologic oncologist, counsel a patient about treatment options and the effect on pregnancy and the timing of delivery. (PC, ICS, P)
3. Describe the management of adnexal masses in pregnancy. (MK)

G. Microbiology and immunology

1. Describe the principal features of the host immunologic response. (MK)
2. Describe how the maternal immune response is altered by pregnancy. (MK)
3. Describe the basic features and timing of development of the fetal immunologic response. (MK)

II. ANTEPARTUM CARE

A. Preconception care

1. Obtain a thorough history, assessing historical and ongoing risks that may affect future pregnancy. (PC, ICS)
2. Counsel a patient regarding the effect of pregnancy on maternal medical conditions. (PC, MK, ICS, P)
3. Counsel a patient regarding the effect of maternal medical conditions on pregnancy. (PC, MK, ICS, P)
4. Counsel a patient regarding appropriate lifestyle modifications conducive to favorable pregnancy outcome. (PC, MK, ICS, P)
5. Counsel a patient regarding appropriate preconception testing. (SBP)
6. Counsel a patient regarding pregnancy-associated risks of maternal conditions. (MK, ICS, PC, P)

B. Genetic counseling (See Unit 7, III, “[Obstetrics](#)”)

C. Prenatal care

1. Obtain a comprehensive history and perform a physical examination. (ICS)
2. Order and interpret routine laboratory tests and those required because of risk factors during pregnancy. (PC, SBP)
3. Counsel patients about lifestyle modifications that improve pregnancy outcome. (ICS, P)
4. Counsel patients about warning signs of adverse pregnancy events. (ICS, P)

5. Schedule and perform appropriate antepartum follow-up visits for routine and high-risk obstetric care. (PC, PBLI, SBP)
6. Counsel patients about appropriate immunizations during pregnancy. (ICS, SBP)
7. Counsel patients about the benefits of breastfeeding. (ICS, SBP)
8. Counsel patients about guidelines for diet, exercise, weight gain, and weight loss. (ICS, MK, SBP, PC)
9. Understand the effect of family structure, social factors, and economic factors on access to care and pregnancy outcomes. (PC, SBP)

D. Antepartum fetal monitoring ↩

1. Describe the indications, contraindications, advantages, and disadvantages of antepartum diagnostic tests, such as the following: (MK, PC)
 - a. Nonstress test
 - b. Contraction stress test
 - c. Biophysical profile and modified biophysical profile
 - d. Vibroacoustic stimulation test
 - e. Doppler velocimetry
2. Perform and interpret antepartum diagnostic tests accurately and integrate the interpretation of such tests into clinical management algorithms. (MK, PC, SBP)

III. MEDICAL COMPLICATIONS

A. Diabetes mellitus

1. Classify diabetes mellitus in pregnancy. (MK)
2. Order and interpret screening tests for gestational diabetes. (MK, PC, SBP)
3. Monitor and control blood sugar in the pregnant patient with diabetes mellitus. (PC)
4. Assess, recognize, and manage fetal and maternal complications, such as the following: (MK, PC)
 - a. Fetal malformations

- b. Disturbances in fetal growth
- c. Diabetic ketoacidosis
- 5. Describe and assess factors that determine timing and mode of delivery. (PC)
- 6. Counsel patients with diabetes regarding future reproduction and the long-term health implications of their medical condition. (ICS, P, SBP)

B. Diseases of the urinary system

- 1. Evaluate signs and symptoms of urinary tract pathology in pregnant patients. (MK, PC)
- 2. Describe the indications for the common diagnostic tests for renal disease in pregnancy. (PC)
- 3. Interpret the results of common diagnostic tests for renal disease in pregnancy. (MK, PC, SBP)
- 4. Counsel patients about the possible adverse effects of diseases of the urinary tract on fetal and maternal outcome, such as the following: (ICS, P, SBP)
 - a. Intrauterine growth restriction
 - b. Prematurity
 - c. Perinatal mortality
 - d. Hypertension
- 5. Develop, in consultation with other specialists, a comprehensive plan for the perinatal management of a patient with renal disease. (ICS, P, SBP, PBLI)

C. Infectious diseases

- 1. Obtain a focused history and perform a physical examination in pregnant patients who have known or suspected infectious diseases. (PC)
- 2. Choose and perform laboratory tests to confirm the diagnosis of infection. (MK, PC, SBP)
- 3. Assess the severity of a specific infection and its potential maternal, fetal, and neonatal effect. (PC)

4. Describe the possible adverse maternal and fetal effects of antibiotics and antivirals administered during pregnancy. (MK, PC, ICS)
5. Manage specific infections in consultation with other specialists, as indicated. (ICS, P, SBP)

D. Hematologic disorders

1. Evaluate possible causes of anemia, thrombocytopenia, deep vein thrombosis, and coagulopathy in pregnancy. (MK)
2. Institute appropriate acute and chronic management plans for these conditions, including prophylaxis to minimize recurrence risk. (PC, SBP)
3. Counsel patients about the fetal and maternal effect of hematologic disorders in pregnancy. (ICS, P)

E. Cardiopulmonary disease

1. Describe symptoms and physical findings suggestive of cardiopulmonary disease in pregnancy. (MK)
2. Describe the indications for and interpret the results of common diagnostic tests for cardiopulmonary disease in pregnancy. (MK, PC)
3. Classify maternal cardiac disease in pregnancy and describe the associated maternal and fetal risks. (MK)
4. Order appropriate fetal evaluation in patients with congenital heart disease. (MK, PC)
5. Counsel patients about the effect of pregnancy on cardiopulmonary disease and the effect of this disease on pregnancy. (ISC, P)
6. Develop, in consultation with other specialists, a comprehensive plan for the perinatal management of patients with cardiopulmonary disease. (P, SBP)

F. Gastrointestinal disease

1. Obtain a history and perform a physical examination for the diagnosis of gastrointestinal disease in pregnancy. (PC)

2. Describe the indications for and interpret the results of common diagnostic tests for gastrointestinal disease in pregnancy. (MK, PC)
3. Diagnose and provide initial management of common gastrointestinal diseases in pregnancy. (MK, PC)
4. Counsel patients about the effect of gastrointestinal disease on pregnancy and the effect of pregnancy on gastrointestinal disease. (ICS, P)
5. Develop, in consultation with other specialists, a comprehensive plan for the perinatal management of patients with gastrointestinal disease. (P, SBP)

G. Neurologic disease

1. Obtain a focused history and perform a neurologic examination in pregnant patients with a known or suspected neurologic disorder. (PC)
2. Describe the indications for and interpret the results of common diagnostic tests for neurologic disease in pregnancy. (MK, PC)
3. Counsel pregnant patients regarding the effect of pregnancy on neurologic disease and the effect of the disease on pregnancy. (ICS, P)
4. Develop, in consultation with other specialists, a comprehensive plan for the perinatal management of patients with neurologic disease. (P, SBP)

H. Endocrine disorders (excluding diabetes mellitus)

1. Obtain a focused history and perform a physical examination in pregnant patients with a known or suspected endocrine disease. (PC)
2. Describe the indications for and interpret the results of common diagnostic tests for endocrine disease. (MK, PC)
3. Counsel patients about the effect of an endocrine disease and its treatment on pregnancy and the effect of pregnancy on the endocrine disorder. (ICS, P)
4. In consultation with other specialists, develop a comprehensive plan for the perinatal management of patients with an endocrine disorder. (P, SBP)

I. Collagen vascular and autoimmune disorders

1. Obtain a focused history and perform a physical examination in pregnant patients with known or suspected collagen vascular disease. (PC)
2. Describe the indications for and interpret the results of common diagnostic tests for collagen vascular disease in pregnancy. (MK, PC)
3. Counsel patients regarding the effect of collagen vascular disease and its treatment on pregnancy and the effect of pregnancy on collagen vascular disease. (ICS, P)
4. Develop, in consultation with other specialists, a comprehensive plan for the perinatal management of patients with collagen vascular disease. (P, SBP)
5. Counsel patients about the effect of autoimmune diseases on fetal and neonatal outcomes. (ICS, PC)

J. Psychiatric disorders

1. Perform a mental status examination. (PC)
2. Describe the symptoms of common psychiatric disorders in pregnancy. (MK)
3. Assess the risk of psychiatric disorders and the safety of psychiatric medications in the patient and her fetus. (PC, ICS)
4. Identify patients who require referral for psychiatric consultation. (P, SBP)

K. Emergency care during pregnancy

1. Obtain a diagnostic history and perform a physical examination in pregnant patients with a medical or surgical emergency. (PC)
2. Order and interpret diagnostic tests, such as computed tomography or magnetic resonance imaging, lumbar puncture, and X-rays, to assess for adverse effects of emergency conditions on the developing pregnancy. (MK, PC)
3. Initiate therapy, in consultation as necessary, and describe the effect of the condition on the pregnancy as well as the effect of the pregnancy on the emergent condition. (ICS, P)

4. Describe the timing of delivery in obstetric patients with emergent conditions. (MK)
5. Assess and manage a pregnant patient with trauma, including indications for perimortem cesarean delivery. (MK, PC, P)

L. Substance abuse in pregnancy

1. Describe behavior patterns suggestive of substance abuse. (MK)
2. Obtain a thorough history and perform a physical examination in patients suspected of substance abuse in pregnancy. (PC)
3. Counsel patients about the effect of substance abuse on the fetus/neonate. (ICS, P)
4. Assess the fetus for adverse effects of substance abuse, such as congenital anomalies or growth restriction. (MK)
5. Refer patients with known or suspected substance abuse for counseling and follow-up. (P, SBP)

M. Dermatologic conditions in pregnancy

1. Obtain a diagnostic history and perform a physical examination in pregnant patients with a dermatologic problem. (PC)
2. Recognize common skin changes in pregnancy, both physiologic and pathologic. (MK)
3. Order and interpret diagnostic tests to assess dermatologic conditions. (MK, PC)
4. Initiate therapy with consultation as necessary and manage the effect of the condition on pregnancy. (PC, SBP)

IV. OBSTETRIC COMPLICATIONS

A. Second-trimester pregnancy loss

1. Describe the usual symptoms and clinical manifestations of a second-trimester abortion. (MK)
2. Describe the risk factors for and etiologies of second-trimester pregnancy loss. (MK)
3. Perform a physical examination and order diagnostic tests to identify the site of genital tract bleeding, assess cervical effacement and dilation, and evaluate uterine contractions. (PC)

4. Perform diagnostic tests to assess patients with threatened second-trimester pregnancy loss. (PC)
5. Implement appropriate medical and surgical management for patients with threatened second-trimester abortion. (PC)
6. Manage the complications of second-trimester pregnancy loss, such as the following: (MK, PC)
 - a. Chorioamnionitis
 - b. Retained placenta
 - c. Uterine hemorrhage
7. Counsel patients who have experienced second-trimester pregnancy loss about recurrence risk. (ICS, P)

B. Preterm labor

1. Describe the multifactorial etiology of preterm labor. (MK)
2. Obtain a complete obstetric history in patients with preterm labor. (PC)
3. Perform a thorough physical examination to determine uterine size, fetal presentation, and fetal heart rate, and to assess cervical effacement and dilation. (PC)
4. Perform and interpret biophysical, biochemical, ultrasonographic, and microbiologic tests to assess patients with suspected preterm labor. (PC)
5. Recognize the indications for and complications of interventions for preterm labor, such as the following: (MK, PC)
 - a. Antibiotics
 - b. Tocolytics
 - c. Corticosteroids
 - d. Amniocentesis
 - e. Agent for neuroprotection
6. Describe the expected frequency and severity of neonatal complications resulting from preterm delivery, and describe the survival rates for preterm neonates based on age and weight. (MK)

7. Appropriately counsel patients about management options for the extremely premature fetus. (ICS, P)
8. Counsel patients about recurrence risk and preventive measures for preterm delivery. (ICS, P)

C. Bleeding in late pregnancy

1. Describe the etiology of bleeding in late pregnancy. (MK)
2. Describe the factors that predispose to placenta previa and abruptio placentae. (MK)
3. Perform a focused physical examination in patients with bleeding in late pregnancy. (PC)
4. Order and interpret diagnostic tests (MK)
5. Perform the following diagnostic tests: (PC)
 - a. Abdominal ultrasonography to localize the placenta and evaluate for possible placental separation
 - b. Endovaginal or transperineal ultrasonography to localize the placenta
6. Determine the appropriate timing and method of delivery in patients with bleeding in late pregnancy. (MK, PC)
7. Manage serious complications of abruptio placentae and placenta previa, such as hypovolemic shock and coagulopathy. (PC)
8. Counsel patients about the recurrence risk of placenta previa and abruptio placentae. (MK, ICS, P)

D. Hypertension in pregnancy

1. Describe the possible causes of hypertension in pregnancy. (MK)
2. Describe the usual clinical manifestations of chronic hypertension, gestational hypertension, and preeclampsia. (MK)
3. Perform a physical examination pertinent to patients with hypertension. (PC)
4. Perform tests to do the following: (MK, PC)
 - a. Determine the etiology of chronic hypertension.
 - b. Differentiate chronic hypertension from preeclampsia and gestational hypertension.

