

Educational Objectives
Core Curriculum
in Obstetrics and Gynecology

Ninth Edition



COUNCIL ON RESIDENT EDUCATION IN OBSTETRICS AND GYNECOLOGY

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Educational Objectives: Core Curriculum in Obstetrics and Gynecology, Ninth 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 ninth edition differs from previous editions in that we have linked each major learning objective to one of the six ACGME general competencies: Medical Knowledge (MK); Patient Care (PC); Professionalism (P); Interpersonal and Communication Skills (ICS); Practice Based Learning & Improvement (PBLI); and Systems Based Practice (SBP). We have done this to assist program directors as they use these Educational Objectives to construct the goals and objectives for each of the rotations within their individual programs. 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 the *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 residency. This edition of the *Educational Objectives* retains the overall format of prior editions and includes summary Tables at the end of each unit delineating the procedures a resident should either understand or be able to perform independently at the time of graduation.

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

Members of the CREOG Education Committee developed *Educational Objectives: Core Curriculum in Obstetrics and Gynecology, Ninth 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.

Jessica L. Bienstock, MD, MPH
Committee Chair



General Considerations

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 below 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:

- 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 cognate (e.g., epidemiological and social-behavioral) sciences and apply this knowledge to patient care. Residents are expected to:

- A. Demonstrate an investigatory 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:

- 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. Elicit and provide information using effective listening, non-verbal, explanatory, questioning, and writing skills. (ICS, P)

- D. Communicate effectively with patients in language that is appropriate to their age and educational, cultural, and socioeconomic background. (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:

- 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 (i.e., positive attitude, 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 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 healthcare decision making, including the elements that must exist and the specific components of an informed-consent discussion. (P, ICS, PC)
- G. The resident must 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. Discuss surrogate decision making for incapacitated patients, including who can and should act as a proxy decision maker and what standards they should use to make healthcare choices for another. (P, PC, ICS)
- I. The resident should be able to examine their personal values and preferences for end-of-life treatment and the values of diverse patients. (P, PBLI)
- J. Differentiate between institution-based 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. Discuss 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. Discuss the principle of justice and the use of limited medical resources. (P, MK)
- M. Discuss the differences in ethical decision making if the patient is an adult or a child. (P, PC)
- N. Discuss ethical implications of commonly used ob/gyn 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. Discuss important issues regarding stress management, substance abuse, and sleep deprivation.
 - 1. List preventive stress-reduction activities and describe their value. (P, MK)
 - 2. Identify the warning signs of excessive stress or substance abuse within one's self and in others. (P, MK, ICS)
 - 3. Intervene promptly when evidence of excessive stress or substance abuse is exhibited by oneself, family members, or professional colleagues. (P, ICS, MK, PC)
 - 4. Understand the signs of sleep deprivation and intervene promptly when they are exhibited by oneself 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, age, 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 of 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:

- 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. Understand the processes for obtaining licensure, receiving hospital privileges and credentialing. (SBP, PC, P, ICS)
- B. 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. Discuss 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)
- C. Practice cost-effective health care and resource allocation that does not compromise quality of care. (SBP, PC, P)
- D. Advocate for quality patient care and assist patients in dealing with system complexities. (SBP, ICS, P)
 1. Recognize that social, economic and political factors are powerful determinants of health and incorporate these factors into how they approach patient care.
 2. Demonstrate knowledge of disparities in health and health care in a variety of populations.
 3. Recognize the role of the women's health provider to advocate for patients, particularly poor and vulnerable women, and to help develop methods of care that are effective, efficient, and accessible to all women.
 4. Be aware of ACOG and community resources and advocacy on behalf of underserved and vulnerable populations such as poor women and teenagers.

5. Learn to communicate effectively about women's health concerns to family and community groups.
 6. Recognize the role of the physician in legislation as it relates to women's health policy.
- E. 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 QI 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)
- F. 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)
- G. 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)

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 and should be recognized as essential components in the practice of obstetrics and gynecology. Even when certain disorders extend beyond the scope of their practice 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, the resident should appreciate the effects of age; racial, ethnic, and cultural backgrounds; sexual orientation; personality; mental status; 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)

B. Perform routine screening for selected diseases

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

1. Ages 12 years and younger

For the preadolescent patient, the obstetrician–gynecologist usually serves as a consultant. All 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 under 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 under 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. Perform a Pap test for sexually active adolescents in accordance with current guidelines. (PC, P)
- c. Assess reproductive concerns, such as: (P, PC, MK)
 - (1.) Family planning
 - (2.) Prevention of STIs
 - (3.) Pregnancy care
 - (4.) Infertility
- d. Test sexually active adolescents for sexually transmitted infections (STIs), such as: (PC, P)
 - (1.) Gonorrhea

- (2.) Chlamydia
- (3.) Syphilis
- (4.) Hepatitis B
- (5.) Human immunodeficiency virus (HIV) infection
- e. Counsel adolescents about the use of automobile safety belts and bicycle helmets. (PC, ICS, P)
- f. Evaluate psychosocial well-being, including issues regarding abuse. (PC, ICS, P)
- g. Assess nutritional and growth status. (PC, P)

3. Ages 19–39 years

The obstetrician–gynecologist usually is the chief care provider for women ages 19–39 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 sexuality. (MK, P)
- b. Assess reproductive concerns, such as: (P, PC, MK)
 - (1.) Family planning
 - (2.) Prevention of STIs
 - (3.) Pregnancy care
 - (4.) Infertility
- c. Treat menstrual disorders, such as: (PC, MK, P)
 - (1.) Amenorrhea
 - (2.) Oligomenorrhea
 - (3.) Abnormal uterine bleeding
- d. Manage breast disorders, such as: (PC, MK)
 - (1.) Mastitis
 - (2.) Galactorrhea

(3.) Mastodynia

- 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)

4. Ages 40–64 years

Women ages 40–64 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: (PC, MK, P)
 - (1.) Family planning until menopause
 - (2.) Prevention of STIs
 - (3.) Pregnancy care (e.g., 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 osteoporosis.
- c. Assess risks for cancers (e.g., lung, breast, endometrium, ovary, colon, and skin). (PC, MK, P)
- d. Evaluate psychosocial risks and well-being including issues of abuse. (PC, ICS, P)
- e. Describe the appropriate interventions to prevent fractures in older women. (MK)
- f. List the major risk factors for cardiovascular disease. (MK)

- g. Assess risks for cancers (e.g., lung, breast, endometrium, ovary, colon, and skin). (PC, MK)
- h. Describe the appropriate assessment for urinary and fecal incontinence. (PC, MK)

5. *Ages 65 years and older*

The goal of health maintenance in older women 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: (MK)
 - (1.) Depression
 - (2.) Emotional abuse or neglect
 - (3.) Change in sexual function
- c. Describe the appropriate interventions to prevent fractures in older 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 risks for cancers (e.g., 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 geriatric patients. (MK)
- i. Summarize age-related changes in common laboratory values. (MK)
- j. Assess nutritional status. (PC, MK)
- k. Perform a basic assessment of functional status including: (PC, MK, P)

- (1.) Activities of daily living
- (2.) Mini-mental status examination
- (3.) Capacity for independent decision making

C. Counsel patients

Counseling encourages patients to adopt healthy behaviors 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 and health maintenance behaviors at least annually. Counseling should include factors such as: (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. Interventions to prevent accidents in the home and work-place.
7. Interventions for preserving good dental health, such as regular tooth brushing and flossing and regular dental appointments.
8. Psychosocial issues

D. Provide immunizations (PC, MK)

Describe the appropriate indications for selective immunizations such as Human Papilloma Virus (HPV), rubella, measles, varicella, hepatitis A and B, influenza, pneumococcal infection, tetanus, and diphtheria.

