



ACGME International

**Advanced Specialty Program Requirements for
Graduate Medical Education
in Pathology**

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Graduate Medical Education
in Pathology**

I. Introduction

I.A. Definition and Scope of the Specialty

The educational program in pathology affords the opportunity to acquire techniques and methods of anatomic and clinical pathology, and experience with the consultative role of the pathologist in patient care decision making.

I.B. Duration of Education

I.B.1. Education in anatomic and/or clinical pathology must be provided in one of these formats:

I.B.1.a) Anatomic and Clinical Pathology (APCP-4) must be 48 or 60 months of education in anatomic pathology and clinical pathology.

I.B.1.b) Anatomic Pathology (AP-3) must be 36 or 48 months of education in anatomic pathology.

I.B.1.c) Clinical Pathology (CP-3) must be 36 or 48 months of education in clinical pathology.

II. Institutions

II.A. Sponsoring Institutions

II.A.1. A Sponsoring Institution providing graduate medical education in anatomic pathology and/or clinical pathology should also sponsor ACGME-I-accredited residency programs in at least three of the following specialties: diagnostic radiology, family medicine, internal medicine, obstetrics and gynecology, pediatrics, and surgery.

II.B. Participating Sites

II.B.1. Resident assignments away from the primary clinical site should not prevent residents' regular participation in rounds or conferences at the primary clinical site, or in equivalent conferences at participating sites.

III. Program Personnel and Resources

III.A. Program Director

See International Foundational Requirements, Section II.A.

III.B. Faculty

See International Foundational Requirements, Section II.B.

III.C. Other Program Personnel

- III.C.1. There must be clerical, administrative, and qualified laboratory technical personnel to support the clinical, teaching, educational, and research activities of the program.

III.D. Resources

- III.D.1. Residents must be provided with a designated work area, a computer with Internet access, and laboratory space for both patient-care work and participation in scholarly activities.
- III.D.2. The program must provide microscopes for rotations on which microscopic evaluations account for a major portion of the clinical experience.
- III.D.3. The audiovisual resources available for educational purposes should be adequate to meet the goals and objectives of the program.
- III.D.4. The educational material should be sufficient for anatomic pathology and/or clinical pathology as matches the program's specialty concentration.
- III.D.5. The number and variety of tests performed in the program's laboratories should be sufficient to allow residents to attain proficiency in each of their program's required competencies and give residents experience in those tests typically available in a general hospital.

IV. Resident Appointment

IV.A. Eligibility Criteria

See International Foundational Requirements, Section III.A.

IV.B. Number of Residents

- IV.B.1. The program must have at least one resident in each accredited year of education.
- IV.B.1.a) For APCP-4, on average there should be at least two residents enrolled in each year of a program.

V. Specialty-Specific Educational Program

V.A. Regularly Scheduled Didactic Sessions

- V.A.1. Residents' experiences must be augmented by course materials and study sets (e.g., glass slides or virtual sets), including laboratory indexes of unusual cases, as well as by didactic/interactive sessions, such as seminars, departmental conferences, multidisciplinary conferences, lectures, and journal clubs.
- V.A.2. The program director must ensure that:
- V.A.2.a) there are regularly scheduled seminars and conferences devoted to the basic and applied medical sciences, as well as clinical correlation conferences;
- V.A.2.b) clinical correlation conferences (e.g., a pediatric mortality conference) are held with clinical services such as diagnostic radiology, family medicine, general surgery, internal medicine, obstetrics and gynecology, pediatrics, and their subspecialties; and,
- V.A.2.c) there are departmental conferences, in which both faculty members and residents participate, for detailed discussion of difficult and unusual cases.