- c. Assess the severity of chronic hypertension, gestational hypertension, and preeclampsia.
5. Assess fetal well-being in patients with hypertension in pregnancy (see Unit 3, II-D, “[Antepartum fetal monitoring](#)”). (PC)
6. Treat hypertensive disorders of pregnancy. (PC)
7. Recognize and treat possible maternal complications of hypertension in pregnancy, such as the following: (PC)
 - a. Cerebrovascular accident
 - b. Seizure
 - c. Renal failure
 - d. Pulmonary edema
 - e. Hemolysis, elevated liver enzymes, and low platelet count (HELLP) syndrome
 - f. Abruption placentae
8. Describe and assess factors that determine timing and mode of delivery (MK, PC)
9. Counsel patients about recurrence risk of gestational hypertension and preeclampsia in a subsequent pregnancy. (MK, ICS, P)

E. Multiple gestation

1. Describe the factors that predispose to multiple gestation. (MK)
2. Describe the physical findings suggestive of multiple gestation. (MK)
3. Confirm the diagnosis of multiple gestation by performing an endovaginal or abdominal ultrasound examination. (PC)
4. Describe the medical rationale for selective fetal reduction in high-order multiple gestation. (MK)
5. Describe, diagnose, and manage the maternal and fetal complications associated with multiple gestation in diamniotic dichorionic, diamniotic monochorionic, and monoamniotic monochorionic twins. (PC)
6. Perform tests to assess the general well-being of the fetuses of a multiple gestation. (PC)

7. Counsel patients as to the antenatal testing and delivery plans for multiple gestations. (ICS, P, PC)

F. Intrauterine growth restriction

1. Describe the factors that predispose to fetal growth restriction. (MK)
2. Assess uterine size by physical examination and identify size/date discrepancies. (PC)
3. Evaluate the patient for causes of intrauterine growth restriction. (PC)
4. Perform an accurate ultrasound examination to assess fetal growth. (PC)
5. Order and interpret tests to monitor a fetus with suspected growth restriction, and describe and assess factors that determine timing and mode of delivery. (PC)
6. Counsel patients about the recurrence risk of intrauterine growth restriction. (ISC, P)

G. Isoimmunization and alloimmune thrombocytopenia

1. Describe the major antigen–antibody reactions that result in red cell isoimmunization or thrombocytopenia. (MK)
2. Interpret serologic assays that quantify antibody titers. (PC)
3. Describe the appropriate indications for determination of paternal antigen status. (MK)
4. Describe the major fetal complications of isoimmunization and alloimmune thrombocytopenia. (MK)
5. Develop, in consultation with other specialists, a comprehensive plan for the assessment and perinatal management of patients with isoimmunization and alloimmune thrombocytopenia. (P, SBP)

H. Postterm pregnancy

1. Determine gestational age using a combination of menstrual history, physical examination, and ultrasound examination. (MK)

2. Describe the potential fetal and neonatal complications of post-term pregnancy, such as the following: (MK)
 - a. Macrosomia
 - b. Meconium aspiration syndrome
 - c. Oligohydramnios
 - d. Hypoxia
 - e. Dysmaturity syndrome
 - f. Fetal demise
3. Perform and interpret surveillance tests for the postterm fetus. (PC)
4. Describe appropriate indications for timing and mode delivery in the postterm pregnancy. (MK)

I. Premature rupture of membranes

1. Describe the possible causes of premature rupture of membranes (PROM) in preterm and term patients. (MK)
2. Perform diagnostic tests to confirm rupture of membranes. (PC)
3. Assess patients with PROM for lower and upper genital tract infection. (PC)
4. Describe the indications for and complications of expectant management in preterm and term patients with PROM. (MK)
5. Describe the indications for and complications of induction of labor in preterm and term patients with PROM. (MK)
6. Describe the role and possible complications of the following interventions in patients with preterm PROM: (MK)
 - a. Tocolytics
 - b. Corticosteroids
 - c. Antibiotics
 - d. Amniocentesis

J. Fetal death

1. Describe the clinical history indicative of fetal death. (MK)
2. Describe the possible causes of fetal death. (MK)
3. Confirm the diagnosis of fetal death by ultrasound examination. (PC)

4. Interpret the results of diagnostic tests to determine the etiology of fetal death. (PC)
5. Select and perform the most appropriate procedure for uterine evacuation based on considerations of gestational age and maternal history. (PC)
6. Describe and treat the principal complications of a retained dead fetus. (MK)
7. Describe and treat the major complications of surgical and medical uterine evacuation. (PC)
8. Describe the grieving process associated with pregnancy loss and refer patients for counseling as appropriate. (PC)
9. Counsel patients about recurrence risk of fetal death. (ICS, P)

K. Fetal malpresentations

1. Describe the usual symptoms and clinical manifestations of fetal malpresentations. (MK)
2. Describe the risk factors for and etiologies of fetal malpresentations. (MK)
3. Perform and interpret diagnostic tests to assess for fetal malpresentations. (MK, PC)
4. Counsel patients about fetal malpresentations in late pregnancy, including indications and contraindications for interventions. (PC, ICS)
5. Manage fetal malpresentations in late pregnancy and at delivery. (PC)

V. INTRAPARTUM CARE

A. Intrapartum fetal assessment

1. Perform and interpret the following methods of fetal monitoring: (PC)
 - a. Intermittent auscultation
 - b. Electronic monitoring
 - c. Fetal scalp stimulation
 - d. Vibroacoustic stimulation

2. Describe fetal heart rate tracings using standard terminology. (PC)
3. Describe the possible causes for and clinical significance of abnormal fetal heart rate patterns: (MK)
 - a. Bradycardia
 - b. Tachycardia
 - c. Variability
 - d. Early decelerations
 - e. Variable decelerations
 - f. Late decelerations
 - g. Sinusoidal waveform
4. Implement appropriate interventions, such as operative vaginal delivery and cesarean delivery, for fetal heart rate abnormalities. (PC)

B. Labor and delivery

1. Obtain an accurate history, describing onset of uterine contractions and ruptured membranes. (PC)
2. Describe appropriate indications for induction of labor. (MK)
3. Perform a pertinent physical examination to assess the following: (PC)
 - a. Status of membranes
 - b. Presence of vaginal bleeding
 - c. Fetal presentation
 - d. Fetal position
 - e. Fetal weight
 - f. Cervical effacement
 - g. Cervical dilation
 - h. Station of the presenting part
 - i. Clinical pelvimetry
 - j. Uterine contractility
4. Describe appropriate indications for and complications of cervical ripening agents. (MK)
5. Describe appropriate indications for and complications of labor-inducing agents. (MK)

6. Describe the normal course of labor. (MK)
7. Assess the progress of labor. (PC)
8. Describe the risk factors for abnormal labor. (MK)
9. Identify abnormalities of labor: (MK)
 - a. Failed induction
 - b. Prolonged latent phase
 - c. Protracted active phase
 - d. Arrest of dilation
 - e. Protracted descent
 - f. Arrest of descent
10. Describe the appropriate role for and complications of the following interventions for abnormal labor: (MK)
 - a. Analgesia/anesthesia
 - b. Anatomy
 - c. Augmentation of labor
 - d. Uterine contraction monitoring
 - e. Episiotomy
 - f. Operative vaginal forceps/vacuum delivery
 - g. Cesarean delivery
11. Recognize and appropriately evaluate abnormal fetal presentations and positions. (PC)
12. Select and perform the most appropriate procedure for delivery. (PC)
13. Recognize and manage delivery complications, such as the following: (MK, PC)
 - a. Shoulder dystocia
 - b. Obstetric lacerations
 - c. Postpartum hemorrhage
 - d. Retained placenta
 - e. Uterine inversion
 - f. Uterine rupture
 - g. Perineal hematoma

14. Counsel patients about the prognosis for cesarean delivery versus vaginal delivery in a subsequent pregnancy. (ICS, P)

C. Vaginal birth after cesarean delivery

1. Document an accurate history of a patient's previous operative delivery. (PC)
2. Counsel a patient about risks and benefits of vaginal birth after cesarean delivery (VBAC). (ICS, P)
3. Describe the appropriate criteria for and contraindications to VBAC, including criteria for anesthesia and hospital policies. (MK, PC, PBLI, SBP)
4. Recognize and treat possible complications of VBAC, such as scar dehiscence, hemorrhage, fetal compromise, and infection. (PC)

D. Anesthesia

1. Describe the types of anesthesia that are appropriate for control of pain during labor and delivery: (MK)
 - a. Epidural
 - b. Spinal
 - c. Pudendal
 - d. Local infiltration
 - e. General
 - f. Intravenous analgesia/sedation
2. Describe appropriate indications for and contraindications to these forms of anesthesia/analgesia. (MK)
3. Recognize and treat maternal and fetal complications of anesthesia and analgesia. (MK, PC)
4. Perform selected procedures related to anesthesia and analgesia (see the list of procedures at the end of this unit). (PC)

E. Operative vaginal delivery

1. Understand indications and contraindications for forceps and vacuum deliveries. (MK)
2. Know types of forceps and vacuum devices and how to choose the appropriate instrument. (MK)

3. Counsel a patient about maternal and fetal risks and benefits of operative vaginal delivery. (ICS, PC)
4. Recognize and treat maternal complications of operative vaginal delivery. (MK, PC)
5. Know how to apply forceps and vacuum devices and perform low and outlet operative vaginal delivery. (MK)
6. Document operative vaginal delivery using standard terminology. (PC)

F. Shoulder dystocia

1. List risk factors for shoulder dystocia. (MK)
2. Counsel a patient about maternal and fetal risks of shoulder dystocia. (ICS, P)
3. Recognize signs of shoulder dystocia. (MK)
4. Know and perform maneuvers to resolve shoulder dystocia. (MK)
5. Document shoulder dystocia management using standard descriptions. (PC)
6. Counsel patients about delivery events and short-term and long-term sequelae of shoulder dystocia. (ICS, PC)

VI. POSTPARTUM CARE

A. Evaluation of the newborn

1. Perform an immediate assessment of the newborn infant and determine if resuscitative measures are indicated. (MK, PC)
2. Resuscitate a depressed neonate: (PC)
 - a. Properly position the baby in the radiant warmer.
 - b. Suction the mouth and nose.
 - c. Provide tactile stimulation.
 - d. Administer positive pressure ventilation with bag and mask.
 - e. Administer chest compressions.
3. Assign Apgar scores. (PC)
4. Describe the indications for cord blood gas analysis and interpret the test results. (MK)

5. Obtain cord blood for the following purposes: (PC)
 - a. Blood gas analysis
 - b. Determination of fetal blood type
 - c. Cord blood storage
6. Describe the rationale for administration of topical antibiotics to prevent neonatal ophthalmic infection. (MK)
7. Counsel parents about the advantages and disadvantages of circumcision. (ICS, P)

B. The puerperium

1. Perform a focused physical examination in patients postpartum. (PC)
2. Identify and treat the most common maternal complications that occur in the puerperium: (MK, PC)
 - a. Uterine hemorrhage
 - b. Infection
 - c. Wound dehiscence (abdominal incision and episiotomy)
 - d. Bladder instability
 - e. Postoperative ileus
 - f. Injury to the urinary tract
 - g. Breast engorgement and mastitis
 - h. Pulmonary embolism (including amniotic fluid)
 - i. Deep vein thrombosis
 - j. Uterine inversion
3. Recognize, treat, and refer as appropriate, postpartum affective disorders. (PC, ICS, SBP, P)
4. Prescribe methods of reversible contraception. (MK)
5. Counsel patients about permanent sterilization. (ICS, P)
6. Perform postpartum surgical sterilization. (PC)
7. Counsel patients about the advantages of and answer questions related to breastfeeding. (ICS, P)
8. Counsel patients regarding future pregnancies. (ICS, P)

PROCEDURES

The following table lists the procedures pertinent to obstetric care and summarizes the level of technical proficiency that should be achieved by graduating residents. Residents should either understand a procedure (including indications, contraindications, and principles) or be able to perform it independently. These distinctions are based on the premise that knowledge of a procedure is implicit in the ability to perform it.

Procedure	Understand	Understand and Perform
Antepartum		
Amniocentesis		
Second trimester—genetic diagnosis	X	
Third trimester—assessment of fetal lung maturity		X
Cervical cerclage		
Transabdominal	X	
Transvaginal		X
Chorionic villus sampling	X	
Cordocentesis	X	
Fetal assessment, antepartum		
Biophysical profile		X
Contraction stress test		X
Nonstress test		X
Vibroacoustic stimulation		X
Intrauterine transfusion	X	
Ultrasound examination		
Abdominal and endovaginal		X
Abdominal ultrasonography, targeted examination	X	
Cervical length		X
Color Doppler ultrasonography	X	
Doppler velocimetry	X	
Three-dimensional ultrasonography	X	
Version of breech, external		X

Procedure	Understand	Understand and Perform
Intrapartum		
Amnioinfusion		X
Amniotomy		X
Anesthetic/analgesic procedures		
Administration of narcotic antagonists		X
Administration of parenteral analgesics/sedatives		X
Epidural anesthesia	X	
General anesthesia	X	
Pudendal block		X
Spinal anesthesia	X	
B-Lynch suture placement		X
Cesarean delivery		
Classical		X
Low transverse		X
Low vertical		X
Cesarean hysterectomy		X
Curettage for adherent placenta		X
Dilation and evacuation for second-trimester fetal death	X	
Episiotomy and repair		X
Fetal assessment, intrapartum		
Fetal heart rate monitoring (internal/external)		X
Fetal scalp pH determination	X	
Fetal scalp stimulation test		X
Vibroacoustic stimulation test		X
Forceps delivery		
Low		X
Outlet		X
Hypogastric artery ligation	X	
Induction of labor		X
Manual removal of the placenta		X

Procedure	Understand	Understand and Perform
Shoulder dystocia maneuvers		X
Skin incision		
Transverse		X
Vertical		X
Suction evacuation for first-trimester fetal death		X
Uterine artery embolization	X	
Uterine artery ligation		X
Uterine tamponade		X
Vacuum extraction		
Low		X
Outlet		X
Vaginal delivery, breech	X	
Vaginal delivery, spontaneous		X
Vaginal delivery, twins		X
Postpartum		
Circumcision, neonatal (with anesthesia)	X	
Hematoma evacuation, intra-abdominal		X
Vulvar		X
Vaginal		X
Neonatal resuscitation, immediate		X
Repair of genital tract lacerations		
Cervical		X
Perineal (second-, third-, and fourth-degree lacerations)		X
Vaginal		X
Sterilization		X
Wound care		
Débridement		X
Incision and drainage of abscess or hematoma		X
Repair of dehiscence		X
Secondary closure		X

Unit 4

GYNECOLOGY ↔23↔93↔108

The practice of gynecology includes both surgical and nonsurgical treatment of disorders of the female reproductive tract. Once primarily a surgical specialty, gynecology has increasingly become more office-based as a result of advances in therapeutic and diagnostic techniques. In addition to primary office care, the gynecologist often cares for patients with more specialized needs, including those of patients with endocrinologic disorders, infertility, pregnancy loss, urologic disorders, cancer of the reproductive tract, and conditions that require acute and critical care. In acquiring skills and knowledge in the general discipline of obstetrics and gynecology, residents should assimilate diagnostic and therapeutic principles underlying a broader spectrum of medical and surgical disorders. Once in clinical practice, the gynecologist often remains the primary health care provider for patients who have been treated by subspecialists or by physicians outside the specialty of obstetrics and gynecology.