II. Special Gynecologic Conditions

A. Contraception

The gynecologist is in a unique position to serve as a resource person for the community or the individual regarding family planning and 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 side effects. (P, PC, MK, ICS, PBLI)

1. Define the 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 providers and users of contraception. (PBLI)
4. Describe the impact 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. Elicit 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:
 - 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
10. Describe the pharmacology of hormonal contraception.
 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

One should be able to counsel pregnant patients on all the alternatives available to them, including induced abortion. 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. Elicit 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: (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. Describe the possible psychologic aftermath of induced abortion. (PC, MK, P)

C. Sexuality

The obstetrician–gynecologist should understand the concepts of sexual development and identity, as well as the psychology of sexual relations. 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 disorders of sexual function. (PC, ICS, PBLI)

1. Describe the stages of the normal sexual response: desire, arousal, orgasm, resolution, and refractory period. (MK)
2. Describe the principal disorders of sexual function, including: (PC, MK)
 - a. Hypoactive sexual desire disorder
 - b. Female sexual arousal disorder
 - c. Sexual aversion disorder
 - d. Female orgasmic disorder
 - e. Vaginismus
 - f. Dyspareunia
3. Elicit a complete sexual history. (PC, ICS)
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 background, religious/moral beliefs, age, and social situation.

7. Understand the effects of age and menopause on sexual function, and be able to discuss these effects with patients.
8. Know the effects of common medications on sexual function.
 - a. Contraceptives
 - b. Antidepressants and antipsychotics
 - c. Antihypertensives
 - d. Anti-epileptics
 - e. Illicit drugs (alcohol, 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 lesbian women. (PBLI, P)

1. Display sensitivity to sexual preferences and describe ways to promote an office environment that is respectful of patients' 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)

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 patients' 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 transgendered patient.

4. Refer, when appropriate, to specialists, such as reproductive endocrinologists, urologists and urogynecologists.

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. Discuss the principal types of violence against women of all ages:
 - a. Incest
 - b. Rape
 - c. Physical abuse
 - d. Psychologic abuse
2. Elicit 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)

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. Elicit 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 impact of environmental allergens and initiate basic medical treatment for allergic rhinitis. (P, PC, ICS)

B. Respiratory tract infection

1. Discuss the differential diagnosis of respiratory tract infection. (MK)
2. Elicit 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 to diagnose respiratory tract infection, such as: (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. Elicit 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: (MK)
 - a. Forced expiratory volume in 1 second (FEV₁)
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. Elicit 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: (PC, MK)
 - a. Acute diarrhea
 - b. Constipation
 - c. Diverticulosis/diverticulitis
 - d. Gastroenteritis
 - e. Gastroesophageal reflux
 - f. Irritable bowel syndrome
2. Elicit 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 headache. (MK)
2. Elicit a pertinent history and perform a focused physical examination to evaluate a patient with headaches. (PC, ICS, P)
3. Treat muscle tension, mild migraine and menstrual migraine headaches. (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. Discuss the differential diagnosis of depression. (MK)
4. Describe the use and interpretation of screening instruments for the identification of depression. (PC, MK)
5. Elicit a pertinent history from a patient with signs of depression. (PC, ICS, P)
6. Identify patients at risk for 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 (PMS) and premenstrual dysphoric disorder (PMDD)

1. Define premenstrual symptoms, PMS, and 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. Elicit 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, non-prescription analgesics and prescription medications. (PC)

K. Anxiety

1. Describe the differential diagnosis of patients with an apparent anxiety disorder. (MK)

2. Elicit 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: (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's 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 mellitus

1. Describe the American Diabetes Association classification of diabetes mellitus. (MK)
2. Describe risk factors for diabetes mellitus. (PC, MK)
3. Describe signs and symptoms of diabetes mellitus. (PC, MK)
4. Elicit a pertinent history in a patient with suspected diabetes mellitus. (PC, ICS, P)
5. Describe the criteria for the diagnosis of diabetes mellitus. (MK)
6. Describe the use of diet, oral hypoglycemic agents, and insulin for treatment of diabetes mellitus. (PC, MK)
7. Assess glycemic control by laboratory studies. (PC)
8. Describe indications for referral of patients with diabetes mellitus. (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. Elicit a pertinent history and perform a targeted physical examination to evaluate thyroid disease. (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 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)

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 a graduating resident. The resident 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
Fundoscopic examination (basic)		X
Gastrointestinal endoscopy	X	
Insertion and removal of intrauterine device		X
Insertion and removal of implantable steroid contraception	X	
Peak expiratory flow (FEV ₁) determination		X
Fitting of diaphragm or cervical cap		X
Pulse oximetry		X
Skin biopsy		X
Scraping of skin lesions for microscopy		X
Visual acuity testing (i.e., standard eye chart)		X
Visual field deficit testing	X	



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 compliance with, 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 to perform spontaneous vaginal, operative vaginal, 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 post-graduate level in conjunction with the obstetrics component of the residency curriculum.

Although the obstetrics resident is trained to address a variety of normal and complicated obstetric conditions, the resident should recognize that additional expertise may be required in certain patients and should refer 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 attendants trained in anesthesia, the obstetrician 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 also Genetics and Genomics – Unit 7)

1. Describe the basic structure and replication of DNA. (MK)
2. Describe the processes of mitosis and meiosis. (MK)
3. Describe the clinical significance of karyotype abnormalities, such as: (MK)
 - a. Trisomy
 - b. Monosomy
 - c. Deletions
 - d. Inversions
4. Describe the clinical significance of heritable diseases, such as cystic fibrosis, Tay-Sachs disease, and hemophilia. (MK)

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 and vascular anatomy of the pelvis and vulva. (MK)
2. Describe the anatomic changes in the mother caused by normal physiologic adaptation to pregnancy. (MK)
3. Describe the anatomic changes that occur during the intrapartum period, such as cervical effacement and dilatation. (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 (e.g., iron, folic acid). (MK)
2. Describe the impact of pregnancy on serum and tissue drug concentrations and drug efficacy. (MK)
3. Describe the factors that influence transplacental drug transfer, such as: (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: (MK)
 - a. Tetracycline
 - b. Angiotensin-converting enzyme inhibitors and angiotensin antagonists
 - c. Quinolone antibiotics
 - d. Lithium
 - e. Isotretinoin

- f. Seizure medications
 - g. Depression and anxiolytic medications
5. Describe the possible teratogenic effects of nonprescription drugs, such as: (MK)
- a. Alcohol
 - b. Heroin
 - c. Cocaine
 - d. Tobacco

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 their impact on pregnancy and the timing of delivery. (PC, ICS, P)

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)
4. Describe the association between genital tract infection and adverse perinatal outcomes, such as: (MK)
 - a. Preterm labor
 - b. Preterm premature rupture of membranes
 - c. Neonatal infection
 - d. Maternal infection

II. Antepartum Care

A. Preconception care

1. Perform a thorough history, assessing historical and on-going risks that may affect future pregnancy. (PC, ICS)
2. Counsel a patient regarding the impact of pregnancy on maternal medical conditions. (PC, MK, ICS, P)
3. Counsel a patient regarding the impact 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 and conditions, such as: (MK, ICS, PC, P)
 - a. Advanced age
 - b. Hypertension
 - c. Diabetes
 - d. Genetic disorder
 - e. Prior aneuploid or anomalous fetus/newborn