V.B. Clinical Experiences

- V.B.1. The APCP-4 program must include a minimum of 18 months of core anatomic pathology and a minimum of 18 months of core clinical pathology education.
- V.B.1.a) At least 12 of these months should be a continuation of structured anatomic pathology or clinical pathology education, or should be devoted to a specialized facet of pathology, which may include up to six months of research, as determined by the program director, Clinical Competency Committee, and/or a Pathology Education Committee, in conjunction with the resident.
- V.B.2. The AP-3 and CP-3 programs must include a minimum of 24 months of core anatomic pathology (AP-3) or core clinical pathology (CP-3) education.
- V.B.2.a) The AP-3 program should include structured education in the core areas of breast pathology, cardiac pathology, cytopathology, dermatopathology, gastrointestinal pathology, genitourinary, pathology, neuropathology, pediatric pathology, pulmonary pathology, and renal pathology.
- V.B.2.b) The CP-3 program should include structured education in the core areas of blood banking and transfusion medicine, chemical pathology, hematology, and medical microbiology with molecular pathology.

- V.B.2.c) At least six of these months should be structured education in one or more highly integrated areas of pathology, such as blood banking and transfusion medicine, chemical pathology, clinical informatics, coagulation, cytogenetics, cytopathology, hematology, laboratory medical directorship, medical microbiology with molecular pathology, or other subspecialty areas of anatomical pathology or clinical pathology.
- V.B.2.d) A least six of these months should be devoted to a specialized facet of pathology, which may include up to six months of research, as determined by the program director, Clinical Competency Committee, and/or a Pathology Education Committee, in conjunction with the resident.
- V.B.3. All pathology residents must participate in laboratory inspections or mock inspections, method validation, review of proficiency testing results, quality assurance activities, and the use of hospital and laboratory information systems.
- V.B.4. All pathology residents must participate in pathology conferences, teaching, and the regular, formal, clinical, and teaching rounds corresponding to the laboratory services to which they are assigned.
- V.B.5. APCP-4
- V.B.5.a) Resident education in anatomic pathology must include instruction in:
- V.B.5.a).(1) fine needle aspiration techniques;
 - V.B.5.a).(2) autopsy and surgical pathology;
 - V.B.5.a).(3) clinical informatics;
 - V.B.5.a).(4) cytogenetics;
 - V.B.5.a).(5) cytopathology;
 - V.B.5.a).(6) dermatopathology;
 - V.B.5.a).(7) forensic pathology;
 - V.B.5.a).(8) histochemistry;
 - V.B.5.a).(9) immunopathology;
 - V.B.5.a).(10) medical renal pathology;
 - V.B.5.a).(11) molecular pathology;

- V.B.5.a).(12) neuropathology;
- V.B.5.a).(13) pediatric pathology;
- V.B.5.a).(14) ultrastructural pathology; and,
- V.B.5.a).(15) other advanced diagnostic techniques as they become available.

- V.B.5.b) Resident education in clinical pathology must include instruction in:
 - V.B.5.b).(1) bone marrow aspiration techniques;
 - V.B.5.b).(2) blood banking/transfusion medicine;
 - V.B.5.b).(3) chemical pathology;
 - V.B.5.b).(4) clinical informatics;
 - V.B.5.b).(5) coagulation;
 - V.B.5.b).(6) cytogenetics;
 - V.B.5.b).(7) hematology;
 - V.B.5.b).(8) immunopathology;
 - V.B.5.b).(9) medical microscopy, including urinalysis;
 - V.B.5.b).(10) microbiology, including bacteriology, mycology, parasitology, and virology;
 - V.B.5.b).(11) molecular pathology;
 - V.B.5.b).(12) toxicology; and,
 - V.B.5.b).(13) other advanced diagnostic techniques as they become available.

- V.B.5.c) Each resident must participate in at least 30 autopsies during the program. Autopsies may be shared, but no more than four residents can count a shared case toward the minimum required number.
 - V.B.5.c).(1) If simulation is used to satisfy a portion of the resident's autopsy experience, only one resident can count the case and the simulation must include all aspects of the autopsy as required.