I. BASIC SCIENCE/MECHANISMS OF DISEASE

A. Genetics (MK) (See Unit 7, “[Genomics](#)”)

B. Physiology (MK)

1. Describe the hemodynamic changes associated with blood loss.
2. Summarize the changes that occur in the cardiopulmonary function of an anesthetized and postanesthesia patient.
3. Describe the physiology of wound healing.
4. Describe the physiology of blood pressure maintenance and abnormalities of blood pressure.

5. Describe the physiologic changes related to the maintenance of adequate urine output.
6. Describe the physiology of thermoregulation in the anesthetized and postanesthesia patient.

C. Embryology and developmental biology (MK)
(See Unit 5, I-C, “[Embryology and developmental biology](#)”)

D. Anatomy (MK) (See Unit 6, I-D, “[Anatomy](#)”)

E. Pharmacology (MK)

1. Describe the general principles of drug delivery, distribution, metabolism, and excretion.
2. Summarize the pharmacology of medications used in the treatment of common gynecologic disorders.
3. Explain the pharmacologic principles of drug therapy in prepubertal girls, women of reproductive age, and elderly patients.
4. Describe the components of commonly used contraceptive agents and the mechanisms of action.

F. Pathology and neoplasia (MK)

1. Summarize the pathogenesis and epidemiology of the common nonmalignant neoplasms that affect the external and internal genitalia.
2. Describe the histology of the common nonmalignant neoplasms that affect the external and internal genitalia.
(Also see Unit 6, I-F, “[Pathology and neoplasia](#)”)

G. Microbiology and immunology (MK)

1. Describe the normal bacteriologic flora of the lower genital tract.
2. Describe the microbiologic principles germane to the diagnosis and treatment of gynecologic infectious diseases.
3. Describe the epidemiologic principles involved in the spread of infectious diseases in both patients and health care workers, including transmission and prevention of human immunodeficiency virus (HIV) and hepatitis.
4. Describe the immunologic response to infection.

II. DISORDERS OF THE UROGENITAL TRACT AND BREAST

A. Abnormal uterine bleeding ↩

1. Describe the principal causes of abnormal uterine bleeding and the International Federation of Gynecology and Obstetrics (FIGO) classification system. (MK)
2. Obtain a pertinent history to evaluate abnormal uterine bleeding. (PC)
3. Perform a focused physical examination to investigate the etiology of abnormal uterine bleeding.
4. Perform and interpret the results of selected diagnostic tests, such as the following, to determine the cause of abnormal uterine bleeding: (PC)
 - a. Endometrial biopsy
 - b. Pelvic ultrasonography/saline infusion ultrasonography
 - c. Hysteroscopy
 - d. Laparoscopy
5. Interpret the results of other diagnostic tests, such as the following: (PC)
 - a. Serum/urine human chorionic gonadotropin (hCG) assay
 - b. Endocrinologic assays
 - c. Microbiologic cultures of the genital tract
 - d. Complete blood count
 - e. Coagulation profile
6. Treat abnormal uterine bleeding using both nonsurgical and surgical methods. (PC)
7. Recommend appropriate follow-up that is necessary for a patient with abnormal uterine bleeding. (PC)

B. Vaginal and vulvar infections

1. Describe the principal infections that affect the vulva and vagina. (MK)
2. Obtain a pertinent history in a patient with a possible infection of the vulva or vagina. (PC)

3. Perform a focused physical examination. (PC)
4. Perform and interpret the results of selected tests, such as the following, to confirm the diagnosis of vulvar or vaginal infection: (PC, MK)
 - a. Vaginal pH
 - b. Saline microscopy
 - c. Potassium hydroxide microscopy
 - d. Bacterial, fungal, and viral culture
 - e. Colposcopic examination
 - f. Vulvar or vaginal biopsy
5. Treat vulvar and vaginal infections. (PC)
6. Describe the follow-up, such as the following, that is necessary for a patient with a vulvar or vaginal infection: (PC, P, SBP, ICS).
 - a. Assess and treating sexual partner(s)
 - b. Comply with requirements for reporting a communicable disease
 - c. Assess the patient for other possible genital tract infections
 - d. Counsel the patient with respect to measures that prevent reinfection

C. Vulvar dystrophies, dermatoses and vulvar pain syndromes

1. Describe the principal types of vulvar dystrophies and dermatoses, such as the following: (MK)
 - a. Squamous cell hyperplasia
 - b. Lichen sclerosus
 - c. Lichen planus
 - d. Lichen simplex chronicus
 - e. Atrophic dermatitis
 - f. Vulvar vestibulitis and vulvodynia
2. Obtain a pertinent history in a patient with a suspected vulvar dystrophy, dermatosis, or vulvar pain syndrome. (PC)
3. Perform a focused physical examination in a patient with a suspected vulvar dystrophy, dermatosis, or vulvar pain syndrome. (PC)

4. Perform and/or interpret the results of selected diagnostic tests, such as the following, to confirm the diagnosis of a vulvar dystrophy or dermatosis: (PC, MK)
 - a. Colposcopy
 - b. Staining with dyes to localize the affected area
 - c. Vulvar biopsy
5. Treat common vulvar dystrophies, dermatoses, and vulvar pair syndromes medically and surgically. (PC)
6. Describe follow-up for a patient with a vulvar dystrophy or dermatosis, including the risk, if present, for malignant change. (PC)

D. Sexually transmitted infections

1. Describe the most common sexually transmitted infections (STIs), including causes, symptoms, and risk of transmission, such as the following: (MK)
 - a. Chlamydia
 - b. Gonorrhea
 - c. Syphilis
 - d. Hepatitis B and hepatitis C
 - e. Human immunodeficiency virus (HIV)
 - f. Herpes simplex
 - g. Human papillomavirus
 - h. Chancroid
2. Obtain a pertinent history in a patient with a suspected STI. (PC)
3. Perform a focused physical examination in a patient with a suspected STI. (PC)
4. Perform and/or interpret the results of specific tests, such as the following, to confirm the diagnosis of an STI: (PC)
 - a. Bacterial and/or viral culture
 - b. Endocervical aspirate for Gram stain
 - c. Endocervical swab for nucleic acid detection
 - d. Endocervical culture

- e. Cervical or vaginal cytologic screening (Pap test) and human papillomavirus testing
 - f. Scraping of an ulcer or chancre
 - g. Serologic assays
 - h. Tzanck smear
5. Treat STIs with appropriate antimicrobial and antiviral agents. (PC)
 6. Describe the long-term follow-up for patients with an STI, including assessment of the patient's sexual partner, discussion of preventive measures, and review of serious sequelae, such as the following: (PC, ICS, P, SBP)
 - a. Infertility
 - b. Ectopic pregnancy
 - c. Chronic pelvic pain
 - d. Pelvic inflammatory disease (PID)
 - e. Cervical dysplasia, neoplasia

E. Pelvic inflammatory disease

1. Describe the diagnostic criteria for PID. (MK)
2. List the common pathogens implicated in PID. (MK)
3. Obtain a pertinent history from a patient suspected to have PID. (PC)
4. Perform a physical examination to confirm the diagnosis of PID. (PC)
5. Describe the appropriate diagnostic tests to confirm PID, including indications for the tests, and how to perform and/or interpret the results: (PC)
 - a. Endocervical swab for culture or nucleic acid detection
 - b. Endometrial biopsy
 - c. Imaging studies
 - d. Laparoscopy
6. Treat PID with appropriate antimicrobial and surgical options. (PC)

7. Summarize the potential long-term effects and counsel patients regarding risks of further complications, including the following: (PC, ICS, P)
 - a. Chronic pelvic pain
 - b. Infertility
 - c. Ectopic pregnancy

F. Urogynecology (urinary incontinence and pelvic support defects)

1. Normal anatomy and general considerations
 - a. Explain the normal anatomic supports of the vagina, rectum, bladder, urethra, and uterus (or vaginal cuff in the setting of prior hysterectomy), including the bony pelvis, pelvic floor nerves and musculature, and connective tissue. (MK)
 - b. Describe the static and dynamic interrelationships and function of the pelvic organs and support mechanisms. (MK)
 - c. Describe the principal etiologies of pelvic support defects, urinary incontinence, and fecal incontinence. (MK)
 - d. Summarize the potential psychological, social, and sexual consequences of urogynecologic disorders. (MK)
 - e. Describe the symptoms that may be experienced by a patient with pelvic support defects, urinary incontinence, or fecal incontinence. (MK)
 - f. Obtain a pertinent history in a patient with a suspected pelvic support defect, urinary incontinence, or fecal incontinence. (PC)
2. Pelvic support defects
 - a. Identify the anatomic defects associated with various aspects of pelvic support disorders. (MK)
 - b. Perform a focused physical examination to identify and characterize specific pelvic support defects, including the following: (PC)
 - (1) Anterior compartment
 - (2) Urethral hypermobility
 - (3) Posterior compartment
 - (4) Apical compartment (cervix/uterus or vaginal cuff)

- c. Summarize and counsel patients regarding risks, benefits, and expected outcomes of surgical and nonsurgical approaches to the management of pelvic support disorders. (PC, ICS, P)
 - d. Treat urogynecologic disorders by both nonsurgical (eg, pelvic floor exercise regimens, physical therapy, and pessary) and surgical methods. (PC)
 - e. Describe the types of injuries or complications that may occur related to medical and surgical treatments of pelvic floor disorders and the approaches to managing them. (PC)
 - f. Describe appropriate follow-up for a patient who has been treated for a pelvic floor disorder. (PC, SBP, ICS)
3. Continence and incontinence
- a. Summarize the normal function of the lower urinary tract during the filling and voiding phases and the mechanisms responsible for urinary continence. (MK)
 - b. Characterize the major types of urinary incontinence. (MK)
 - c. Perform a focused physical examination in a patient with urinary and/or fecal incontinence, including assessment of the following: (PC)
 - (1) Bladder and urethral support
 - (2) Perineal, levator, and anal sphincter strength
 - (3) Neurologic status
 - d. Perform and interpret the results of the following selected tests to characterize urinary incontinence disorders: (PC)
 - (1) Urinalysis
 - (2) Urine culture
 - (3) Assessment of residual urine volume
 - (4) Simple cystometry
 - (5) Swab test
 - e. Describe the indications for and the implications of the results of other diagnostic tests, such as the following: (PC)
 - (1) Cystourethroscopy
 - (2) Multichannel cystometry
 - (3) Urethral profilometry
 - (4) Uroflowmetry

- (5) Radiologic tests
 - (6) Electromyography
 - (7) Assessment of anal sphincter integrity (eg, manometry, radiologic imaging studies, and neurologic testing)
 - f. Summarize and counsel patients regarding risks, benefits, and expected outcomes of surgical and nonsurgical approaches to the management of incontinence disorders. (PC, ICS, P)
 - g. Treat incontinence disorders by both nonsurgical (eg, pelvic floor exercise regimens, physical therapy, and pessary) and surgical methods. (PC)
 - h. Describe the types of injuries or complications that may occur related to medical and surgical treatments of incontinence disorders and the approaches to managing them. (PC)
 - i. Describe appropriate follow-up for a patient who has been treated for incontinence. (PC, SBP, ICS)
4. Other urogynecologic conditions
- a. Describe abnormal urethral conditions, including urethral syndrome, urethritis, and diverticulitis. (MK)
 - b. Describe the possible etiologies, diagnostic strategies, and treatment approaches for interstitial cystitis. (MK, SBP)
 - c. Describe the various types of urinary voiding disorders and their possible etiologies, including medical and surgical causes. (MK)
 - d. Describe the etiologies, prevention, diagnostic techniques, and approaches to repairing various fistulae that may involve the pelvic organs. (MK)

G. Urinary tract disorders (infection, nephrolithiasis)

- 1. Distinguish the types of urinary tract infection, including bacteriuria, urethritis, cystitis, and pyelonephritis. (MK)
- 2. Describe the pathophysiology related to urinary tract infection, including the organisms commonly implicated in lower and upper urinary tract disorders, and host factors, such as urinary retention, age, and pregnancy. (MK)

3. Describe the pathophysiology of the common forms of nephrolithiasis, including patient risk factors for the development of nephrolithiasis. (MK)
4. Describe typical clinical presentations, and obtain a pertinent history in a patient with a possible urinary tract infection or nephrolithiasis. (PC)
5. Describe the diagnostic methods and diagnostic criteria for the various types of urinary tract infections. (MK)
6. Summarize the methods used for the diagnosis of nephrolithiasis. (MK)
7. Describe modes of therapy for acute, chronic, and complicated urinary tract infections, including prophylaxis for recurrent infection. (MK, PC)
8. Summarize therapeutic options for nephrolithiasis and strategies to prevent recurrence. (MK, PC)

H. Pelvic masses

1. Describe the major causes of pelvic masses, including nongynecologic sources and those arising from the female genital tract, such as the following: (MK)
 - a. Uterine leiomyomas
 - b. Adnexal, cystic, and solid masses
 - c. Tubo-ovarian abscess
 - d. Adnexal torsion
 - e. Ovarian cysts/benign neoplasms
 - f. Diverticulitis
 - g. Appendicitis
2. Obtain a pertinent history suggestive of a pelvic mass, such as the following: (PC)
 - a. Weight loss or weight gain
 - b. Gastrointestinal symptoms
 - c. Menstrual abnormalities
 - d. Pelvic pain or pressure