B. Genetic counseling – (Refer to Genetics and Genomics – Unit 7)

C. Prenatal care

1. Perform a comprehensive history and 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 breast feeding. (ICS, SBP)

D. Antepartum fetal monitoring

1. Describe the indications, contraindications, advantages, and disadvantages of antepartum diagnostic tests, such as: (MK, PC)
 - a. Nonstress test
 - b. Contraction stress test
 - c. 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. 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: (MK, PC)
 - a. Fetal malformations
 - b. Disturbances in fetal growth

c. Diabetic ketoacidosis

5. 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. (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: (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. Perform a focused history and 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 impact. (PC)
4. Describe the possible adverse maternal and fetal effects of antibiotics 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 impact 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.
5. Counsel patients about the impact of pregnancy on cardiopulmonary disease and the impact of these diseases 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. Perform a history and 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 impact of gastrointestinal disease on pregnancy and the impact 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. Perform a focused history and 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 impact of pregnancy on neurologic disease and the impact 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. Perform a focused history and 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, such as: (MK, PC)
 - a. Thyroid function tests
 - b. Adrenal function tests
 - c. Pituitary function tests
 - d. Imaging studies
3. Counsel patients about the impact of an endocrine disease and its treatment on pregnancy and the impact 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 disorders

1. Perform a focused history and 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, such as: (MK, PC)
 - a. Serologic tests for rheumatoid factor
 - b. Anti-DNA antibodies
 - c. Antinuclear antibodies
 - d. Lupus anticoagulant
 - e. Anticardiolipin (antiphospholipid) antibodies
 - f. Anti-Ro, Anti-La
3. Counsel patients regarding the impact of collagen vascular disease and its treatment on pregnancy and the impact 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)

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 such as bipolar disorder, schizophrenia, depression, 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. Perform a diagnostic history and physical examination in pregnant patients with a medical or surgical emergency. (PC)
2. Order and interpret diagnostic tests, such as CT or MRI scan, 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 impact of the condition on the pregnancy as well as the impact of the pregnancy on the emergent condition. (ICS, P)
4. Describe the timing of delivery in obstetric patients with emergent conditions. (MK)

L. Substance abuse in pregnancy

1. Describe behavior patterns suggestive of substance abuse. (MK)
2. Perform a thorough history and physical examination in patients suspected of substance abuse in pregnancy. (PC)
3. Counsel patients about the impact 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)

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 dilatation, and evaluate uterine contractions. (PC)
4. Perform diagnostic tests to assess patients with threatened second-trimester pregnancy loss, such as: (PC)
 - a. Ultrasonography
 - b. Genital tract cultures
5. Implement appropriate medical and surgical management (including cervical cerclage) for patients with threatened second-trimester abortion. (PC)
6. Manage the complications of second-trimester pregnancy loss, such as: (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 dilatation. (PC)
4. Perform and interpret biophysical, biochemical, 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: (MK, PC)
 - a. Antibiotics
 - b. Tocolytics

- c. Corticosteroids
 - d. Amniocentesis
 - e. Cerclage
 - f. Bed rest
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. Interpret diagnostic tests, such as: (MK)
 - a. Hematocrit
 - b. Platelet count
 - c. Coagulation profile
 - d. Kleihauer-Betke test
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 for 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: (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 Antepartum Fetal Monitoring). (PC)
6. Treat hypertensive disorders of pregnancy. (PC)
7. Recognize and treat possible maternal complications of hypertension in pregnancy, such as: (PC)
 - a. Cerebrovascular accident
 - b. Seizure
 - c. Renal failure
 - d. Pulmonary edema
 - e. HELLP (hemolysis, elevated liver enzymes, and low platelet count) syndrome
 - f. Abruptio placentae

8. Counsel patients about recurrence risk for 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 higher order multiple gestation. (MK)
5. Describe, diagnose, and manage the maternal and fetal complications associated with multiple gestation. (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. Monitor a fetus with suspected growth restriction (e.g., with antepartum heart rate tests, ultrasonography, and Doppler velocimetry) to determine the appropriate time and method of delivery. (PC)
6. Counsel patients about the recurrence risk for 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 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. Recognize unusual causes of postterm pregnancy, such as: (MK)
 - a. Lethal fetal anomaly (e.g., anencephaly)
 - b. Placental sulfatase deficiency
3. Describe the potential fetal and neonatal complications of postterm pregnancy, such as: (MK)
 - a. Macrosomia
 - b. Meconium aspiration syndrome
 - c. Oligohydramnios
 - d. Hypoxia
 - e. Dysmaturity syndrome
 - f. Fetal demise
4. Perform and interpret surveillance tests for the postterm fetus: (PC)
 - a. Antepartum fetal heart rate testing

- b. Ultrasound examination
- 5. Describe appropriate indications for 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 for fetal death. (ICS, P)

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. Interpret the results of umbilical artery Doppler velocimetry. (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: (PC)
 - a. Status of membranes
 - b. Presence of vaginal bleeding
 - c. Fetal presentation
 - d. Fetal position
 - e. Fetal weight
 - f. Cervical effacement
 - g. Cervical dilatation
 - 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 dilatation
 - 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. Amniotomy
 - 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. Counsel patients about the prognosis for abdominal 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)

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 postpartum patients. (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
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 breast feeding. (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 a graduating resident. The resident 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		
2nd trimester—genetic diagnosis	X	
3rd 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
Color Doppler ultrasonography	X	
Three-dimensional ultrasonography	X	
Doppler velocimetry	X	
Version of breech, external		X
Intrapartum		
Amnioinfusion		X

Procedure	Understand	Understand and Perform
Amniotomy		X
Anesthetic/analgesic procedures		
Administration of parenteral analgesics/sedatives		X
Administration of narcotic antagonists		X
Epidural anesthesia	X	
General anesthesia	X	
Spinal anesthesia	X	
Cesarean delivery		
Classical		X
Low transverse		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		
Outlet		X
Low		X
Hypogastric artery ligation	X	
Induction of labor with prostaglandins or oxytocin		X
Manual removal of the placenta		X
Skin incision		
Vertical		X
Transverse		X
Suction evacuation for first-trimester fetal death		X
Uterine artery ligation		X
Vacuum extraction		
Outlet		X
Low		X
Vaginal delivery, breech	X	
Vaginal delivery, spontaneous		X
Postpartum		
Circumcision, neonatal (with anesthesia)	X	
Hematoma evacuation		
Intraabdominal	X	

Procedure**Understand****Understand
and Perform**

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



Gynecology

The practice of gynecology includes both surgical and nonsurgical treatment of disorders of the female reproductive tract. Once primarily a surgical specialty, as a result of advances in therapeutic and diagnostic techniques, gynecology has increasingly become more office-based. In addition to primary office care, the gynecologist often cares for patients with more specialized needs, including those of patients with endocrinologic disorders, infertility and pregnancy loss, urologic disorders, cancer of the reproductive tract, and conditions requiring 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)

1. See Unit 7.

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 postanesthetic 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 postanesthetic patient.

C. Embryology and developmental biology (MK)

1. See Reproductive Endocrinology, Section I. C.

D. Anatomy (MK)

1. See Oncology, Section I. D.

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 their mechanism 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 non-malignant neoplasms that affect the external and internal genitalia.
3. Also see Oncology, Section I. F.

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. Discuss the immunologic response to infection.