- V.B.5.c).(2) Residents must not count more than 10 focused autopsies toward the minimum required number.
- V.B.5.c).(3) Residents must not count more than five stillborn autopsies toward the minimum required number.
- V.B.5.c).(4) Residents must not count more than five single organ autopsies toward the minimum required number and only one resident must count the case.
- V.B.5.c).(5) Residents must participate fully in all aspects of an autopsy as appropriate to the case, to include:
- V.B.5.c).(5).(a) review of history and circumstances of death;
 - V.B.5.c).(5).(b) external examination of the body;
 - V.B.5.c).(5).(c) gross dissection; including organ evisceration;
 - V.B.5.c).(5).(d) review of microscopic and laboratory findings appropriate to the case;
 - V.B.5.c).(5).(e) preparation of written description of gross and microscopic findings;
 - V.B.5.c).(5).(f) development of opinion on cause of death; and, clinico-pathological correlation, as appropriate to the case.
 - V.B.5.c).(5).(g) clinico-pathological correlation, as appropriate to the case.
- V.B.5.c).(6) Residents must have exposure to forensic, pediatric, perinatal, and stillborn autopsies.
- V.B.5.c).(7) Residents must review all autopsy reports with faculty members.
- V.B.5.d) Each resident must examine and assess a minimum of 2000 surgical pathology specimens during the program.
- V.B.5.d).(1) The material must be from an adequate mix of cases to ensure exposure to both common and uncommon conditions.
 - V.B.5.d).(2) Residents should formulate a microscopic diagnosis for cases they have examined grossly.
 - V.B.5.d).(3) Residents should preview their cases, prior to sign-out, with an attending pathologist.

- V.B.5.e) Each resident must perform at least 200 intra-operative consultations
- V.B.5.f) Each resident must examine a minimum of 1500 cytologic specimens during the program
- V.B.5.g) This material must include a variety of both exfoliative and aspiration specimens
- V.B.6. AP-3
- V.B.6.a) Resident education in anatomic pathology must include instruction in:
- V.B.6.a).(1) fine needle aspiration techniques;
 - V.B.6.a).(2) autopsy and surgical pathology;
 - V.B.6.a).(3) clinical informatics;
 - V.B.6.a).(4) cytogenetics;
 - V.B.6.a).(5) cytopathology;
 - V.B.6.a).(6) dermatopathology;
 - V.B.6.a).(7) forensic pathology;
 - V.B.6.a).(8) histochemistry;
 - V.B.6.a).(9) immunopathology;
 - V.B.6.a).(10) medical renal pathology;
 - V.B.6.a).(11) molecular pathology;
 - V.B.6.a).(12) neuropathology;
 - V.B.6.a).(13) pediatric pathology;
 - V.B.6.a).(14) ultrastructural pathology; and,
 - V.B.6.a).(15) other advanced diagnostic techniques as they become available.
- V.B.6.b) Each resident must participate in at least 30 autopsies during the program. Autopsies may be shared, but no more than four residents can count a shared case toward the minimum required number.

- V.B.6.b).(1) If simulation is used to satisfy a portion of the resident's autopsy experience, only one resident can count the case and the simulation must include all aspects of the autopsy as required.
- V.B.6.b).(2) Residents must not count more than 10 focused autopsies toward the minimum required number.
- V.B.6.b).(3) Residents must not count more than five stillborn autopsies toward the minimum required number.
- V.B.6.b).(4) Residents must not count more than five single organ autopsies toward the minimum required number and only one resident must count the case.
- V.B.6.b).(5) Residents must participate fully in all aspects of an autopsy as appropriate to the case, to include:
- V.B.6.b).(5).(a) review of history and circumstances of death;
 - V.B.6.b).(5).(b) external examination of the body;
 - V.B.6.b).(5).(c) gross dissection, including organ evisceration;
 - V.B.6.b).(5).(d) review of microscopic and laboratory findings appropriate to the case;
 - V.B.6.b).(5).(e) preparation of written description of gross and microscopic findings;
 - V.B.6.b).(5).(f) development of opinion on cause of death; and,
 - V.B.6.b).(5).(g) clinico-pathological correlation, as appropriate to the case.
- V.B.6.b).(6) Residents must have exposure to forensic, pediatric, perinatal, and stillborn autopsies.
- V.B.6.b).(7) Residents must review all autopsy reports with faculty members.
- V.B.6.c) Each resident must examine and assess at least 2000 surgical pathology specimens.
- V.B.6.c).(1) This material must be from an adequate mix of cases to ensure exposure to both common and uncommon conditions.