3. Perform a focused physical examination to confirm the diagnosis of a pelvic mass. (MK)
4. Perform and/or interpret tests, such as endovaginal or abdominal ultrasonography, to confirm the diagnosis of a pelvic mass. (PC)
5. Interpret the results of other tests, such as magnetic resonance imaging or computed tomography imaging, in the evaluation of a pelvic mass. (PC, SBP)
6. Describe the role of serum markers in the evaluation and monitoring of a patient with a pelvic mass. (MK)
7. Treat benign pelvic masses with nonsurgical or surgical methods, considering patient factors, such as the following: (MK)
 - a. Age
 - b. General health
 - c. Treatment preference
 - d. Desire for future childbearing
 - e. Symptom complex
8. Describe the appropriate follow-up for patients who have been treated for a benign pelvic mass. (PC, SBP)

I. Chronic pelvic pain

1. Define chronic pelvic pain. (MK)
2. Outline the principal gynecologic and nongynecologic causes of chronic pelvic pain and describe the pathophysiology of each cause. (MK)
3. Obtain a pertinent, detailed medical, menstrual, and sexual history to characterize the patient's chronic pelvic pain, including signs/symptoms emanating from nonreproductive organs. (PC)
4. Obtain an appropriate social and mental health history in a patient with chronic pelvic pain. (PC)
5. Perform a focused physical examination, including attempts to localize the pain and an evaluation of neurologic and musculoskeletal components. (PC)

6. Perform and/or interpret the results of the following selected diagnostic tests to determine the cause of chronic pelvic pain: (PC, ICS)
 - a. Microbiologic cultures of the genitourinary tract
 - b. Radiologic imaging studies
 - c. Hysteroscopy
 - d. Laparoscopy
 - e. Injection of anesthetic agent at a specific trigger point.
 - f. Mental health examination, including screening for depression or dysphoria
7. Treat patients with chronic pelvic pain with nonsurgical and surgical methods. (PC)
8. Summarize indications and approximate success rates for interventions for chronic pelvic pain, such as laparoscopy, presacral neurectomy, uterosacral nerve ablation, adhesiolysis, and extirpative procedures. (MK, PC)
9. Describe the indications for referral of a patient to a specialist in urology or gastroenterology. (PC, SBP)
10. Describe the indications for referral to a multidisciplinary group, including pain management specialists and behavioral and/or mental health. (PC, SBP)
11. Describe the appropriate long-term goals and follow-up for a patient with chronic pelvic pain. (PC, SBP, P)

J. Endometriosis and adenomyosis ↩

1. Summarize the theories of the pathogenesis of endometriosis. (MK)
2. Describe the typical history of a patient with endometriosis and adenomyosis. (MK)
3. Perform a focused physical examination in a patient with suspected endometriosis or adenomyosis and identify the principal abnormal clinical findings. (PC)
4. Perform and interpret the results of radiologic and surgical findings consistent with the diagnosis of endometriosis and adenomyosis. (PC)

5. Describe various features of endometriosis on visual inspection with laparoscopy or laparotomy. Compare the sensitivity of visual inspection with biopsy in diagnosing endometriosis. (MK)
6. Describe the staging system for endometriosis according to the American Society for Reproductive Medicine Classification of Endometriosis. (MK)
7. Describe the medical and surgical treatment of endometriosis. (PC)
8. Describe the appropriate long-term follow-up and outcome in patients who have endometriosis, including infertility. (MK, PC)

K. Benign disorders of the breast

1. Describe the clinical history and principal pathophysiologic conditions that affect the breast, such as the following: (MK, PC)
 - a. Breast mass
 - b. Nipple discharge
 - c. Pain
 - d. Infection (mastitis)
 - e. Asymmetry
 - f. Excessive size
 - g. Underdevelopment
2. Perform a focused physical examination to evaluate for an abnormality of the breast. (PC)
3. Describe the indications for the following procedures to assess breast disorders. Be able to perform and/or interpret the indications for and results of instrumentation and radiologic procedures. (PC)

III. FIRST-TRIMESTER PREGNANCY FAILURE

A. Spontaneous abortion

1. Describe the principal causes of or predisposing factors for spontaneous first-trimester abortion. (MK)
2. Describe the differential diagnosis of early spontaneous abortion. (MK)

3. Describe the usual symptoms and findings experienced by a patient with an early pregnancy loss. (MK)
4. Perform a focused physical examination to confirm the diagnosis and classification of spontaneous abortion. (PC)
5. Perform and/or interpret the results of selected tests used in the diagnosis and management of early pregnancy loss: (PC)
 - a. Quantitative serum hCG titer
 - b. Ultrasonography (abdominal and endovaginal)
 - c. Serum progesterone
 - d. Complete blood count
6. Treat a patient with an early spontaneous abortion with nonsurgical or surgical methods. (PC)
7. Describe and treat the complications that may develop, such as the following, as a result of treatment of a spontaneous abortion: (PC)
 - a. Genital tract infection
 - b. Uterine perforation
 - c. Retained products of conception
8. Describe the indications for anti-D immune globulin in patients experiencing a spontaneous abortion. (MK)
9. Counsel patients regarding future fertility issues and risk of recurrent pregnancy losses depending on the etiology (see Unit 5, III-H, “Recurrent pregnancy loss”). (PC, ICS, P)
10. Summarize signs and symptoms, diagnosis, treatment, and potential sequelae for septic abortion. (MK)

B. Ectopic pregnancy

1. Describe the major factors that predispose to ectopic pregnancy. (MK)
2. Obtain a pertinent history in a patient with a suspected ectopic pregnancy. (PC)
3. Perform a focused physical examination in a patient with suspected ectopic pregnancy. (PC)

4. Describe the differential diagnosis of ectopic pregnancy. (MK)
5. Perform and interpret the results of tests, such as the following, to confirm the diagnosis and location of ectopic pregnancy: (PC)
 - a. Endovaginal ultrasonography
 - b. Uterine curettage or aspiration
 - c. Laparoscopy
6. Interpret the results of other diagnostic tests, such as the following: (PC)
 - a. Quantitative serum hCG titer
 - b. Complete blood count
7. Describe the indications and contraindications for and complications of medical and surgical management of an ectopic pregnancy. (PC)
8. Counsel a patient about the risks and effectiveness of medical and surgical therapy for ectopic pregnancy.
9. Treat an affected patient using appropriate nonsurgical or surgical methods. (PC)
10. Describe the indications for anti-D immune globulin in patients with an ectopic pregnancy. (MK)
11. Describe the follow-up that is indicated for a patient treated for an ectopic pregnancy. (PC, ICS)
12. Counsel patients about the recurrence risk of an ectopic pregnancy and prognosis for a normal intrauterine pregnancy. (PC, ICS, P)

IV. PREOPERATIVE CARE, INTRAOPERATIVE CARE, AND POSTOPERATIVE CARE

A. Preoperative care

1. Conduct a detailed preoperative assessment with consideration given to the needs of special patient groups, such as the following: (PC, ICS, P, SBP)
 - a. Children and adolescents
 - b. The elderly

- c. Patients with coexisting medical conditions, such as cardio-pulmonary disease or coagulation disorders
 - d. Non-English speaking patients
2. Describe indications and perform appropriate preoperative evaluation and/or referral, including laboratory tests, radiographic imaging, and electrocardiogram. (PC, SBP)
3. Be able to obtain informed consent, with special regard to: (PC, ICS, P)
 - a. Alternatives to surgery, including no intervention
 - b. Alternative surgical procedures
 - c. Intraoperative and postoperative complications
 - d. Indications for transfusion
4. Compose appropriate preoperative preparation plans for patients undergoing gynecologic surgery, including antibiotic and thromboembolic prophylaxis and appropriate preoperative anesthesia consultation. (MK, PC)

B. Intraoperative care

1. Understand the importance of patient safety measures in the operating room, including a surgical time out. (ICS, SBP)
2. Describe the options for intraoperative pain control, including the risks and benefits of each method. (MK)
3. Choose appropriate suture and surgical instruments as dictated by the procedure. (MK, PC)
4. Be able to properly position the patient for the procedure and understand the consequences of improper positioning. (PC)
5. Understand and demonstrate the incisions and instruments used for abdominal entry in laparoscopy and laparotomy, including Cherney, Maylard, Midline, Paramedian, and Pfannenstiel. (MK, PC)
6. Demonstrate the proper use of retractors and understand the consequences of improper use. (MK, PC)
7. Name and be able to properly use surgical instruments. (MK, PC)
8. Describe the various electrosurgical sources, indications, alternatives, and complications of each. (MK, PC)

9. Recognize common intraoperative complications associated with gynecologic procedures and describe the appropriate management of each. (MK, PC)

C. Postoperative care

1. Choose appropriate pain control based on the surgical procedure, degree of patient discomfort, and patient characteristics, including age and presence of coexisting morbidities. (MK, PC)
2. Obtain appropriate history, perform a physical examination, perform and/or interpret appropriate tests, and manage common postoperative complications, such as the following: (PC)
 - a. Fever
 - b. Gastrointestinal ileus/obstruction
 - c. Infection
 - d. Wound complications
 - e. Fluid or electrolyte imbalances, including abnormalities of urinary output
 - f. Respiratory problems
 - g. Thromboembolism
 - h. Injury to urinary or gastrointestinal tract
3. Manage and counsel patients about normal postoperative recovery. Include the following topics: (PC, ICS, SBP)
 - a. Advancement of diet and return to normal dietary and bowel function
 - b. Ambulation
 - c. Management of urethral catheterization and return to normal urinary function
 - d. Thromboembolism prophylaxis
 - e. Wound care
 - f. Return to normal activity levels and/or appropriate restrictions, including sexual activity
 - g. Surgical menopause
 - h. Postoperative pain management
4. Arrange for appropriate care after hospitalization, including visiting nurse, physical therapy, social services, and other resources to optimize patient outcomes. (SBP)

V. CRITICAL CARE

A. Necrotizing fasciitis and toxic shock syndrome

1. Describe the pathogenesis and microbiology of necrotizing fasciitis and toxic shock syndrome (TSS). (MK)
2. Describe the typical signs and symptoms of a patient with necrotizing fasciitis and TSS and distinguish signs/symptoms according to the infectious agent. (PC)
3. Perform a focused physical examination to confirm the diagnosis of necrotizing fasciitis and TSS, and assess the severity of the patient's illness. (PC)
4. Interpret the results of diagnostic tests to evaluate necrotizing fasciitis and TSS. (PC)
5. Describe the principles of treatment of necrotizing fasciitis and TSS, and the possible need for consultation with a critical care or infectious disease specialist. (PC, SBP)

B. Septic shock

1. Explain the pathophysiology of septic shock. (MK)
2. Describe the usual causes of septic shock in obstetric and gynecologic patients. (MK)
3. Describe the typical symptoms experienced by a patient with septic shock. (MK, PC)
4. Perform a focused physical examination to confirm the diagnosis of septic shock, attempt to determine the etiology of the disorder, and assess the severity of the patient's illness. (PC)
5. Describe indications for and interpret the results of the following diagnostic tests: (MK, PC)
 - a. Microbiologic cultures
 - b. Serum evaluation of complete blood count
 - c. Liver and renal function
 - d. Coagulation
 - e. Arterial blood gases
 - f. Appropriate radiologic testing
 - g. Central hemodynamic monitoring

6. Describe the principles of management of septic shock, including antimicrobial and supportive therapy. (MK, PC)
7. Manage a patient with septic shock, consulting an appropriate specialist as needed. (PC, SBP)

C. Adult respiratory distress syndrome

1. Identify the principal causes of adult respiratory distress syndrome (ARDS). (MK)
2. Explain the pathophysiology of ARDS depending on the etiology. (MK)
3. Describe the usual signs and symptoms manifested by a patient with ARDS. (MK, PC)
4. Perform a focused physical examination to aid in the diagnosis of ARDS and assess the severity of the condition. (PC)
5. Interpret the results of diagnostic tests, such as the following: (PC)
 - a. Chest X-ray
 - b. Pulse oximetry
 - c. Arterial blood gas analysis
 - d. Pulmonary function tests
 - e. Central hemodynamic monitoring
6. Describe the principles of treatment of ARDS. (PC)
7. Manage a patient with ARDS, consulting an appropriate specialist as needed. (PC, SBP, ICS)

D. Hemodynamic assessment

1. Describe the conditions most likely to cause cardiovascular dysfunction in obstetric and gynecologic patients. (MK)
2. Perform a focused physical examination to detect signs of hemodynamic derangements, such as the following: (PC)
 - a. Hypotension or hypertension
 - b. Bradycardia or tachycardia
 - c. Apnea or tachypnea
 - d. Signs of poor tissue perfusion (eg, oliguria or delayed capillary refill)

- e. ARDS
 - f. Myocardial failure
 - g. Altered mental status
3. Explain the indications for central hemodynamic monitoring (catheterization of the right side of the heart). (MK, PC)
 4. Interpret the results of central hemodynamic monitoring and describe management of patients in whom central monitoring is being performed based on the hemodynamic parameters obtained. (MK, PC)
 5. Describe the complications of central hemodynamic monitoring and, when managing those complications, consult with an appropriate specialist as needed. (MK, PC, SBP)

E. Cardiopulmonary resuscitation

1. Perform a rapid, focused physical examination to identify the patient who requires cardiopulmonary resuscitation and attempt to determine the cause of the patient's decompensation. (MK, PC)
2. Perform basic cardiac life support as per American Heart Association guidelines. (MK, PC)
3. Describe the principles of Advanced Cardiac Life Support (ACLS), and in conjunction with an ACLS team, participate in the performance of ACLS according to American Heart Association guidelines. (MK)