II. Disorders of the Urogenital Tract and Breast

A. Abnormal/Dysfunctional uterine bleeding

1. Describe the principal causes of abnormal uterine bleeding and distinguish abnormal uterine bleeding from dysfunctional uterine bleeding. (MK)
2. Elicit 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 to determine the cause of abnormal uterine bleeding, such as: (PC)
 - a. Endometrial biopsy
 - b. Pelvic ultrasonography/saline infusion ultrasonography
 - c. Hysteroscopy
 - d. Laparoscopy
5. Interpret the results of other diagnostic tests, such as: (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. Elicit 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 to confirm the diagnosis of vulvar or vaginal infection, such as: (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 that is necessary for a patient with a vulvar or vaginal infection, for example: (PC, P, SBP, ICS).
 - a. Assessing and treating sexual partner(s)
 - b. Requirements for reporting a communicable disease
 - c. Assessing the patient for other possible genital tract infections
 - d. Counseling 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: (MK)
 - a. Squamous cell hyperplasia
 - b. Lichen sclerosus
 - c. Lichen planus
 - d. Lichen simplex chronicus
 - e. Atrophic dermatitis
 - f. Vulvar vestibulitis and vulvodynia
2. Elicit 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 to confirm the diagnosis of a vulvar dystrophy or dermatosis, for example: (PC, MK)
 - a. Colposcopy
 - b. Staining with dyes to localize the affected area
 - c. Vulvar biopsy
5. Treat common vulvar dystrophies dermatoses and vulvar pain 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 diseases

1. Describe the most common STIs, including causes, symptoms, and risk of transmission, such as: (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. Elicit 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 results of specific tests to confirm the diagnosis of an STI, such as: (PC)
 - a. Bacterial and/or viral culture
 - b. Endocervical aspirate for Gram stain
 - c. Endocervical swab for nucleic acid probe
 - d. Endocervical culture
 - e. Cervical or vaginal cytologic screening (Pap test) and HPV testing
 - f. Scraping of an ulcer or chancre
 - g. Serologic assays
 - h. Tzanck smear
 5. Treat STIs with appropriate antimicrobial agents. (PC)
 6. Describe the long-term follow-up for patients with a STI, including assessment of the patient's sexual partner, discussion of preventive measures, and review of serious sequelae, such as: (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 (PID)

1. Describe the diagnostic criteria for PID. (MK)
2. List the common infections agents implicated in PID. (MK)
3. Elicit a pertinent history from a patient suspected to have PID. (PC)
4. Perform a physical exam 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 probe
 - 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: (PC, ICS, P)
 - a. Chronic pelvic pain
 - b. Infertility
 - c. Ectopic pregnancy

F. Urogynecology (urinary incontinence and pelvic support defects)

1. 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)
2. Describe the static and dynamic interrelationships and function of the pelvic organs and support mechanisms. (MK)
3. Summarize the normal function of the lower urinary tract during the filling and voiding phases, and the mechanisms responsible for urinary continence. (MK)
4. Summarize the potential psychological, social, and sexual consequences of urogynecologic disorders. (MK)
5. Describe the principal etiologies of pelvic support defects, urinary incontinence, and fecal incontinence, including effects of pregnancy and delivery. (MK)
6. Identify the anatomic defects associated with various aspects of pelvic support disorders. (MK)
7. Characterize the major types of urinary incontinence. (MK)
8. Describe abnormal urethral conditions, including urethral syndrome, urethritis, and diverticuli. (MK)
9. Describe the possible etiologies, diagnostic strategies, and treatment approaches for interstitial cystitis. (MK, SBP)
10. Describe the various types of urinary voiding disorders and their possible etiologies, including medical and surgical causes. (MK)
11. Describe the etiologies, prevention, diagnostic techniques, and approaches to repairing various fistulae that may involve the pelvic organs. (MK)
12. Describe the symptoms that may be experienced by a patient with pelvic support defects, urinary incontinence, or fecal incontinence. (MK)

13. Elicit a pertinent history in a patient with a suspected pelvic support defect, urinary incontinence, or fecal incontinence. (PC)
14. Perform a focused physical examination to identify and characterize specific pelvic support defects, including: (PC)
 - a. Anterior compartment
 - b. Urethral hypermobility
 - c. Posterior compartment
 - d. Apical compartment (cervix/uterus or vaginal cuff)
15. Perform a focused physical exam in a patient with urinary and/or fecal incontinence, including assessment of: (PC)
 - a. Bladder and urethral support
 - b. Perineal, levator, and anal sphincter strength
 - c. Neurologic status
16. Perform and interpret the results of selected tests to characterize urinary incontinence disorders, including: (PC)
 - a. Assessment of residual urine volume
 - b. Simple cystometry
 - c. Q-tip test
17. Describe the indication for, and interpret the results of other diagnostic tests, such as: (PC)
 - a. Urinalysis
 - b. Urine culture
 - c. Cystourethroscopy
 - d. Multichannel cystometry
 - e. Urethral profilometry
 - f. Uroflowmetry

- g. Radiologic tests
 - h. Electromyography
 - i. Assessment of anal sphincter integrity (e.g., manometry, radiologic imaging studies, neurologic testing)
18. Treat urogynecologic disorders by both nonsurgical (e.g., pelvic floor exercise regimens, physical therapy, pessary) and surgical methods. (PC)
 19. Describe the types of injuries or complications that may occur related to medical and surgical treatments of urogynecologic disorders, and the approaches to managing them. (PC)
 20. Describe appropriate follow-up for a patient who has been treated for a urogynecologic disorder. (PC, SBP, ICS)
 21. Summarize and counsel patients regarding risks, benefits, and expected outcomes of surgical and non-surgical approaches to management of pelvic support and incontinence disorders. (PC, ICS, P)

G. Urinary tract disorders (infection, nephrolithiasis)

1. Distinguish the types of urinary tract infection, including bacteruria, 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 elicit 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: (MK)
 - a. Uterine fibroids
 - b. Adnexal cystic and solid masses
 - c. Tuboovarian abscess
 - d. Adnexal torsion
 - e. Ovarian cysts/benign neoplasms
 - f. Diverticulitis
 - g. Appendicitis
2. Elicit a pertinent history suggestive of a pelvic mass, such as: (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 MRI or tomographic imaging, in the evaluation of a pelvic mass. (PC, SBP)

6. Discuss the role of serum markers in the evaluation and monitoring of a patient with a pelvic mass. (MK)
7. Treat benign pelvic masses, using nonsurgical or surgical methods, considering such factors as the patient's: (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. Elicit a pertinent, detailed medical, menstrual, and sexual history to characterize the patient's chronic pelvic pain, including signs/symptoms emanating from non-reproductive organs. (PC)
4. Elicit 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, using 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

1. Summarize the theories of the pathogenesis of endometriosis. (MK)
2. Describe the typical history of a patient with endometriosis. (MK)
3. Perform a focused physical examination in a patient with suspected endometriosis and identify the principal abnormal clinical findings. (PC)
4. Perform and interpret the results of selected tests to confirm the diagnosis of endometriosis, for example: (PC)
 - a. Endovaginal ultrasonography
 - b. Laparoscopy with/without biopsy
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. Treat endometriosis medically and surgically. (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: (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 each of them: (PC)
 - a. Needle aspiration of a cyst or abscess
 - b. Collection of nipple discharge for cytologic examination and/or culture
 - c. Fine needle aspiration of a mass
 - d. Needle localization biopsy
 - e. Excisional biopsy
 - f. Mammography

g. Ultrasonography

h. MRI

III. First-Trimester Pregnancy Loss

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 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, using nonsurgical or surgical methods. (PC)
7. Describe and treat the complications that may develop as a result of treatment of a spontaneous abortion, for example: (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 also Unit 5, Reproductive Endocrinology, section H). (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. Elicit 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 to confirm the diagnosis of ectopic pregnancy, such as: (PC)
 - a. Endovaginal ultrasonography
 - b. Uterine curettage or aspiration
 - c. Laparoscopy
6. Interpret the results of other diagnostic tests, such as: (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 for an ectopic pregnancy and prognosis for a normal intrauterine pregnancy. (PC, ICS, P)