- V.B.6.c).(2) Residents must formulate a microscopic diagnosis for the majority of cases they examine grossly.
- V.B.6.c).(3) Residents must preview their cases, prior to sign-out, with an attending pathologist.
- V.B.6.d) Each resident must perform at least 200 intra-operative consultations.
- V.B.6.e) Each resident must examine at least 1500 cytologic specimens during the program.
- V.B.6.e).(1) This material must include a variety of both exfoliative and aspiration specimens.
- V.B.7. CP-3
- V.B.7.a) Resident education in clinical pathology must include instruction in:
- V.B.7.a).(1) bone marrow aspiration techniques;
- V.B.7.a).(2) blood banking/transfusion medicine;
- V.B.7.a).(3) chemical pathology;
- V.B.7.a).(4) clinical informatics;
- V.B.7.a).(5) coagulation;
- V.B.7.a).(6) cytogenetics;
- V.B.7.a).(7) hematology;
- V.B.7.a).(8) immunopathology;
- V.B.7.a).(9) medical microscopy, including urinalysis;
- V.B.7.a).(10) microbiology, including bacteriology, mycology, parasitology, and virology;
- V.B.7.a).(11) molecular pathology;
- V.B.7.a).(12) toxicology; and,
- V.B.7.a).(13) other advanced diagnostic techniques as they become available.

V.C. Residents' Scholarly Activities

V.C.1. The program should provide an environment that promotes research and scholarly activity by the residents.

V.C.2. Each resident should participate in at least one of the following:

V.C.2.a) research; or,

V.C.2.b) evidence-based presentations at journal club or meetings (local, regional, or national); or,

V.C.2.c) preparation/submission of articles for peer-reviewed publication.

V.D. Duty Hour and Work Limitations

See International Foundational Requirements, Section VI.

VI. ACGME-I Competencies

VI.A. Patient Care

Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

VI.A.1. All pathology residents must demonstrate proficiency in:

VI.A.1.a) interpreting immunohistochemical stains;

VI.A.1.b) the ability to provide appropriate and effective pathology consultation;

VI.A.1.c) interpreting laboratory data as part of patient care decision-making;

VI.A.1.d) providing medical advice on the diagnosis and management of diseases, and laboratory test selection and interpretation; and,

VI.A.1.e) ensuring laboratory quality, safety, and effective management, with appropriate support, including the ability to manage:

VI.A.1.e).(1) laboratory expense and revenue calculations and projections;

VI.A.1.e).(2) laboratory inspections;

VI.A.1.e).(3) method validation;

VI.A.1.e).(4) principles of human resource management;

- VI.A.1.e).(5) proficiency testing;
- VI.A.1.e).(6) public health reporting;
- VI.A.1.e).(7) quality assurance;
- VI.A.1.e).(8) regulations;
- VI.A.1.e).(9) risk management;
- VI.A.1.e).(10) safety; and,
- VI.A.1.e).(11) the use of hospital and laboratory information systems.

VI.A.2. Residents in APCP-4 must demonstrate proficiency in:

- VI.A.2.a) the performance and diagnostic interpretation of autopsies;
- VI.A.2.b) all aspects of an autopsy, as appropriate to the case;
- VI.A.2.c) examining and diagnosing surgical pathology specimens;
- VI.A.2.d) performing and diagnosing intra-operative consultations;
- VI.A.2.e) examining and diagnosing gynecologic, non-gynecologic, and fine needle aspiration cytology specimens; and,
- VI.A.2.f) interpreting common laboratory tests, including peripheral smears, body fluids, bone marrow aspirates and biopsies, microbiology and chemistry tests, and transfusion medicine tests.

VI.A.3. Residents in AP-3 must demonstrate proficiency in:

- VI.A.3.a) the performance and diagnostic interpretation of autopsies;
- VI.A.3.b) all aspects of an autopsy, as appropriate to the case;
- VI.A.3.c) examining and diagnosing surgical pathology specimens;
- VI.A.3.d) performing and diagnosing intra-operative consultations;
- VI.A.3.e) examining and diagnosing gynecologic, non-gynecologic, and fine needle aspiration cytology specimens; and,
- VI.A.3.e).(1) interpreting common laboratory tests, including bone marrow biopsies, and, if applicable, peripheral smears and bone marrow aspirates.