F. Allergic drug reactions

1. List the drugs most likely to produce allergic reactions in obstetric and gynecologic patients. (MK)
2. Describe the typical symptoms associated with a drug reaction. (MK)
3. Describe the varying degrees of severity of a drug reaction, including anaphylaxis. (MK)
4. Perform a focused physical examination to confirm the diagnosis of a drug reaction and assess the severity of the reaction. (PC)
5. Describe the differential diagnosis of a drug reaction. (MK)

6. Describe the principles of treatment of a drug reaction. Manage a patient with a drug reaction, in consultation with an appropriate specialist as needed. (MK, PC, SBP)

G. Acute blood loss

1. Describe the pathophysiology of acute blood loss. (MK)
2. Describe the laboratory evaluation of acute blood loss, including the following: (MK)
 - a. Complete blood count
 - b. Evaluation of coagulopathy
 - c. Electrolyte evaluation
 - d. Evaluation of acute renal failure
3. Describe the treatment of acute blood loss, including the following: (MK)
 - a. Fluid and electrolyte replacement
 - b. Blood transfusion
 - c. Correction of coagulopathies
 - d. Medical, mechanical, and surgical treatment options

VI. SURGICAL CARE OF THE GERIATRIC PATIENT

1. Explain surgical options for a given indication in a geriatric patient, accounting for the patient's medical condition and functional status. (MK, PC, ICS)
2. Assess the effect of the proposed surgical intervention on a patient's capacity for independent living, including assessment of availability of assistance or need for assistance during treatment or the recovery period. (PC, ICS)
3. Summarize complications of anesthesia that are more common in the elderly patient. (MK)
4. Assess the elderly patient's capacity for independent decision making related to surgical consent. (PC, ICS, P)
5. Counsel patients and family members about advance directives, living wills, "do not resuscitate" orders, powers of attorney, and surrogate decision making. (PC, ICS, P, SBP)

6. Describe the appropriate preoperative evaluation for a geriatric patient, including consultation with other medical disciplines, as indicated. (PC, SBP)
7. Describe the unique considerations related to preoperative care, intraoperative care, and postoperative care of the geriatric patient, such as the following: (PC, ICS, SBP)
 - a. Entrapment neuropathies
 - b. Hypothermia
 - c. Fluid and electrolyte imbalances
 - d. Thromboembolism
 - e. Pain management
 - f. Adverse drug events
 - g. Mental status changes
 - h. Incontinence
 - i. Infection
 - j. Nutrition
 - k. Stress-induced gastrointestinal ulceration
 - l. Pressure ulcers
 - m. Ambulation difficulties
 - n. Prevention of falls
 - o. Functional decline
 - p. Possible referral to an assisted-living facility or possible need for assistance within the home.

PROCEDURES

The following table lists the procedures pertinent to gynecology and summarizes the level of technical proficiency that should be achieved by graduating residents. Residents should either understand a procedure (including indications, contraindications, and principles) or be able to perform it independently. These distinctions are based on the premise that knowledge of a procedure is implicit in the ability to perform it.

Procedure	Understand	Understand and Perform
Abdominal sacrocolpopexy	X	
Ablation and excision of endometriosis implants		X
Ablative procedures of cervix		X
Ablative procedures of endometrium		X
Anoscopy		X
Appendectomy	X	
Biopsy		
Cervix		X
Endocervix		X
Endometrium		X
Peritoneum		X
Skin		X
Vagina		X
Vulva		X
Breast, cyst aspiration	X	
Breast biopsy	X	
Cervical conization		X
Colonic endoscopy	X	
Colpocleisis	X	
Colporrhaphy		
Anterior (including urethropexy)		X
Posterior		X

Procedure	Understand	Understand and Perform
Colposcopy, with directed biopsy of cervix, vagina, or vulva		X
Colposuspension		X
Culdoplasty		X
Cystometrography		
Complex (multichannel)	X	
Simple		X
Cystotomy repair		X
Cystourethroscopy		X
Dilation and curettage		X
Enterocoele repair		X
Enterotomy repair		X
Excision of cyst (ovarian, tubal, vaginal, vulvar)		X
Excision of Bartholin gland		X
Fistula repair		
Rectovaginal	X	
Ureterovaginal	X	
Urethrovaginal	X	
Vesicovaginal	X	
Hernia repair (incisional)		X
Hymenotomy		X
Hypogastric artery ligation	X	
Hysterectomy		
Abdominal, total or supracervical		X
Laparoscopic, total or supracervical	X	
Vaginal		X
Vaginal, laparoscopically assisted		X
Hysterosalpingography	X	
Hysteroscopy		
Diagnostic		X
Operative		X
Incision and drainage of an abscess or hematoma		X

Procedure	Understand	Understand and Perform
Laparoscopy, diagnostic and/or operative		X
Laparotomy incisions, abdominal		X
Lysis of adhesions		
Abdominal		X
Laparoscopic		X
Marsupialization of Bartholin cyst		X
Myomectomy		X
Omentectomy, infracolic		X
Oophorectomy		X
Ovarian biopsy		X
Ovarian drilling, laparoscopic	X	
Ovarian or paraovarian cystectomy		X
Ovarian transposition	X	
Paravaginal repair	X	
Perineorrhaphy		X
Perineoplasty		X
Pessary fitting		X
Polypectomy		X
Presacral neurectomy	X	
Salpingectomy and/or oophorectomy		X
Salpingotomy		X
Sterilization		
Abdominal		X
Hysteroscopic		X
Laparoscopic		X
Swab test		X
Trachelectomy	X	
Trigger point injection	X	
Ultrasonography		
Abdominal		X
Endovaginal		X
Saline infusion ultrasonography	X	

Procedure	Understand	Understand and Perform
Urethral bulking procedures	X	
Urethral diverticulum repair	X	
Urethral pressure profilometry	X	
Ureteroureterostomy	X	
Ureteral reimplantation	X	
Uterine artery embolization	X	
Uterine evacuation (incomplete abortion, fetal death)		
Dilation and evacuation	X	
Mechanical or osmotic preprocedural cervical preparation		X
Suction curettage		X
Vaginal sling for urinary incontinence		X
Vulvectomy, simple	X	
Wide local excision (vulva)		X
Wound care		
Débridement		X
Incision and drainage		X
Placement of fascial or skin graft	X	
Repair of dehiscence		X
Secondary closure		X

Unit 5

REPRODUCTIVE ENDOCRINOLOGY

The practice of reproductive endocrinology requires a thorough knowledge of disorders of development as well as disorders associated with infertility (or failure in human reproduction). Manifestations of disorders that become evident at the time of sexual maturation may have their beginnings as developmental or genetic abnormalities. An understanding of the association between early developmental and genetic problems and their later manifestations is important to appreciate the hormonal interactions that occur within the female reproductive tract. Likewise, the metabolic implications of disorders should be recognized.

For many gynecologists, evaluating and treating fertility disorders constitute their entire practice. This area of the specialty includes identifying disorders related to pregnancy loss as well as causes of infertility. Although residents in obstetrics and gynecology are not expected to master the actual techniques of assisted reproduction, knowledge of the scientific basis for these procedures, including a thorough knowledge of gamete development, embryology, and physiology of the hypothalamic–pituitary–ovarian axis, is imperative. The science underlying these techniques represents the cognitive information important to the application of these technologic skills.

Women today spend more than one third of their lifetimes in the post-reproductive years. This area of medicine is becoming increasingly important as the life expectancy of U.S. women increases. The medical management of postreproductive women usually falls to the obstetrician–gynecologist specialist rather than the subspecialist. Therefore, residents should have a thorough understanding of the changes that occur in the hypothalamic–pituitary–ovarian axis at the time of menopause and the importance of these changes as they relate to alteration in other body systems, particularly the cardiovascular and

skeletal systems. In addition, residents should understand the appropriate use of hormone therapy.

I. BASIC SCIENCE/MECHANISMS OF DISEASE

A. Genetics (See Unit 7, V, “Reproductive Endocrinology”)

B. Physiology

1. Describe the physiology of the following: (MK)
 - a. The hypothalamic–pituitary–ovarian axis
 - b. Adrenal steroid and catecholamine synthesis
 - c. The thyroid gland and thyroid hormone synthesis
 - d. Female and male gametogenesis
 - e. Hormonally regulated tissue receptors
 - f. Bone formation/resorption
2. Describe the normal process of steroid hormone biosynthesis. (MK)
3. Describe the relationship between ovarian and adrenal androgen production and hyperinsulinemia. (MK)
4. Describe the physiology of the normal menstrual cycle. (MK)
5. Describe physiologic changes that occur at the time of puberty and menopause. (MK)

C. Embryology and developmental biology ↔

1. Describe the normal embryology of müllerian and ovarian development. (MK)
2. Describe the pathogenesis of abnormal müllerian development. (MK)
3. Describe the pathogenesis of disorders of sexual differentiation. (MK)

D. Anatomy

1. Describe and interpret normal and abnormal reproductive tract anatomy visualized by imaging procedures. (MK, PC)
2. Describe normal and abnormal reproductive tract anatomy visualized grossly, hysteroscopically, and laparoscopically. (PC)

3. Describe the anatomic appearance of müllerian abnormalities. (MK)
4. Describe the anatomic abnormalities that occur in patients with disorders of sexual differentiation. (MK)
5. Describe the anatomy of the central nervous system as it relates to menstrual function. (MK)
6. Describe the anatomic changes that occur to the reproductive organs and breasts at the time of puberty and menopause. (MK)

E. Pharmacology

1. Describe the pharmacology of medications used to do the following: (MK)
 - a. Induce ovulation
 - b. Inhibit ovulation (eg, gonadotropin-releasing hormone agonists and antagonists, steroid contraceptives)
 - c. Inhibit the effects of prostaglandins
 - d. Inhibit the effects of progesterones (mifepristone)
 - e. Treat hyperprolactinemia
2. Describe the pharmacology of hormone therapy and selective estrogen-receptor and progesterone-receptor modulators. (MK)
3. Describe the pharmacology of medications used to inhibit bone resorption and stimulate bone formation. (MK)

F. Pathology and neoplasia

1. Describe the histologic appearance of endometriosis. (MK)
2. Describe the histologic changes of the endometrium associated with the following: (MK)
 - a. The normal menstrual cycle
 - b. Ovulation-inducing or ovulation-inhibiting agents
 - c. Chronic anovulation
3. Describe the histologic appearance of the ovary: (MK)
 - a. In its normal state
 - b. In androgen-excess disorders, such as polycystic ovary syndrome and hyperthecosis

G. Microbiology and immunology

1. Describe histologic alterations in the endometrium and fallopian tubes associated with infection and their effect on fertility. (MK)
2. Describe immunologic causes of infertility. (MK)

II. PEDIATRIC AND ADOLESCENT GYNECOLOGY

A. Pediatric gynecology (birth to menarche) ←

1. Describe gynecologic problems, such as the following, experienced by pediatric patients: (MK)
 - a. Vulvovaginitis
 - b. Vulvar disease
 - c. Prepubertal vaginal bleeding
 - d. Trauma
 - e. Foreign body in the vagina
 - f. Sexual abuse
 - g. Abnormal pubertal development
 - h. Ambiguous genitalia
2. Obtain a pertinent history and perform a focused physical examination appropriate for the patient's age. (PC, ICS, P)
3. Perform and/or interpret indicated tests to diagnose a specific gynecologic disorder in a pediatric patient. (PC)
4. Describe the medical and surgical treatment of pediatric gynecologic disorders, such as the following: (MK, PC)
 - a. Vulvovaginitis
 - b. Vulvar disease
 - c. Prepubertal vaginal bleeding
 - d. Trauma
 - e. Foreign body in the vagina
 - f. Sexual abuse
 - g. Abnormal pubertal development
 - h. Ambiguous genitalia
5. Describe the indications for referral to a subspecialist. (PC, SBP)

6. Counsel the patient and her family about long-term prognosis and the effect of specific conditions on reproduction and sexual function. (ICS)
7. Perform a forensic examination (including appropriate laboratory tests) to evaluate sexual abuse. (PC, SBP)
 - a. Describe the standards for diagnosis of sexual abuse and for maintenance of the chain of evidence.
 - b. Identify the mandated reporting law for sexual abuse in the physician's practice location.
 - c. Collaborate with appropriate health professionals regarding the follow-up of pediatric patients evaluated for sexual abuse.