IV. Preoperative, Intraoperative, and Postoperative Care

A. Preoperative care

1. Conduct detailed preoperative assessment with consideration given to the needs of special patient groups, such as: (PC, ICS, P, SBP)
 - a. Children and adolescents
 - b. The elderly
 - c. Patients with coexisting medical conditions, such as cardiopulmonary disease or coagulation disorders
 - d. Non-English speaking patients
2. Describe indications for and perform appropriate preoperative evaluation and/or referral, including laboratory tests, radiographic imaging, and EKG. (PC, SBP)
3. Be able to obtain informed consent, with special regard to: (PC, ICS, P)
 - a. Alternatives to surgery
 - b. Alternative surgical procedures
 - c. Intraoperative complications
 - d. Indications for transfusion
4. Compose appropriate preoperative preparation plans for patients undergoing gynecologic surgery, including: (MK, PC)
 - a. Mechanical bowel preparation
 - b. Antibiotic use
 - c. Thromboembolism prophylaxis

d. Preoperative anesthesia consultation

B. Intraoperative care

1. Discuss the surgical plan with the operating room team. (ICS, SBP)
2. Choose appropriate suture and surgical instruments as dictated by the procedure. (MK, PC)
3. Be able to properly position the patient for the procedure and understand the consequences of improper use of stirrups. (PC)
4. Understand and demonstrate the incisions used and instruments for abdominal entry for laparoscopy and laparotomy, including Cherney, Maylard, Midline, Paramedian and Pfannenstiel. (MK, PC)
5. Demonstrate the proper use of retractors. (MK, PC)
6. Name and be able to properly use surgical instruments. (MK, PC)
7. Discuss the various surgical power sources (electrocautery, laser, and so forth), indications for each, alternatives, and complications. (MK, PC)
8. Describe the options for intraoperative pain control. (MK)

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. Elicit appropriate history, perform a physical examination, perform and/or interpret appropriate tests, and manage common postoperative complications, such as: (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
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
 4. Arrange for appropriate posthospitalization care, including visiting nurse, physical therapy, social services, and other resources to optimize patient outcomes. (SBP)

V. Critical Care

A. Toxic shock syndrome

1. Describe the pathogenesis and microbiology of toxic shock syndrome (TSS). (MK)
2. Describe the typical signs and symptoms of a patient with TSS and distinguish signs/symptoms according to the infectious agent. (PC)
3. Perform a focused physical examination to confirm the diagnosis of TSS, and assess the severity of the patient's illness. (PC)
4. Interpret the results of diagnostic tests to evaluate TSS. (PC)

5. Describe the principles of treatment of TSS, and the possible need for consultation with a critical care or infectious disease specialist. (PC, SBP)
6. Counsel affected patients about the risk of recurrence and the value of preventive measures. (PC)

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. Complete blood count and white cell differential
 - c. Liver function tests
 - d. Renal function tests
 - e. Coagulation profile
 - f. Chest x-ray
 - g. MRI and CT scan of the abdomen and pelvis
 - h. Ultrasonography of the pelvis
 - i. Arterial blood gases
 - j. 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: (PC)
 - a. Chest x-ray
 - b. Pulse oximetry
 - c. Arterial blood gases
 - 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: (PC)
 - a. Hypotension or hypertension
 - b. Bradycardia or tachycardia
 - c. Apnea or tachypnea
 - d. Signs of poor tissue perfusion (e.g., oliguria, delayed capillary refill)
 - e. ARDS

- f. Myocardial failure
 - g. Altered mental status
3. Explain the indications for central hemodynamic monitoring (right heart catheterization). (MK, PC)
 4. Interpret the results of central hemodynamic monitoring and describe management of patients in whom central monitoring is being performed based on hemodynamic parameters obtained. (MK, PC)
 5. Describe the complications of central hemodynamic monitoring and consult with an appropriate specialist, as needed, when managing those complications. (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.
2. Describe the laboratory evaluation of acute blood loss, including:
 - 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:
 - a. Fluid and electrolyte replacement
 - b. Blood transfusion
 - c. Correction of coagulopathies

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 impact 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 geriatric 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, DNR orders, power 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, intraoperative, and postoperative care of the geriatric patient, such as: (PC, ICS, SBP)
 - a. Entrapment (pressure) 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 a graduating resident. The resident 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 (cervix, endometrium, vagina, vulva)		X
Anti-incontinence (urinary) procedures		X
Anoscopy	X	
Appendectomy	X	
Biopsy		
Cervix		X
Endocervix		X
Endometrium		X
Skin		X
Vagina		X
Vulva		X
Peritoneum		X
Breast, cyst aspiration	X	
Cervical Conization		X
Colonic endoscopy	X	
Colpocleisis	X	
Colporrhaphy		
Anterior (including urethropexy)		X
Posterior		X
Colposcopy, with directed biopsy of cervix, vagina or vulva		X
Colposuspension		X
Culdoplasty		X
Cystometrography		
Simple		X
Complex (multichannel)	X	
Cystotomy repair		X
Cystourethroscopy	X	
Dilation and curettage		X
Enterocoele repair		X
Enterotomy repair		X

Procedure	Understand	Understand and Perform
Excision of cyst (ovarian, tubal, vaginal, vulvar)		X
Excision of Bartholin's gland		X
Fistula repair		
Rectovaginal	X	
Vesicovaginal	X	
Ureterovaginal	X	
Urethrovaginal	X	
Hernia repair (incisional)		X
Hymenotomy		X
Hypogastric artery ligation	X	
Hysterectomy		
Laparoscopic, total or supracervical	X	
Abdominal, 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
Laparoscopy, diagnostic and/or operative	X	
Laparotomy incisions, abdominal		X
Lysis of adhesions		
Abdominal		X
Laparoscopic		X
Marsupialization of Bartholin's cyst		X
Myomectomy		X
Omentectomy, infracolic		X
Oophorectomy		X
Ovarian biopsy		X
Ovarian or paraovarian cystectomy		X
Ovarian drilling, laparoscopic	X	
Ovarian transposition	X	
Paravaginal repair	X	
Perineorrhaphy		X
Perineoplasty		X
Pessary fitting		X
Polypectomy		X
Presacral neurectomy	X	
Pressure-flow study (urodynamics)	X	
Q-tip test		X
Salpingectomy and/or oophorectomy		X
Salpingostomy	X	
Salpingotomy		X

Procedure	Understand	Understand and Perform
Sterilization		
Abdominal		X
Laparoscopic		X
Hysteroscopic	X	
Trachelectomy	X	
Trigger point injection	X	
Ultrasonography		
Abdominal		X
Endovaginal		X
Saline infusion ultrasonography		X
Urethral bulking procedures	X	
Urethral diverticulum repair	X	
Urethral pressure profilometry	X	
Ureteroureterostomy	X	
Ureteral reimplantation	X	
Uterine artery embolization	X	
Uterine evacuation (for pregnancy termination, incomplete abortion, fetal death)	X	
Dilation and evacuation	X	
Suction curettage	X	
Mechanical or osmotic preprocedural cervical preparation		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



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 the resident in obstetrics and gynecology is 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 postreproductive 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, the resident 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, the resident should understand the appropriate use of hormone therapy.

