



ACGME International

**Advanced Specialty Program Requirements for
Graduate Medical Education in
Orthopaedic Surgery**

Reformatted: 1 April 2022

Revised: 12 December 2015, Effective: 1 July 2016

Revised: 1 August 2014, Effective: 1 July 2016

Initial Approval: 22 September 2010

**ACGME International Specialty Program Requirements for
Graduate Medical Education
in Orthopaedic Surgery**

Int. Introduction

Background and Intent: Programs must achieve and maintain Foundational Accreditation according to the ACGME-I Foundational Requirements prior to receiving Advanced Specialty Accreditation. The Advanced Specialty Requirements noted below complement the ACGME-I Foundational Requirements. For each section, the Advanced Specialty Requirements should be considered together with the Foundational Requirements.

Int. I. Definition and Scope of the Specialty

The surgical specialty of orthopaedic surgery includes the study and prevention of musculoskeletal diseases, disorders, and injuries and their treatment by medical, surgical, and physical methods.

Int. II. Duration of Education

Int. II.A. The educational program in orthopaedic surgery must be 60 or 72 months in length.

I. Institution

I.A. Sponsoring Institution

I.A.1. The Sponsoring Institution should sponsor ACGME-I-accredited programs in general surgery, internal medicine, and pediatrics to provide an adequate interdisciplinary educational experience for the residents.

I.B. Participating Sites

See International Foundational Requirements, Section I.B.

II. Program Personnel and Resources

II.A. Program Director

See International Foundational Requirements, Section II.A.

II.B. Faculty

See International Foundational Requirements, Section II.B.

II.C. Other Program Personnel

See International Foundational Requirements, Section II.C.

II.D. Resources

- II.D.1. Clinical problems of sufficient variety and volume to afford the residents adequate experience in the diagnosis and management of adult and pediatric orthopaedic disorders must be available.
- II.D.2. Resources for scholarly activity by residents must include laboratory space and equipment, computer and data analysis services, statistical consultation services, research conferences, faculty expertise and supervision, support personnel, time, and funding.

III. Resident Appointment

See International Foundational Requirements, Section III.

IV. Specialty-Specific Educational Program

IV.A. ACGME-I Competencies

- IV.A.1. The program must integrate the following ACGME-I Competencies into the curriculum.

IV.A.1.a) Professionalism

- IV.A.1.a).(1) Residents must demonstrate a commitment to professionalism and an adherence to ethical principles. Residents must demonstrate:

IV.A.1.a).(1).(a) compassion, integrity, and respect for others;

IV.A.1.a).(1).(b) responsiveness to patient needs that supersedes self-interest;

IV.A.1.a).(1).(c) respect for patient privacy and autonomy;

IV.A.1.a).(1).(d) accountability to patients, society, and the profession; and,

IV.A.1.a).(1).(e) sensitivity and responsiveness to a diverse patient population, including to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation.

IV.A.1.b) Patient Care and Procedural Skills

- IV.A.1.b).(1) Residents must provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. Residents must demonstrate competence in:

IV.A.1.b).(1).(a) the pre-admission, hospital, operative, and follow-up care (including rehabilitation) of patients;

- IV.A.1.b).(1).(b) gathering essential and accurate information about their patients;
- IV.A.1.b).(1).(c) making informed decisions about diagnostic and therapeutic interventions based on patient information and preferences, up-to-date scientific evidence, and clinical judgment;
- IV.A.1.b).(1).(d) developing and carrying out patient management plans;
- IV.A.1.b).(1).(e) using information technology to support patient care decisions and patient education;
- IV.A.1.b).(1).(f) performing all medical and invasive procedures essential for the practice of orthopaedic surgery;
- IV.A.1.b).(1).(g) providing health care services aimed at preventing health problems or maintaining health;
- IV.A.1.b).(1).(h) using investigatory and analytic thinking approach to clinical situations; and,
- IV.A.1.b).(1).(i) applying the basic and clinically supportive sciences appropriate to orthopaedic surgery.

IV.A.1.c) Medical Knowledge

- IV.A.1.c).(1) 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. Residents must demonstrate knowledge of:
 - IV.A.1.c).(1).(a) anatomy and physiology of the musculoskeletal system;
 - IV.A.1.c).(1).(b) pathology of the musculoskeletal system, to include correlative pathology (gross and microscopic pathology related to clinical and roentgenographic findings);
 - IV.A.1.c).(1).(c) biomechanic principles, terminology, and applications in orthopaedics;
 - IV.A.1.c).(1).(d) the appropriate use and interpretation of radiographic and other imaging techniques;
 - IV.A.1.c).(1).(e) orthopaedic oncology;
 - IV.A.1.c).(1).(f) rehabilitation of neurologic injury and disease;