B. Precocious puberty

1. Define precocious puberty. (MK)
2. Describe the principal causes of precocious puberty. (MK)
3. Obtain a history and perform a focused physical examination to evaluate the diagnosis of precocious puberty. (PC, ICS)
4. Interpret the results of indicated serologic and radiologic tests to evaluate precocious puberty. (PC)
5. Describe the treatment and long-term prognosis for patients with precocious puberty, especially in regard to reproduction and sexual function. (PC)

C. Developmental anomalies of the urogenital tract

1. Describe the major developmental anomalies and their implications for sexual function, menstruation, fertility, and reproductive outcome, including the following: (MK)
 - a. Hymenal abnormalities
 - b. Vaginal agenesis with or without a uterus
 - c. Vaginal septum
 - d. Uterine septum
 - e. Unicornuate or bicornuate uterus
2. Describe the features of a patient's history suggestive of a developmental anomaly of the urogenital tract. (MK)

3. Perform a focused physical examination to identify developmental anomalies of the urogenital tract and associated somatic anomalies. (PC)
4. Interpret indicated radiologic and serologic tests to confirm the diagnosis of a developmental anomaly, its etiology, and its potential clinical implications. (MK, PC)
5. Describe appropriate medical and surgical treatment options for patients with developmental anomalies. (PC)
6. Counsel patients and their families about the effect of genital tract anomalies on reproduction and sexual function. (ICS)
7. Describe the indications for referral to a subspecialist. (SBP)

D. Adolescent gynecology ↩

1. Describe the age-specific presentation and diagnosis of gynecologic issues often experienced by adolescent women, such as the following: (MK, PC)
 - a. Normal and abnormal pubertal development
 - b. Normal psychosocial development
 - c. Pituitary disorders
 - d. Primary amenorrhea
 - e. Breast mass
 - f. Menstrual irregularities
 - g. Dysmenorrhea
 - h. Vulvovaginitis
 - i. Sexuality
 - j. Contraceptive needs
 - k. Sexually transmitted diseases (STDs)
 - l. Pregnancy
 - m. Sexual abuse
 - n. Ovarian diseases and masses
 - o. Endometriosis
 - p. Chronic pelvic pain
2. Obtain a pertinent medical and sexual history from an adolescent patient. (ICS)

3. Perform a physical examination with special attention to the needs of an adolescent patient. (PC, P)
4. Provide for the primary care needs of the adolescent, demonstrating knowledge in areas as specified in Unit 2, I-B-2, “Ages 13–18 years.”
5. Provide patient and parent education in the following areas: (ICS)
 - a. Normal anatomic and psychosocial development
 - b. Personal hygiene
 - c. Menses
 - d. Sexuality
 - e. Prevention of pregnancy and STDs
 - f. Psychosocial concerns
6. Perform or interpret selected tests to confirm the diagnosis of specific gynecologic disorders in an adolescent patient, such as the following: (MK, PC)
 - a. Microbiologic tests
 - b. Endocrinologic assays
 - c. Ultrasonography, sonohysterography, hysterosalpingography, hysteroscopy, and laparoscopy
 - d. Computed tomography or magnetic resonance imaging
7. Treat common adolescent gynecologic disorders medically or surgically: (PC)
 - a. Abnormal pubertal development
 - b. Abnormalities of psychosocial development
 - c. Pituitary disorders
 - d. Primary amenorrhea
 - e. Breast mass
 - f. Menstrual irregularities
 - g. Dysmenorrhea
 - h. Vulvovaginitis
 - i. Sexuality
 - j. Contraceptive needs

- k. STDs
 - l. Pregnancy
 - m. Sexual abuse
 - n. Ovarian diseases and masses
 - o. Endometriosis
 - p. Chronic pelvic pain
8. Describe the indications for referral to a subspecialist. (SBP)
 9. Counsel the patient and her family about the long-term prognosis of her condition on reproduction and sexual function. (ICS)

E. Delayed puberty

1. Describe the principal causes of delayed puberty. (MK)
2. Obtain the focused history of a patient with delayed puberty. (MK, PC, ICS)
3. Perform a physical examination and describe indications for and interpretation of radiologic and endocrinologic tests to evaluate the etiology of delayed puberty. (PC)
4. Describe the treatment options of a patient with delayed puberty. (PC)
5. Describe the indications for referral to a subspecialist. (SBP)
6. Counsel a patient and her family about her long-term follow-up and prognosis and the effect of her condition on reproduction and sexual function. (ICS)

III. MENSTRUAL AND ENDOCRINE DISORDERS

A. Dysmenorrhea

1. Describe the classification of dysmenorrhea (ie, primary versus secondary). (MK)
2. List the principal causes of primary and secondary dysmenorrhea. (MK)
3. Obtain a pertinent history to evaluate dysmenorrhea. (ICS)
4. Perform a focused physical examination to evaluate dysmenorrhea. (PC)

5. Perform and/or interpret indicated tests to evaluate dysmenorrhea. (PC)
6. Describe medical and surgical treatment options for dysmenorrhea. (PC)
7. Describe long-term follow-up and prognosis for a patient with dysmenorrhea, especially regarding reproduction and sexual function. (PC)
8. See Unit 4, II-J, “[Endometriosis and adenomyosis](#).”

B. Abnormal uterine bleeding (See Unit 4, II-A, “[Abnormal uterine bleeding](#)”)

C. Amenorrhea

1. Describe the classification of amenorrhea (ie, primary versus secondary). (MK)
2. List the major causes of primary and secondary amenorrhea. (MK)
3. Obtain a pertinent history to evaluate amenorrhea. (ICS)
4. Perform a focused physical examination to evaluate amenorrhea. (PC)
5. Perform and interpret indicated diagnostic tests to evaluate amenorrhea. (PC)
6. Interpret other indicated serologic and diagnostic tests. (PC)
7. Describe the medical and surgical treatment options for amenorrhea. (MK)
8. Describe the long-term follow-up for a patient with amenorrhea, focusing particularly on the risks of endometrial hyperplasia and hypoestrogenism. (PC)

D. Galactorrhea/Hyperprolactinemia

1. Describe the causes of galactorrhea/hyperprolactinemia. (MK)
2. Obtain a pertinent history to evaluate galactorrhea/hyperprolactinemia. (ICS)

3. Perform a targeted physical examination to evaluate galactorrhea/hyperprolactinemia. (PC)
4. Order and interpret indicated diagnostic studies. (MK, PC)
5. Describe treatment options for galactorrhea/hyperprolactinemia. (PC)
6. Describe the indications for referral to a neurosurgeon for surgical treatment of a pituitary adenoma. (SBP)
7. Describe long-term follow-up for the patient with galactorrhea/hyperprolactinemia/pituitary adenoma focusing particularly on the risk of complications, such as the following: (PC)
 - a. Headaches
 - b. Visual field defects
 - c. Infertility
 - d. Hypoestrogenism
8. Describe the management of patients with a pituitary adenoma in pregnancy. (PC)

E. Premenstrual syndrome (See Unit 2, III-J, “[Premenstrual syndrome and premenstrual dysphoric disorder](#)”)

F. Hirsutism

1. Describe the principal causes of hirsutism. (MK)
2. Obtain a pertinent history to evaluate hirsutism. (ICS)
3. Perform a focused physical examination to evaluate hirsutism. (PC)
 - a. Demonstrate familiarity with the Ferriman–Gallwey scale. (MK)
 - b. Distinguish between hirsutism and virilization. (MK, PC)
4. Perform and interpret indicated tests to determine the etiology of hirsutism. (PC)
5. Describe medical and surgical treatment options for hirsutism. (PC)
6. Describe the indications for referral to a subspecialist. (SBP)
7. Describe long-term follow-up for an affected patient and counsel her about the possible effects on reproduction. (PC, ICS)

G. Polycystic ovary syndrome

1. Describe the diagnostic criteria and clinical features of polycystic ovary syndrome (PCOS). (MK)
2. Describe the pathogenesis of PCOS. (MK)
3. Obtain a pertinent history to evaluate PCOS. (ICS)
4. Perform a focused physical examination to evaluate PCOS. (PC)
5. Perform and/or interpret indicated tests to determine the diagnosis. (PC)
6. Describe the medical treatment for PCOS in patients who do not desire pregnancy. (PC)
7. Describe the medical and/or surgical treatment for PCOS in patients who desire pregnancy and require ovulation induction. (PC)
8. Describe the indications for referral to a subspecialist. (SBP)
9. Describe the long-term follow-up for an affected patient that includes consultation about the effects of ovulatory dysfunction and insulin resistance on reproduction and long-term health, and metabolic syndrome. (PC, ICS)

H. Recurrent pregnancy loss

1. Describe the criteria for and causes of recurrent first-trimester and mid-trimester pregnancy loss. (MK)
2. Obtain a pertinent history in a patient with recurrent first-trimester and mid-trimester pregnancy losses, including issues such as the following: (ICS)
 - a. Family history and pedigree analysis
 - b. Detection of underlying medical disorders
 - c. Exposure to toxins
 - d. Identification of a hereditary thrombophilia
3. Perform a focused physical examination to identify possible causes of recurrent first-trimester and mid-trimester pregnancy loss, such as the following: (PC)
 - a. Genital tract malformations
 - b. Sequelae of long-term diabetes/uncontrolled diabetes

4. Perform and interpret the results of indicated diagnostic tests and procedures to determine the etiology of recurrent early pregnancy loss. (PC)
5. Describe medical and surgical treatment options for patients with a history of recurrent pregnancy loss depending on etiology. (PC)
6. Describe the indications for referral to a subspecialist. (SBP)
7. Counsel patients about the prognosis for successful treatment of recurrent pregnancy loss. (ICS)

IV. INFERTILITY

A. Evaluation

1. Describe the classification of infertility (ie, primary versus secondary). (MK)
2. List the principal causes of primary and secondary infertility. (MK)
3. Obtain a pertinent history of both partners to evaluate infertility. (ICS)
4. Perform a focused physical examination to evaluate infertility. (PC)
5. Perform and/or interpret selected diagnostic tests and procedures to determine the most likely cause of infertility. (PC)
6. Describe treatment options with infertile patients who have irregular ovulation, nongonadotropin therapy. (PC)
7. Describe risks/benefits/indications/alternatives for surgical procedures to treat infertility. (PC)
8. Describe the indications for referral to a subspecialist. (SBP)
9. Counsel patients about the long-term prognosis for their conditions and alternatives to childbearing, such as adoption, donor gametes, surrogacy. (ICS, P)
10. Counsel patients regarding sexual activity during fertility treatment. (ICS)

B. Reproductive technologies

1. Describe indications for assisted reproductive technology procedures, such as the following: (MK)
 - a. In vitro fertilization (IVF)
 - b. Gamete intrafallopian transfer (GIFT)
 - c. Zygote intrafallopian transfer (ZIFT)
 - d. Intracytoplasmic sperm injection (ICSI)
 - e. Gamete donation
 - f. Preimplantation genetic diagnosis
2. Describe the prognosis for and complications of assisted reproductive technology. (MK)

C. Ethical considerations

1. Describe the ethical implications surrounding fertility treatment. (MK, P, ICS)
2. Describe the health care resource allocation concerns pertaining to diagnosis and treatment of infertility. (MK, P, ICS)

V. MANAGEMENT OF THE CLIMACTERIC

A. Evaluation (MK, PC)

1. Describe typical symptoms experienced by a woman at the time of menopause.
2. Perform a focused physical examination on a menopausal patient.
3. Interpret selected laboratory tests to evaluate menopause.
4. Assess the risk of osteoporosis by history, examination, and testing (including the use of the risk assessment tools, such as the FRAX score).

B. Management

1. Manage perimenopausal and menopausal conditions, including osteoporosis, using interventions, such as the following: (PC)
 - a. Pharmacologic treatment, including hormonal and non-hormonal

- b. Nonpharmacologic treatments, including behavioral and lifestyle modifications
2. Discuss the long-term follow-up indicated for menopausal patients on continued hormonal therapy or osteoporosis treatment. (MK)
3. Counsel patients regarding physical, emotional, and relationship-based issues concerning female sexuality and aging. (ICS)
4. Describe the indications for and interpret the results of other screening tests that should be performed in menopausal patients (see Unit 2, I, “[Periodic Health Assessments](#)”).
5. Diagnose and manage common sexual dysfunctions in perimenopausal and menopausal women. (MK, PC)

PROCEDURES

The table at the end of Unit 4, [Gynecology](#), provides a detailed list of the gynecologic procedures with which residents should be familiar. The following table lists the additional procedures that are specific to reproductive endocrinology and summarizes the level of technical proficiency that should be achieved by graduating residents. Residents should either understand a procedure (including indications, contraindications, and principles) or be able to perform it independently. These distinctions are based on the premise that knowledge of a procedure is implicit in the ability to perform it.

Procedure	Understand	Understand and Perform
Assisted reproductive technologies		
Gamete donation	X	
GIFT	X	
ICSI	X	
IVF	X	
Preimplantation genetic diagnosis	X	
Hysterosalpingography	X	
Hysteroscopic resection of uterine septum	X	
Hysteroscopy		
Diagnostic		X
Operative		
Polyp resection		X
Submucosal fibroid resection		X
Incision of vaginal septum	X	
Laparoscopy		
Diagnostic		X
Operative		
Chromopertubation		X
Fimbrioplasty	X	
Lysis of adhesions		X
Treatment of endometriosis		X

Procedure	Understand	Understand and Perform
Metroplasty, abdominal	X	
Sonohysterography		X
Tubal anastomosis	X	
Vaginal reconstruction	X	

Unit 6

ONCOLOGY

The detection and treatment of gynecologic malignancies are important objectives in gynecologic practice. Although a select group of physicians devote their full practices to the care of patients with gynecologic malignancies, residents in obstetrics and gynecology should become familiar with the therapeutic principles underlying the treatment of these patients and, more important, the identification of patients who are at risk of or who may already have malignancies of the pelvic organs or breast.

Much of the improvement in the survival of women with gynecologic cancer can be attributed to more reliable screening techniques and an enhanced awareness of early symptoms on the part of both physicians and patients. Because the distinction between a precursor lesion and its malignant counterpart is often subtle, knowledge of both premalignant and malignant lesions of the reproductive tract is necessary. The treatment—whether surgical, radiologic, or chemotherapeutic—of a particular patient may or may not fall to the practicing general gynecologist, but he/she is expected to provide education, counseling, and follow-up for these patients. To do so, residents must possess a basic understanding of the principles underlying radiation therapy, chemotherapy, and terminal care.

I. BASIC SCIENCE/MECHANISMS OF DISEASE

A. Genetics (MK)

1. Describe the clinical relevance of oncogenes and tumor suppressor genes.
2. Describe the inheritance patterns for malignancies of the pelvic organs and breast.

3. Describe the current indications for screening for *BRCA1*, *BRCA2*, and hereditary nonpolyposis colorectal cancer (HNPCC), also known as Lynch syndrome.
4. Describe the cell replication cycle and identify the phases of the cycle most sensitive to radiation therapy and chemotherapy.

B. Physiology (MK)

1. Describe the ability of vital organ systems to tolerate cancer therapy and define the concept of therapeutic index.
2. Describe the changes in cell and organ physiology that result from injury due to radiation therapy and chemotherapy.

C. Embryology and developmental biology (MK)

1. Describe the embryology of gonadal migration and its role in the pathogenesis of epithelial and germ cell neoplasms.
2. Describe the embryologic origins of cell types found in benign and malignant germ cell tumors.