I. Basic Science/Mechanisms of Disease

A. Genetics (See Genomics Chapter 7, Section V)

B. Physiology

1. Describe the physiology of: (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, such as: (MK, PC)

- a. Hysterosalpingography (HSG)
 - b. Pelvic ultrasonography/saline infusion ultrasonography
 - c. CT
 - d. MRI
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:
(MK)
 - a. Induce ovulation
 - b. Inhibit ovulation (e.g., 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 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: (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 experienced by pediatric patients, such as: (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. Elicit a pertinent history and a focused physical examination appropriate for the patient's age, including: (PC, ICS, P)
 - a. Demonstration of correct use of equipment
 - b. Positioning
 - c. Adjuncts to examination
 3. Perform and/or interpret selected tests to diagnose a specific gynecologic disorder in a pediatric patient: (PC)
 - a. Microbiologic cultures of the lower genital tract
 - b. Vaginoscopy
 - c. Vaginal lavage
 - d. Ultrasonography
 - e. MRI
 4. Understand the medical and surgical treatment of pediatric gynecologic disorders. (MK, PC)
 5. Understand the indications for referral to a sub-specialist. (PC, SBP)
 6. Counsel the patient and her family about long-term prognosis and the effect of specific conditions on reproduction. (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. Describe 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. Perform a history and a focused physical examination to evaluate the diagnosis of precocious puberty. (PC, ICS)
4. Interpret the results of selected tests to evaluate precocious puberty, such as: (PC)
 - a. Ultrasonography
 - b. Gonadotropin assays
 - c. X-ray studies to determine bone age
 - d. CT or MRI scans
5. Describe the treatment and long-term prognosis for patients with precocious puberty. (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: (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 the following tests to confirm the diagnosis of a developmental anomaly, its etiology, and its potential clinical implications: (MK, PC)

- a. Ultrasonography, sonohysterography, hysterosalpingography, hysteroscopy, laparoscopy
 - b. Endocrinologic assays
 - c. Microbiologic tests
 - d. Peripheral blood karyotype assessment
 - e. CT or MRI
 - f. Examination under anesthesia
5. Describe appropriate medical and surgical treatments for patients with developmental anomalies. (PC)
 6. Counsel patients and their families about the impact of genital tract anomalies on reproduction. (ICS)
 7. Describe the indications for referral. (SBP)

D. Adolescent gynecology

1. Discuss the diagnosis and management of gynecologic issues often experienced by adolescent women, such as: (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

- l. Pregnancy
 - m. Sexual abuse
 - n. Ovarian diseases and masses
 - o. Endometriosis
 - p. Chronic pelvic pain
2. Elicit 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, such as:
 - a. Psychological health (PC)
 - b. Immunizations (PC)
 - c. Confidentiality issues (P)
 - d. Facilitation of parent-child communication (ICS)
 - e. Safety and prevention of morbidity and mortality (PC)
 - f. Substance abuse (PC)
 - g. Nutrition and dietary management (PC)
 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: (MK, PC)
 - a. Microbiologic tests
 - b. Endocrinologic assays
 - c. Ultrasonography, sonohysterography, hysterosalpingography, hysteroscopy, laparoscopy
 - d. CT or MRI
7. Treat adolescent gynecologic disorders medically or surgically. (PC)
8. Describe the indications for referral. (SBP)
9. Counsel the patient and her family about the long-term prognosis of her condition. (ICS)

E. Delayed puberty

1. Understand the principal causes of delayed puberty. (MK)
2. Describe the history of a patient with delayed puberty. (MK)
3. Perform a physical examination and interpret tests to evaluate the etiology of delayed puberty, such as: (PC)
 - a. Vaginal cytology
 - b. X-rays for bone age
 - c. Endocrinologic assays
 - d. Peripheral blood karyotype
 - e. CT scan or MRI of the head
4. Describe the treatment of a patient with delayed puberty. (PC)
5. Describe the indications for referral. (SBP)
6. Counsel a patient and her family about her long-term follow-up and prognosis and the effect of her condition on reproduction. (ICS)

III. Menstrual and Endocrine Disorders

A. Dysmenorrhea

1. Describe the classification of dysmenorrhea (i.e., primary versus secondary). (MK)
2. List the principal causes of primary and secondary dysmenorrhea. (MK)
3. Elicit a pertinent history to evaluate dysmenorrhea. (ICS)
4. Perform a focused physical examination to evaluate dysmenorrhea. (PC)
5. Perform and/or interpret selected tests to evaluate dysmenorrhea, such as: (PC)
 - a. Microbiologic cultures of the genital tract
 - b. Endometrial biopsy
 - c. Pelvic ultrasonography/saline infusion ultrasonography
 - d. Hysteroscopy
 - e. Laparoscopy
 - f. CT
 - g. MRI
6. Treat dysmenorrhea medically/surgically. (PC)
7. Describe long-term follow-up and prognosis for a patient with dysmenorrhea. (PC)
8. See Gynecology Section, II. J., Endometriosis

B. Dysfunctional uterine bleeding

1. See Gynecology Section, II. A., Abnormal/Dysfunctional uterine bleeding

C. Amenorrhea

1. Describe the classification of amenorrhea (i.e., primary versus secondary). (MK)

2. List the major causes of primary and secondary amenorrhea. (MK)
3. Elicit a pertinent history to evaluate amenorrhea. (ICS)
4. Perform a focused physical examination to evaluate amenorrhea. (PC)
5. Perform and interpret selected diagnostic tests to evaluate amenorrhea, such as: (PC)
 - a. Hysteroscopy
 - b. Hysterosalpingography (HSG)
 - c. Ultrasonography/saline infusion ultrasonography
6. Interpret other diagnostic tests, such as: (PC)
 - a. Serum and urine hCG assay
 - b. Serum gonadotropin assays
 - c. Thyroid-stimulating hormone assay
 - d. Prolactin assay
 - e. Progestin challenge test
 - f. Dexamethasone suppression test
 - g. Corticotropin stimulation test
 - h. Peripheral blood karyotype
 - i. CT or MRI
7. Treat amenorrhea medically/surgically. (PC)
8. Describe the long-term follow-up for a patient with amenorrhea, focusing particularly on the risks for endometrial hyperplasia and hypoestrogenism. (PC)

D. Galactorrhea / Hyperprolactinemia

1. Describe the causes of galactorrhea/hyperprolactinemia. (MK)

2. Elicit a pertinent history to evaluate galactorrhea/hyperprolactinemia. (ICS)
3. Perform a targeted physical examination to evaluate galactorrhea/hyperprolactinemia. (PC)
4. Order and interpret selected diagnostic studies, including: (PC)
 - a. Serum prolactin
 - b. Serum TSH
 - c. CT or MRI of pituitary
5. Treat 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: (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

1. Describe the diagnostic criteria for premenstrual syndrome (PMS). (MK)
2. List the possible causes of PMS. (MK)
3. Elicit a pertinent history to evaluate PMS. (ICS)
4. Describe the differential diagnosis of PMS. (MK)
5. Treat PMS with interventions, such as: (PC)
 - a. Psychosocial support or referral

b. Counseling about lifestyle changes

c. Medication

F. Hirsutism

1. Describe the principal causes of hirsutism. (MK)
2. Elicit a pertinent history to evaluate hirsutism. (ICS)
3. Perform a focused physical examination to evaluate hirsutism. (PC)
4. Perform and interpret selected tests to determine the etiology of hirsutism. (PC)
5. Treat hirsutism with medical/surgical interventions. (PC)
6. Describe the indications for referral. (SBP)
7. Describe long-term follow-up for an affected patient and counsel her about possible effects on reproduction. (PC, ICS)