VI.A.4. Residents in CP-3 must demonstrate proficiency in interpreting common laboratory tests, including peripheral smears, body fluids, bone marrow

aspirates and biopsies, microbiology and chemistry tests, and transfusion medicine tests.

VI.B. Medical Knowledge

Residents must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care.

VI.B.1. All pathology residents must demonstrate proficiency in knowledge of:

VI.B.1.a) pathogenesis, diagnostic techniques, and prognostic factors for disease processes commonly analyzed and diagnosed by laboratory and pathologic methods, as matches the program's specialty concentration; and,

VI.B.1.b) the principles of laboratory management.

VI.B.2. APCP-4 residents must demonstrate proficiency in knowledge of performance of:

VI.B.2.a) fine needle aspiration;

VI.B.2.b) apheresis; and,

VI.B.2.c) bone marrow procedures, including indications for and complications of such procedures, safety considerations, and specimen preparation.

VI.B.3. AP-3 residents must demonstrate proficiency in knowledge of performance of:

VI.B.3.a) fine needle aspiration; and,

VI.B.3.b) bone marrow procedures, including indications for and complications of such procedures, safety considerations, and specimen preparation.

VI.B.4. CP-3 residents must demonstrate proficiency in knowledge of performance of:

VI.B.4.a) apheresis; and,

VI.B.4.b) bone marrow procedures, including indications for and complications of such procedures, safety considerations, and specimen preparation.

VI.C. Practice-based Learning and Improvement

Residents must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously

improve patient care based on continuous self-evaluation and life-long learning. Residents are expected to develop skills and habits to be able to meet the following goals:

- VI.C.1. identify strengths, deficiencies, and limits in one's knowledge and expertise;
- VI.C.2. set learning and improvement goals;
- VI.C.3. identify and perform appropriate learning activities;
- VI.C.4. systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement;
- VI.C.5. incorporate formative evaluation feedback into daily practice;
- VI.C.6. locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems;
- VI.C.7. use information technology to optimize learning; and,
- VI.C.8. participate in the education of patients, families, students, residents and other health professionals;
- VI.C.9. participate in quality improvement projects; and,
- VI.C.10. evaluate personal practice using an individualized learning plan and portfolio.

VI.D. Interpersonal and Communication Skills

Residents must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals. Residents must:

- VI.D.1. communicate effectively with patients and their families, and members of the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds;
- VI.D.2. communicate effectively with physicians, other health professionals, and health-related agencies;
- VI.D.3. work effectively as a member or leader of a health care team or other professional group;
- VI.D.4. act in a consultative role to other physicians and health professionals;
- VI.D.5. maintain comprehensive, timely, and legible medical records, if applicable;

VI.D.6. demonstrate competence in effective verbal and written communication; and,

VI.D.7. demonstrate competence in generating comprehensive pathology and consultation reports.

VI.E. Professionalism

Residents must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles. Residents must to demonstrate:

VI.E.1. compassion, integrity, and respect for others;

VI.E.2. responsiveness to patient needs that supersedes self-interest;

VI.E.3. respect for patient privacy and autonomy;

VI.E.4. accountability to patients, society, and the profession; and,

VI.E.5. sensitivity and responsiveness to a diverse patient population, including to diversity in gender, age, culture, race, religion, disability, and sexual orientation.

VI.F. Systems-based Practice

Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care. Residents must :

VI.F.1. work effectively in various health care delivery settings and systems relevant to their clinical specialty;

VI.F.2. coordinate patient care within the health care system relevant to their clinical specialty;

VI.F.3. incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population-based care as appropriate;

VI.F.4. advocate for quality patient care and optimal patient care systems;

VI.F.5. work in inter-professional teams to enhance patient safety and improve patient care quality; and,

VI.F.6. participate in identifying system errors and implementing potential systems solutions.