D. Anatomy (MK)

1. Describe the anatomy of the anterior and posterior abdominal wall.
2. Describe the anatomy of the pelvic floor retroperitoneal and para-aortic spaces.
3. Describe the gross and histologic anatomy of the external genitalia, pelvic organs, and the breast.
4. Describe the vascular, lymphatic, and nerve supply to the breast, external genitalia, and each of the pelvic organs.
5. Describe the anatomic relationship between the reproductive organs and the nongynecologic abdominal and pelvic viscera (ie, bladder, ureters, and bowel).
6. Describe the likely changes in the anatomic relationships of the pelvic and abdominal viscera created by surgical or radiation treatment for a malignancy of the pelvic organs.

E. Pharmacology (MK)

1. List the major chemotherapeutic agents used for treatment of malignancies of the reproductive organs and breast.
2. Describe the principal adverse effects of these major chemotherapeutic agents.
3. List supportive care methods/medications that can be used to ameliorate the following treatment complications:
 - a. Marrow suppression
 - b. Nausea and vomiting
 - c. Hemorrhagic cystitis
 - d. Peripheral neuropathy
 - e. Renal toxicity
 - f. Cardiac toxicity

F. Pathology and neoplasia (MK) ←

1. Describe the histology of malignant and premalignant conditions of the pelvic organs and breast.
2. Describe risk factors that contribute to the pathogenesis of malignancies of the pelvic organs and breast.
3. Describe the prognosis for the major malignancies of the breast and pelvic organs.

G. Microbiology and immunology (MK)

1. Describe the role of viruses in the pathogenesis of gynecologic tumors.
2. Describe the influence of immunosuppression on the risk of acquiring a type of gynecologic cancer.
3. Describe the effect of cancer and its therapies on the immune system.
4. List the principal consequences of immunosuppression in the cancer patient (eg, increased susceptibility to infection and poor wound healing).

II. CARCINOMA OF THE BREAST

A. Epidemiology and risk assessment of breast cancer

1. Evaluate a patient's personal or family history of breast cancer, including the risk associated with *BRCA1* or *BRCA2*. (PC)
2. Evaluate other epidemiologic factors to assess a woman's risk of developing breast cancer, such as the following: (PC)
 - a. Patient age
 - b. Parity
 - c. Ethnicity
 - d. Lactation
 - e. Hormone replacement
 - f. Alcohol consumption
3. Counsel patients regarding breast cancer prevention strategies. (ICS)
4. Counsel patients regarding the use of screening methods, such as mammography. (ICS)
5. Refer patients appropriately for genetic counseling and testing. (PC, SBP)

B. Diagnosis of invasive carcinoma of the breast

1. Obtain a focused history and perform a physical examination in women with signs or symptoms of breast cancer. (PC, ICS)
2. Order and explain to the patient appropriate diagnostic tests for evaluating a suspicious breast lesion. (PC, ICS)
3. Describe the indications for and interpret the results of needle aspiration of a breast cyst and fine needle biopsy of a solid lesion for the patient. (PC, ICS)
4. Describe the indications for and interpret for the patient the results of other diagnostic studies, such as the following: (PC)
 - a. Mammography
 - b. Ultrasonography
 - c. Magnetic resonance imaging
 - d. Core-needle biopsy
 - e. Excisional biopsy

C. Management of invasive breast cancer (MK)

1. Describe the staging of breast cancer and the prognostic significance of histologic type, regional lymph node metastasis, distant metastasis, and hormone receptor status.
2. Describe the indications for lumpectomy compared with mastectomy.
3. Describe the indications for adjuvant therapy with hormonal treatment, chemotherapy, or radiation therapy.
4. Describe the effect of pregnancy on the treatment and prognosis of breast cancer.

D. Breast cancer survivorship

1. Describe the psychosocial effect of breast cancer on family dynamics, sexuality, and stress management and make appropriate referral to support groups and health care professionals. (PC, SBP)
2. Manage the adverse effects of antiestrogen medications, such as tamoxifen and aromatase inhibitors. (PC)

III. VULVAR AND VAGINAL MALIGNANCIES**A. Preinvasive lesions**

1. Describe the epidemiology of vulvar intraepithelial neoplasia (VIN) and vaginal intraepithelial neoplasia (VAIN). (MK)
2. Describe the clinical manifestations of VIN and VAIN. (MK)
3. Describe the differential diagnosis of pigmented and non-pigmented vulvar and vaginal lesions. (MK)
4. Perform and interpret the results of diagnostic procedures for VIN and VAIN. (PC)
5. Perform surgical and/or medical treatment for patients with VIN and VAIN. (PC)
6. Establish a posttreatment follow-up plan for patients with VIN and VAIN. (SBP)
7. Describe the structural and histologic changes in the vagina characteristic of in utero exposure to diethylstilbestrol. (MK)

B. Invasive vulvar carcinoma

1. Describe the epidemiology of invasive vulvar lesions, such as the following: (MK)
 - a. Melanoma
 - b. Squamous cell carcinoma
 - c. Basal cell carcinoma
 - d. Paget disease
 - e. Sarcoma
 - f. Verrucous carcinoma
 - g. Bartholin gland carcinoma
2. Describe the clinical manifestations of invasive vulvar malignancies. (MK)
3. Describe the differential diagnosis of vulvar cancer. (MK)
4. Perform appropriate biopsies to diagnose vulvar carcinoma. (PC)
5. Describe the staging of invasive vulvar cancer using the system adopted by the International Federation of Gynecology and Obstetrics (FIGO). (MK)
6. Counsel a patient about the evaluation and treatment (indications and complications) of vulvar cancer. (PC, ICS)
7. Describe the prognosis for invasive vulvar malignancies. (MK)
8. Describe the effect of treatment of vulvar cancer on sexual function and manage/refer the patient appropriately. (MK, PC, SBP)
9. Provide psychosocial support and long-term follow-up for patients with vulvar cancer. (PC, ICS, SBP)

C. Invasive carcinoma of the vagina

1. Describe the epidemiology of invasive vaginal cancer, such as the following:
 - a. Squamous cell carcinoma (MK)
 - b. Clear cell adenocarcinoma (MK)
2. Describe the clinical manifestations of invasive vaginal cancer. (MK)
3. Describe the differential diagnosis of invasive vaginal cancer. (MK)

4. Perform appropriate biopsies to diagnose vaginal cancer. (PC)
5. Describe the staging of invasive vaginal cancer using the system adopted by FIGO. (MK)
6. Counsel the patient regarding the evaluation and treatment (indications and complications) of vaginal cancer. (PC, ICS)
7. Describe the prognosis for invasive vaginal cancer. (MK)
8. Describe the effect of treatment of vaginal cancer on sexual function and manage/refer patients appropriately. (MK, PC, SBP)
9. Provide psychosocial support and long-term follow-up for patients with vaginal cancer. (PC, ICS, SBP)

IV. CERVICAL DISORDERS

A. Preinvasive cervical disease

1. Describe the epidemiology of cervical dysplasia. (MK)
2. Obtain a pertinent history in a woman with an abnormal Pap test. (PC)
3. Interpret Pap test reports using the Bethesda classification system and determine appropriate follow-up. (PC)
4. Perform and interpret the results of diagnostic procedures for cervical dysplasia. (PC)
5. Develop an age-appropriate treatment plan for cervical dysplasia with modalities, such as the following: (PC)
 - a. Cryosurgery
 - b. Laser ablation
 - c. Loop electrosurgical excision procedure
 - d. Cold knife conization
 - e. Observation/close follow-up
6. Manage the complications that result from treatment of cervical dysplasia. (PC)
7. Establish an appropriate follow-up plan for a woman who has been treated for cervical dysplasia. (PC)
8. Describe the structural changes in the cervix that are characteristic of in utero diethylstilbestrol exposure. (MK)

9. Counsel patients regarding the use of vaccinations for the prevention of human papillomavirus-related diseases. (MK)

B. Invasive cervical cancer

1. Describe the epidemiology of cervical cancer. (MK)
2. Describe the typical clinical manifestations of cervical cancer. (MK)
3. Describe the differential diagnosis of cervical cancer. (MK)
4. Perform appropriate biopsies to diagnose invasive cervical cancer. (PC)
5. Describe the staging of cervical cancer using the system adopted by FIGO. (MK)
6. Counsel the patient about the evaluation and treatment (indications and complications) of cervical cancer. (PC, ICS)
7. Describe the prognosis for cervical cancer. (MK)
8. Describe the effect of treatment of cervical cancer on sexual function and manage/refer patients appropriately. (MK, PC, SBP)
9. Provide psychosocial support and long-term follow-up for patients with cervical cancer. (PC, ICS, SBP)

V. CARCINOMA OF THE UTERUS

A. Endometrial hyperplasia

1. Obtain a targeted history in patients who have abnormal uterine bleeding, including an assessment of risk factors, such as the following: (PC, ICS)
 - a. Obesity
 - b. Anovulation
 - c. Polycystic ovary syndrome
 - d. Glucose intolerance
 - e. Estrogen or antiestrogen (tamoxifen) exposure
 - f. Family history

2. Perform a focused physical examination in women who have abnormal bleeding and risk factors for endometrial hyperplasia. (PC)
3. Describe factors that influence the treatment of hyperplasia, such as the following: (MK)
 - a. Classification and histology
 - b. Age of patient
 - c. Reproduction goals
 - d. Risk of malignancy
4. Treat endometrial hyperplasia medically and surgically. (PC)
5. Describe and manage the potential complications of these interventions. (PC)
6. Describe appropriate posttreatment follow-up. (PC)

B. Carcinoma of the endometrium

1. Describe the epidemiology of endometrial cancer, such as the following: (MK)
 - a. Uterine adenocarcinoma
 - b. Uterine sarcoma
2. Describe the clinical manifestations of endometrial cancer. (MK)
3. Describe the differential diagnosis of invasive endometrial cancer. (MK)
4. Perform biopsies to diagnose endometrial cancer. (PC)
5. Describe the staging of invasive endometrial cancer using the system adopted by FIGO. (MK)
6. Counsel the patient about the evaluation and treatment (indications and complications) of endometrial cancer. (PC, ICS)
7. Describe the prognosis for invasive endometrial cancer. (MK)
8. Provide psychosocial support and long-term follow-up for women with endometrial cancer. (PC, ICS, SBP)

VI. OVARIAN AND TUBAL CARCINOMA

A. Carcinoma of the ovary

1. Describe the epidemiology of ovarian cancer. (MK)
2. Describe the inherited syndromes that increase a woman's likelihood of developing ovarian cancer. (MK)
3. Describe the screening protocols that may identify patients who have an inherited form of ovarian cancer. (MK)
4. Describe the clinical manifestations of ovarian cancer. (MK)
5. Describe the staging of ovarian cancer using the system adopted by FIGO. (MK) Describe the histology, staging, and prognosis for the following: (MK)
 - a. Epithelial tumors
 - b. Germ cell tumors
 - c. Stromal tumors
 - d. Sarcomas
 - e. Metastatic tumors
 - f. Tumors of low malignant potential
6. Interpret for the patient the following tests to diagnose ovarian cancer: (PC, ICS)
 - a. Ultrasonography
 - b. Serum tumor markers
 - c. Cytology from thoracentesis or paracentesis
 - d. Computed tomography scan
7. Counsel the patient about the evaluation and treatment (indications and complications) of ovarian cancer. (PC, ICS)
8. Provide psychosocial support and long-term follow-up for women with ovarian cancer. (PC, ICS, SBP)

B. Carcinoma of the fallopian tube

1. Describe the epidemiology of fallopian tube cancer. (MK)
2. Describe the typical clinical manifestations of fallopian tube cancer. (MK)

3. Describe the staging of fallopian tube cancer using the system adopted by FIGO. (MK)
4. Counsel the patient about the evaluation and treatment (indications and complications) of fallopian tube cancer. (PC, ICS)
5. Describe the prognosis of fallopian tube cancer. (MK)
6. Provide psychosocial support and long-term follow-up for women with fallopian tube cancer. (PC, ICS, SBP)

VII. GESTATIONAL TROPHOBLASTIC DISEASE

A. Hydatidiform mole

1. Describe the epidemiology and genetics of hydatidiform mole. (MK)
2. Describe the clinical manifestations of gestational trophoblastic disease (GTD). (MK)
3. Diagnose GTD and its manifestations using tests, such as the following: (PC)
 - a. Ultrasonography
 - b. Quantitative β -hCG titer
 - c. Chest X-ray
 - d. Thyroid function tests
4. Distinguish between a complete and partial hydatidiform mole using histologic and cytogenetic findings. (MK)
5. Provide surgical treatment for a patient with GTD. (PC)
6. Provide the appropriate follow-up for a patient who has had suction evacuation of a molar pregnancy. (PC)
7. Counsel the patient regarding recurrence risk of GTD. (PC, ICS)

B. Malignant gestational trophoblastic disease

1. Describe the risk factors for malignant GTD. (MK)
2. Describe the histologic appearance of invasive mole versus choriocarcinoma versus placental site trophoblastic tumor. (MK)

3. Describe the diagnosis of malignant GTD using a combination of physical examination, β -hCG, chest X-ray, computed tomography scan, and ultrasonography. (MK)
4. Describe the features associated with low-risk versus high-risk GTD. (MK)
5. Counsel patients regarding risk of recurrence and prognosis for future pregnancies. (PC, ICS)
6. Provide psychosocial support and long-term follow-up of patients with GTD. (PC, ICS, SBP)

VIII. THERAPY

A. Radiation therapy

1. Describe the general principles of radiation therapy. (MK)
2. Describe the indications for radiation therapy in the treatment of gynecologic neoplasms and the factors that influence decisions regarding intervention, such as the following: (MK)
 - a. Classification and FIGO staging of disease and histology
 - b. Age of patient
 - c. Underlying medical conditions
 - d. Implications for future fertility
 - e. Concomitant therapy with radiosensitizers or chemotherapy
 - f. Previous abdominal procedures
 - g. Need for palliative management
3. Describe the potential complications of radiation therapy. (MK)

B. Chemotherapy

1. Describe the general mechanisms of action of chemotherapy. (MK)
2. Describe the general indications for chemotherapy in the treatment of gynecologic neoplasms. (MK)
3. Describe the most appropriate indication for chemotherapeutic agents, such as the following: (MK)
 - a. Alkylating agents
 - b. Antimetabolites

- c. Vinca alkaloids
 - d. Antibiotics
 - e. Hormonal agents
 - f. Heavy metals
 - g. Immunotherapy
4. Describe the potential complications of chemotherapy. (MK)
 5. Describe the long-term effects of chemotherapy on fertility. (MK)

C. Terminal care

1. Describe the basic principles of palliative care. (MK)
2. Describe medical, radiation and operative modalities for palliation of symptoms in terminally ill patients. (MK)
3. Describe the appropriate indications for a “do not resuscitate” order. (MK)
4. Describe the medical, ethical, and legal implications of a “do not resuscitate” order. (MK)
5. Describe the concept of therapeutic index when considering medical or operative intervention to improve patients’ quality of life. (MK)
6. Describe the basic principles of pain management and provide appropriate pain control for terminal patients. (MK)

PROCEDURES

The table at the end of Unit 4, [Gynecology](#), provides a detailed list of the gynecologic procedures with which residents should be familiar. The following table lists the additional procedures that are specific to gynecologic oncology and summarizes the level of technical proficiency that should be achieved by graduating residents. Residents should either understand a procedure (including indications, contraindications, and principles) or be able to perform it independently. These distinctions are based on the premise that knowledge of a procedure is implicit in the ability to perform it.