G. Polycystic ovary syndrome (PCOS)

1. Describe the clinical features of PCOS. (MK)
2. Describe the genetic and environmental factors contributing to the pathogenesis of PCOS. (MK)
3. Elicit a pertinent history to evaluate PCOS. (ICS)
4. Perform a focused physical examination to evaluate PCOS. (PC)
5. Perform and/or interpret selected tests to determine the diagnosis: (PC)
 - a. Serum testing, including ovarian, adrenal and pituitary hormone assays and insulin resistance.
 - b. Pelvic ultrasonography
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 for consultation. (SBP)
9. Describe the long-term follow-up for an affected patient including consultation about effects on reproduction and risk of cancer and cardiovascular disease. (PC, ICS)

H. Recurrent pregnancy loss

1. Describe the most common causes of recurrent first- and mid-trimester pregnancy loss. (MK)
2. Elicit a pertinent history in a patient with recurrent first- and mid-trimester pregnancy losses including issues such as: (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- and mid-trimester pregnancy loss, such as: (PC)
 - a. Genital tract malformations
 - b. Galactorrhea
4. Perform and interpret the results of selected diagnostic tests to determine the etiology of recurrent early pregnancy loss, for example: (PC)
 - a. Microbiologic cultures of the genital tract
 - b. Hysteroscopy
 - c. Endometrial biopsy
 - d. Pelvic ultrasonography
 - e. Hysterosalpingography

5. Interpret the results of other diagnostic tests, such as: (PC)
 - a. Serum prolactin
 - b. Thyroid function tests
 - c. Serologic tests for autoimmune or connective tissue diseases
 - d. Peripheral blood karyotype
 - e. Tests for thrombophilias
6. Treat patients with a history of recurrent pregnancy loss with surgical or nonsurgical methods depending on etiology. (PC)
7. Counsel patients about the prognosis for successful treatment of recurrent pregnancy loss. (ICS)

IV. Infertility

A. Evaluation

1. Describe the classification of infertility (i.e., primary versus secondary). (MK)
2. List the principal causes of primary and secondary infertility. (MK)
3. Elicit a pertinent history to evaluate infertility. (ICS)
4. Perform a focused physical examination to evaluate infertility. (PC)
5. Perform and/or interpret selected diagnostic tests to determine the most likely cause of infertility, such as: (PC)
 - a. Basal body temperature chart
 - b. Serum assays of:
 - i. Luteal phase progesterone
 - ii. Thyroid function
 - iii. Prolactin

- iv. Pituitary and ovarian hormones
 - c. Microbiologic cultures of genital tract
 - d. Pelvic ultrasonography/saline infusion ultrasonography
 - e. Hysterosalpinography
 - f. Semen analysis and culture, antisperm antibodies, male genetic evaluation
 - g. Laparoscopy and hysteroscopy
6. Treat infertile patients who have irregular ovulation with nongonadotropin therapy, such as: (PC)
 - a. Clomiphene citrate
 - b. Aromatase inhibitors
 - c. Glucocorticoids
 - d. Insulin-sensitizing agents
 7. Perform selected surgical procedures to correct conditions that cause infertility, such as: (PC)
 - a. Lysis of pelvic adhesions
 - b. Resection of endometriomas/endometriotic implants
 8. Describe the indications for referral to a subspecialist for treatment. (SBP)
 9. Counsel patients about the long-term prognosis for their condition, and alternatives to childbearing, such as adoption, donor gametes, surrogate pregnancy. (ICS, P)
 10. Counsel patients regarding sexual activity during fertility treatment. (ICS)

B. Reproductive technologies

1. Describe indications for ART procedures, such as: (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, ART. (MK)

V. Management of the Climacteric Period

A. Evaluation (MK, PC)

1. Describe typical symptoms experienced by a woman at the time of menopause.
2. Perform a focused physical examination of a menopausal patient.
3. Interpret selected laboratory tests to evaluate menopause.
4. Assess the risk of osteoporosis by history, examination, and testing.
5. Interpret the results of other screening tests that should be performed in menopausal patients (outlined in Periodic Health Assessments, Unit 2, Primary and Preventive Ambulatory Health Care).

B. Management

1. Manage perimenopausal and menopausal conditions, including osteoporosis, using interventions, such as: (PC)
 - a. Hormone therapy (estrogen, progestins, selective estrogen receptor modulators)
 - b. Calcium and vitamin supplementation
 - c. Behavioral and lifestyle modifications
 - d. Dietary alterations
 - e. Medications that preserve/build bone mass

2. Describe the implications of nonhormonal and alternative therapies, such as acupuncture and herbal supplements. (PC)
3. Describe the long-term follow-up indicated for menopausal patients. (MK)
4. Counsel patients regarding physical, emotional and relationship-based issues concerning female sexuality and aging. (ICS)

Procedures

The Table at the end of Unit 4, Gynecology, provides a detailed list of the gynecologic procedures with which the resident 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 a graduating resident. The resident 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		
IVF	X	
ICSI	X	
Gamete donation	X	
Preimplantation genetic diagnosis	X	
GIFT	X	
Hysterosalpingography		X
Hysterosonography		X
Hysteroscopy		
Diagnostic		X
Operative		
Submucosal Fibroid Resection		X
Polyp Resection		X
Incision of vaginal septum	X	
Laparoscopy		
Diagnostic		X
Operative		
Chromopertubation		X
Lysis of adhesions		X
Fimbrioplasty	X	
Salpingostomy		X
Metroplasty		
Abdominal	X	
Hysteroscopic resection of uterine septum	X	
Tubal anastomosis	X	
Vaginal reconstruction	X	



Oncology

The detection and treatment of gynecologic malignancies are important objectives in gynecologic practice. Although a select group of physicians devote their full practice to the care of patients with gynecologic malignancies, the resident 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 for, 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, the resident physician 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 HNPCC.

4. Describe the cell replication cycle and identify the phases of the cycle most sensitive to radiation 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 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 paraaortic 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 non-gynecologic abdominal and pelvic viscera, i.e., 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 which 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 pre-malignant conditions of the pelvic organs and breast.
2. Describe risk factors contributing 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 gynecologic cancers.
3. Describe the impact of cancer and its therapies on the immune system.
4. List the principal consequences of immunosuppression in the cancer patient (e.g., 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 for developing breast cancer, such as: (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. Perform a focused history and 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 for the patient the results of needle aspiration of a breast cyst and fine-needle biopsy of a solid lesion. (PC, ICS)
4. Describe the indications for and interpret for the patient the results of other diagnostic studies, such as: (PC)

- a. Mammography
- b. Ultrasonography
- c. Core-needle biopsy
- d. 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 vs. mastectomy.
3. Describe the indications for adjuvant therapy with hormonal treatment, chemotherapy, or radiation therapy.
4. Describe the impact of pregnancy on the treatment and prognosis of breast cancer.

D. Breast cancer survivorship

1. Describe the psychosocial impact 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. Pre-invasive 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 post-treatment 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 (DES). (MK)

B. Invasive vulvar carcinoma

1. Describe the epidemiology of invasive vulvar lesions, such as: (MK)
 - a. Melanoma
 - b. Squamous cell carcinoma
 - c. Basal cell carcinoma
 - d. Paget's disease
 - e. Sarcoma
 - f. Verrucous carcinoma
 - g. Bartholin's 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 cancers using the system adopted by the International Federation of Gynecology and Obstetrics (FIGO). (MK)
6. In consultation with a gynecologic oncologist, counsel a patient about the evaluation and treatment (indications, complications) of vulvar cancer. (PC, ICS)
7. Describe the prognosis for invasive vulvar malignancies. (MK)

8. Describe the impact 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:
 - a. Squamous cell carcinoma
 - 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 FIGO staging of invasive vaginal cancer. (MK)
6. In consultation with a gynecologic oncologist, counsel the patient regarding the evaluation and treatment (indications, complications) of vaginal cancer. (PC, ICS)
7. Describe the prognosis for invasive vaginal cancer. (MK)
8. Describe the impact 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. Pre-invasive cervical disease

1. Describe the epidemiology of cervical dysplasia. (MK)

2. Elicit 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. Treat cervical dysplasia with modalities, such as: (PC)
 - a. Cryosurgery
 - b. Laser ablation
 - c. Loop electrical excision
 - d. Cold knife conization
6. Manage the complications resulting 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* DES exposure.
9. Counsel patients regarding the use of vaccinations for the prevention of HPV 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 FIGO staging of cervical cancer. (MK)

6. In consultation with a gynecologic oncologist, counsel the patient about the evaluation and treatment (indications, complications) of cervical cancer. (PC, ICS)
7. Describe the prognosis for cervical cancer. (MK)
8. Describe the impact of treatment of cervical cancer on sexual function and manage/refer patient 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: (PC, ICS)
 - a. Obesity
 - b. Anovulation
 - c. Polycystic ovary syndrome
 - d. Glucose intolerance
 - e. Estrogen or antiestrogen 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: (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 post-treatment follow-up. (PC)

B. Carcinoma of the endometrium

1. Describe the epidemiology of endometrial cancer such as: (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 FIGO staging of invasive endometrial cancer. (MK)
6. In consultation with a gynecologic oncologist, counsel the patient about the evaluation and treatment (indications, 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 histology, staging and prognosis for: (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. CT scan
7. In consultation with a gynecologic oncologist, counsel the patient about the evaluation and treatment (indications, 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 FIGO staging and prognosis of fallopian tube tumors. (MK)

4. In consultation with a gynecologic oncologist, counsel the patient about the evaluation and treatment (indications, complications) of fallopian tube cancer. (PC, ICS)
5. Discuss 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: (PC)
 - a. Ultrasonography
 - b. Quantitative b-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 for GTD. (PC, ICS)

B. Malignant gestational trophoblastic disease

1. Describe the conditions that may precede 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, b-hCG, chest x-ray, CT scan and ultrasonography. (MK)
4. Classify metastatic GTD into good prognosis (low risk) versus poor prognosis (high risk). (MK)
5. Describe referral to a gynecologic oncologist for surgical and medical treatment of GTD. (MK)
6. Counsel patients regarding risk of recurrence and prognosis for future pregnancies. (PC, ICS)
7. 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: (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: (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” (DNR) order. (MK)
4. Describe the medical, ethical, and legal implications of a DNR 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 the resident 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 a graduating resident. The resident 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	
Paraortic	X	
Pelvic	X	
Sentinel	X	
Mastectomy		
Simple	X	
Radical	X	
Paracentesis		X
Pelvic exenteration with or without reconstruction	X	
Port placement, intraperitoneal	X	
Radiation therapy		
Brachytherapy	X	
External beam	X	

Procedure	Understand	Understand and Perform
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
Vaginal reconstruction		
Gracilis flap	X	
Martius flap	X	
Skin graft	X	
Transverse rectus abdominis myocutaneous flap	X	
Venous access device placement	X	
Vulvectomy, radical	X	



Genomics

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

I. Core Competencies

The application of genomic information and technologies must be carried out under the general umbrella of the ACGME core competencies (see Unit I). Residents are expected to:

- A. Demonstrate caring and respectful behaviors when dealing with the genetic information of patients and their families. (P)
- B. Residents should identify areas in clinical genetics where there is significant potential for paternalism, discrimination, or injustice. (P)
- C. Discuss 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. 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, genomics has altered primary and preventive care.

- A. Describe the general indications for genetically based diagnostics. (PC)**
- B. Perform or interpret genetic risk assessment through: (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. Discuss 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 sub-groups 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. Additions
3. Trinucleotide repeats
4. Microsatellite instability
5. Mitochondrial DNA abnormalities

G. Describe stem cells and potential uses of stem cell technology.

III. Obstetrics

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 using this understanding for the good of the patient, her family and her unborn.

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 of karyotype abnormalities, such as: (PC)
- a. Trisomy
 - i. 13
 - ii. 18
 - iii. 21
 - b. Polyploidy
 - c. Monosomy
 - d. Sex chromosome abnormalities
 - e. Deletions
 - f. Inversions
 - g. Translocations
 - h. Mosaicism
 - i. Chimeras
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. Discuss treatment and surveillance options for patients or

newborns with genetically derived disease. (PC)

C. Genetic counseling

1. Elicit a history for inherited disorders, ethnic- or race-specific risks, and teratogen exposure. (PC)
2. Describe the concepts of penetrance and variable expression and their impact on prognosis for a given genetic disorder. (MK, PC)
3. Distinguish between various forms of genetic inheritance: (MK)
 - a. Autosomal dominant
 - b. Autosomal recessive
 - c. X-linked
 - d. Mitochondrial
 - e. Genomic imprinting
4. Counsel patients about the manifestations of common genetic disorders. (PC, ICS)
5. Describe the indications for, and limitations of, noninvasive diagnostic tests for fetal aneuploidy and structural malformations (e.g., ultrasonography, serum analytes). (PC, SBP)
6. List ultrasonography findings that are often associated with genetic disorders for: (PC)
 - a. Duodenal atresia
 - b. Omphalocele
 - c. Nuchal translucency/nuchal skin fold
 - d. Echogenic bowel
 - e. Heart defects
 - f. Diaphragmatic hernia
 - g. Ventriculomegaly
7. Counsel patients about the risks and benefits of various

methods of invasive fetal testing, such as: (PC, ICS)

- a. Chorionic villus sampling
 - b. Amniocentesis
 - c. Cordocentesis
 - d. Pre-implantation genetic testing
8. Order and interpret appropriate maternal and fetal/neonatal tests to evaluate possible causes of fetal demise. (PC)
 9. Counsel a patient with an abnormal fetus regarding management options. (PC, SBP, ICS)
 10. Counsel a patient and her family after adverse pregnancy outcome about such factors as recurrence, future care, and possible interventions. (PC, SBP, ICS)
 11. Counsel a patient and other health care professionals about fetal effects from exposure to various pharmacologic agents or to indicated diagnostic studies utilizing ionizing radiation. (PC, ICS)
 12. Counsel a patient about the genetic implications of advancing maternal and paternal age. (PC, ICS)
- D. Describe the indications and uses for umbilical cord stem cells and counsel patients on the advantages and disadvantages of umbilical cord blood banking. (PC, MK, ICS)**

IV. Gynecology

The practice of gynecology is no less impacted 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 in women such as: (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
 - b. Recurrent abortion
 - c. Uterine leiomyomata

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. 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. (MK)
3. Discuss Mendelian and non-Mendelian patterns of inheritance. (MK)
 - a. X-linked conditions
 - b. Autosomal recessive and dominant conditions
 - c. Imprinting
 - d. Trinucleotide repeat expansions

e. Mitochondrial

B. List the role of genetics in the development and evaluation of infertility. (MK)

1. Male

- a. Klinefelter's 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. Discuss 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 and other oncogenes. (MK)
- 2. Describe the inheritance patterns for malignancies of the pelvic organs and breast. (MK)
- 3. Describe the current indications for screening for BRCA1 and BRCA2. (MK)
- 4. Describe the cell replication cycle and identify the phases of the cycle most sensitive to radiation and chemotherapy. (MK)
- 5. 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. Discuss the genetics of familial syndromes (e.g., Lynch, hereditary nonpolyposis colorectal cancer, etc.). (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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