Procedure	Understand	Understand and Perform
Colectomy (partial or total)	X	
Colostomy	X	
Fistula repair		
Enterocutaneous	X	
Ureterovaginal	X	
Hysterectomy		
Extrafascial (with or without bilateral salpingo-oophorectomy)		X
Radical (with or without bilateral salpingo-oophorectomy)	X	
Lumpectomy of breast	X	
Lymph node biopsy/dissection		
Axillary	X	
Inguinal	X	
Para-aortic	X	
Pelvic	X	
Sentinel	X	
Mastectomy		
Radical	X	
Simple	X	
Paracentesis		X
Pelvic exenteration with or without reconstruction	X	
Port placement, intraperitoneal	X	

Procedure	Understand	Understand and Perform
Radiation therapy		
Brachy therapy	X	
External beam	X	
Interstitial	X	
Resection of large and small bowel	X	
Staging laparotomy		
Biopsy of pelvic lymph nodes	X	
Biopsy of peritoneal implants and cytologic washings of the peritoneal cavity	X	
Exploration of abdomen		X
Infracolic omentectomy	X	
Suction evacuation of molar pregnancy		X
Transverse rectus abdominis myocutaneous flap	X	
Vaginal reconstruction		
Gracilis flap	X	
Martius flap	X	
Skin graft	X	
Venous access device placement	X	
Vulvectomy, radical	X	

Unit 7

GENOMICS ↵

The rapid growth and clinical adaptation of genetically based information and technology are fundamentally changing the practice of medicine generally and obstetrics and gynecology specifically. The effect of these changes overarches the traditional divisions used in past editions of *Educational Objectives*.

I. CORE COMPETENCIES

The application of genomic information and technologies must be carried out under the general umbrella of the Accreditation Council on Graduate Medical Education (ACGME) core competencies (see Unit I, “[General Considerations](#)”). Residents are expected to do the following:

- A. Demonstrate caring and respectful behavior when dealing with the genetic information of patients and their families. (P)
- B. Identify areas in clinical genetics where there is significant potential for paternalism, discrimination, or injustice. (P)
- C. Describe the role other (specialized) health care professionals play in the development of genetic information and testing that is used in the clinical setting. (SBP)

II. PRIMARY AND PREVENTIVE AMBULATORY HEALTH CARE

The setting of primary health care services provides a number of opportunities to apply the growing body of information available from genomics or genetically based technologies. Genomics has altered primary and preventive care, from the assessment of breast cancer risk

through the use of a directed family history and selected testing of specifically associated gene variations, to the use of gene-based technology to assess the risk of cervical cancer or to detect sexually transmitted disease.

- A. Describe the general indications for genetically based diagnostics. (PC)
- B. Perform or interpret genetic risk assessment through the following: (PC)
 - 1. Pedigree analysis
 - 2. Gene testing
 - a. Antenatal
 - b. Adult
- C. Describe the sensitivity and specificity of various genetic tests and the implication of these parameters in clinical practice. (PC)
- D. Describe the role of genetics in drug metabolism and individual variation in drug efficacy. (PC)
- E. Describe the factors involved in the development of and recommendations for genetic testing: (PC)
 - 1. Frequency of the condition in the population
 - 2. Nature and range of severity of the condition
 - 3. Treatment, intervention, and/or prevention
 - 4. Reproductive options to avoid or reduce risk
 - 5. Test availability, including prenatal screening and/or diagnostic testing
 - 6. Sensitivity, specificity, and positive predictive value of the test
 - 7. Genotype–phenotype correlation
 - 8. Frequency of gene mutation in general population or selective subgroups based on ethnicity/race
 - 9. Cost and cost-effectiveness of screening
 - 10. Usefulness of test information to individual, to family, and to society

11. Availability of public and professional educational material/ programs
 12. Availability of adequate genetic counseling services for follow-up
 13. Potential for uncertainty of tests results
 14. Potential for psychological, emotional, or physical harm to patient
 15. Potential for misuse of information and genetic discrimination
- F. List the types of genetic abnormalities that may result in clinically significant abnormalities. (MK)
1. Deletions
 2. Duplications
 3. Trinucleotide repeats
- G. Describe stem cells and potential uses of stem cell technology. (MK)

III. OBSTETRICS ↩30↩32

The passage of genetic information from one generation to the next is the ultimate demonstration of genomics in action. The obstetrician's presence during this event demands both an understanding of genetics and genomics and the use of this understanding for the good of the patient, her family, and her unborn baby.

A. Basic mechanism of genetic inheritance

1. Describe the basic structure and replication of DNA. (MK)
2. Describe the processes of mitosis and meiosis. (MK)
3. Describe common terms associated with genetic expression: (MK)
 - a. Exon
 - b. Intron
 - c. Codon
 - d. Transcription
 - e. Translation

4. Describe the clinical significance and phenotypes associated with common karyotype abnormalities, such as the following: (PC)
 - a. Trisomy
 - i. 13
 - ii. 8
 - iii. 21
 - b. Polyploidy
 - c. Monosomy
 - d. Sex chromosome abnormalities
 - e. Deletions
 - f. Inversions
 - g. Translocations
 - h. Mosaicism
 - i. Chimerism
5. Describe the normal process of gametogenesis. (MK)
6. Describe the normal process of fertilization and the combination of genetic information. (MK)

B. Clinical implications of heritable disease

1. Describe the clinical significance of heritable diseases, such as cystic fibrosis, Tay–Sachs disease, and hemophilia. (PC)
2. Counsel patients about the techniques for and implications of testing for heritable diseases. (PC, ICS)
3. Describe treatment and surveillance options for patients or newborns with genetically derived disease. (PC)

C. Genetic counseling

1. Obtain a history for inherited disorders, ethnic-specific or race-specific risks, and teratogen exposure. (PC)
2. Describe screening techniques for couples at risk of the following: (MK)
 - a. Cystic fibrosis
 - b. Canavan disease
 - c. Tay–Sachs disease

- d. Familial dysautonomia
 - e. Sickle cell disease and other hemoglobinopathies
 - f. Fragile X syndrome
 - g. Neural tube defects
3. Describe the concepts of incomplete penetrance and variable expression and the effect on prognosis for a given genetic disorder. (MK, PC)
 4. Distinguish between various patterns of genetic inheritance. (MK)
 - a. Mendelian modes to include the following:
 - (1) Autosomal dominant
 - (2) Autosomal recessive
 - (3) X-linked
 - b. Nonmendelian modes to include the following:
 - (1) Mitochondrial
 - (2) Genomic imprinting
 - (3) Multifactorial and polygenic
 - (4) Mitochondrial
 - (5) Hereditary unstable DNA
 5. Counsel patients about the manifestations of common genetic disorders. (PC, ICS)
 6. Describe the indications for and limitations of noninvasive diagnostic tests for fetal aneuploidy and structural malformations (eg, ultrasonography, serum analytes, and free fetal DNA). (PC, SBP)
 7. List the genetic disorders often associated with the following ultrasound findings: (PC)
 - a. Duodenal atresia
 - b. Omphalocele
 - c. Nuchal translucency/nuchal skin fold
 - d. Echogenic bowel
 - e. Heart defects
 - f. Diaphragmatic hernia
 - g. Ventriculomegaly

8. Counsel patients about the risks and benefits of various methods of invasive fetal testing, such as the following: (PC, ICS)
 - a. Chorionic villus sampling
 - b. Amniocentesis
 - c. Cordocentesis
 - d. Preimplantation genetic testing
9. Order and interpret appropriate maternal and fetal/neonatal tests to evaluate possible causes of fetal demise. (PC)
10. Counsel a patient with an abnormal fetus regarding management options. (PC, SBP, ICS)
11. Counsel a patient and her family after an adverse pregnancy outcome about such factors as recurrence, future care, and possible interventions. (PC, SBP, ICS)
12. Counsel a patient and other health care professionals about fetal effects from exposure to various pharmacologic agents or to indicated diagnostic studies that involve the use of ionizing radiation. (PC, ICS)
13. Counsel a patient about the genetic implications of advancing maternal and paternal age. (PC, ICS)

D. Uses for umbilical cord stem cells

1. Describe the indications and uses for umbilical cord stem cells. (PC, MK, ICS)
2. Counsel patients on the advantages and disadvantages of umbilical cord blood banking. (PC, MK, ICS)

IV. GYNECOLOGY

The practice of gynecology is no less affected by the rapidly growing developments in the fields of genetics and genomics.

A. Basic mechanism of genetic inheritance

1. Describe the inheritance of hemoglobinopathies. (MK)
2. Summarize the genetic basis for hereditary cancer syndromes, such as the following in women: (MK)
 - a. Breast cancer
 - b. Colon cancer

- c. Ovarian cancer
 - d. Endometrial cancer
3. Describe the implications of the integration of viral genetic information into normal cervical cells. (MK)

B. Clinical implications of genetic inheritance

1. Describe the role of genetics in the following: (MK)
- a. Spontaneous abortion, including the incidence and types of chromosome abnormalities in abortuses
 - b. Recurrent abortion
 - c. Uterine leiomyomas

V. REPRODUCTIVE ENDOCRINOLOGY ⇐

Much of the processes related to reproductive endocrinology are directly or indirectly related to the biologic imperative to pass on genetic material.

- A. Discuss the basic mechanism of genetic inheritance.
1. Describe the genetic basis of the following conditions: (MK)
 - a. Normal and abnormal müllerian development
 - b. Disorders of androgen excess
 - c. Repetitive pregnancy loss
 - d. Ambiguous genitalia
 2. Describe the principles of preimplantation genetic diagnosis for single gene disorders, translocations, and aneuploidies. (MK)
 3. Describe mendelian and nonmendelian patterns of inheritance. (MK)
 - a. Mendelian modes to include:
 - (1) Autosomal dominant
 - (2) Autosomal recessive
 - (3) X-linked
 - b. Nonmendelian modes to include:
 - (1) Mitochondrial
 - (2) Genomic imprinting
 - (3) Multifactorial and polygenic

- (4) Mitochondrial
- (5) Hereditary unstable DNA
- B. List the role of genetics in the development and evaluation of infertility. (MK)
 - 1. Male
 - a. Klinefelter syndrome
 - b. Congenital vas deferens absence and azoospermia
 - c. Y-chromosome deletions
 - 2. Female
 - a. Age-related aneuploidy
 - b. Diminished ovarian reserve/premature ovarian failure
- C. Describe the role of genetics in the timing of both normal and abnormal menopause. (MK)

VI. ONCOLOGY

Our understanding of malignancy and its treatments has been fundamentally altered by developments in the fields of genetics and genomics.

A. Basic mechanism of genetic inheritance

- 1. Describe the clinical relevance of viral/other oncogenes and of tumor suppressor genes. (MK)
- 2. Describe the mechanisms of actions of oncogenes to include the following: (MK)
 - a. Transduction
 - b. Translocation
 - c. Point mutation
 - d. Insertion mutation
 - e. Amplification
- 3. Describe the inheritance patterns for malignancies of the pelvic organs and breast. (MK)
- 4. Describe the current indications for screening for *BRCA1* and *BRCA2*. (MK)
- 5. Describe the cell replication cycle and identify the phases of the cycle most sensitive to radiation therapy and chemotherapy. (MK)

6. Describe the association of other mutations, such as p53 and *PTEN* mutations, with other cancer syndromes. (MK)

B. Embryology and developmental biology

1. Describe the embryology of gonadal migration and its role in the pathogenesis of epithelial and germ cell neoplasms. (MK)
2. Describe the embryologic origins of cell types found in benign and malignant germ cell tumors. (MK)

C. Epidemiology and risk assessment of gynecologic cancer

1. Evaluate a patient's personal or family history of breast cancer, including the risk associated with *BRCA1* or *BRCA2*. (PC)
2. Describe the inherited syndromes that increase a woman's likelihood of developing ovarian cancer. (MK)
3. Describe the genetics of familial syndromes (eg, hereditary nonpolyposis colorectal cancer, also known as Lynch syndrome). (PC)
4. Describe the screening protocols that may identify patients who have an inherited form of ovarian cancer. (PC)
5. Describe the epidemiology and genetics of hydatidiform mole. (MK)

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