- IV.A.1.c).(1).(g) spinal cord injury rehabilitation;
- IV.A.1.c).(1).(h) orthotics and prosthetics;
- IV.A.1.c).(1).(i) cartilage, bone, and tendon reparative processes; and,
- IV.A.1.c).(1).(j) bone metabolism.
- IV.A.1.d) Practice-based Learning and Improvement
- IV.A.1.d).(1) 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 constant self-evaluation and lifelong learning. Residents are expected to develop skills and habits to be able to meet the following goals:
 - IV.A.1.d).(1).(a) identify strengths, deficiencies, and limits in one's knowledge and expertise;
 - IV.A.1.d).(1).(b) identify and perform appropriate learning activities;
 - IV.A.1.d).(1).(c) incorporate formative evaluation feedback into daily practice;
 - IV.A.1.d).(1).(d) locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems;
 - IV.A.1.d).(1).(e) participate in the education of patients, patients' families, students, other residents, and other health professionals;
 - IV.A.1.d).(1).(f) set learning and improvement goals;
 - IV.A.1.d).(1).(g) systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement; and,
 - IV.A.1.d).(1).(h) use information technology to optimize learning.
- IV.A.1.e) Interpersonal and Communication Skills
- IV.A.1.e).(1) 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:

- IV.A.1.e).(1).(a) communicate effectively with patients, patients' families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds;
- IV.A.1.e).(1).(b) communicate effectively with physicians, other health professionals, and health-related agencies;
- IV.A.1.e).(1).(c) work effectively as a member or leader of a health care team or other professional group;
- IV.A.1.e).(1).(d) act in a consultative role to other physicians and health professionals; and,
- IV.A.1.e).(1).(e) maintain comprehensive, timely, and legible medical records, if applicable.

IV.A.1.f) **Systems-based Practice**

IV.A.1.f).(1) 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:

- IV.A.1.f).(1).(a) work effectively in various health care delivery settings and systems relevant to their clinical specialty;
- IV.A.1.f).(1).(b) coordinate patient care within the health care system relevant to their clinical specialty;
- IV.A.1.f).(1).(c) incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population-based care as appropriate;
- IV.A.1.f).(1).(d) advocate for quality patient care and optimal patient care systems;
- IV.A.1.f).(1).(e) work in interprofessional teams to enhance patient safety and improve patient care quality; and,
- IV.A.1.f).(1).(f) participate in identifying system errors and implementing potential systems solutions.

IV.B. Regularly Scheduled Educational Activities

- IV.B.1. On average, there must be at least four hours of formal teaching activities each week.
- IV.B.2. Residents must have instruction in:

- IV.B.2.a) basic motor skills, including proper use of surgical instruments and operative techniques;
 - IV.B.2.b) anatomy, including study and dissection of anatomic specimens by the residents, and lectures or other formal sessions;
 - IV.B.2.c) pathology, including correlative pathology in which gross and microscopic pathology are related to clinical and roentgenographic findings;
 - IV.B.2.d) biomechanics presented in seminars or conferences emphasizing principles, terminology, and application to orthopaedics;
 - IV.B.2.e) the appropriate use and interpretation of radiographic and other imaging techniques; and,
 - IV.B.2.f) orthopaedic oncology, rehabilitation of neurologic injury and disease, spinal cord injury rehabilitation, orthotics and prosthetics, and the ethics of medical practice resources.
- IV.B.3. Basic science education and principal clinical conferences must be provided.
- IV.B.3.a) The basic science program must include resident education in biomechanics; biomaterials; pathophysiology of cartilage, bone, tendon, and muscle; pharmacology of nonsteroidal anti-inflammatory drugs (NSAIDs); bisphosphonates and antimicrobials; and basic genetics.
 - IV.B.3.b) Residents must have organized instruction that links pathophysiologic processes to the diagnosis, treatment, and management of clinical disorders.
 - IV.B.3.c) Basic science education and principal clinical conferences should be provided at the primary clinical site.
- IV.B.4. Supplemental conferences should be provided at other locations.
- IV.B.5. Evaluation of new or experimental techniques and/or materials should be included in formal teaching activities.

IV.C. Clinical Experiences

- IV.C.1. The program director must be responsible for the design, implementation, and oversight of the PGY-1.
 - IV.C.1.a) The PGY-1 must include six months of structured education on non-orthopaedic surgery rotations designed to develop residents' competence in basic surgical skills, the peri-operative care of surgical patients, musculoskeletal image interpretation, medical management of patients, and airway management skills.

- IV.C.1.a).(1) At least three months must be on surgical rotations chosen from: general surgery; general surgery trauma; plastic/burn surgery; surgical or medical intensive care; and vascular surgery.
- IV.C.1.a).(2) The additional three months must be on rotations chosen from: anesthesiology; basic surgical skills; emergency medicine; general surgery; general surgery trauma; internal medicine; medical or surgical intensive care; musculoskeletal radiology; neurological surgery; pediatric surgery; physical medicine and rehabilitation; plastic/burn surgery; rheumatology; and vascular surgery.
- IV.C.1.a).(3) The total time a resident is assigned to any one non-orthopaedic service must not exceed two months.
- IV.C.2. Following the PGY-1, the curriculum must include at least 48 months of progressive education in orthopaedic surgery and clinical services.
- IV.C.3. Residents' clinical education must include extensive experience in pre-operative evaluation and decision-making, intra-operative treatment, and immediate and long-term post-operative care of both inpatients and outpatients.
- IV.C.3.a) Each resident should be the surgeon or first assistant for at least 200 cases per year and see at least 750 outpatients per year.
- IV.C.4. Basic motor skills must be taught during clinical activities, especially in the operating room.
- IV.C.5. Residents must be involved in all aspects of care of the same patient.
- IV.C.6. Residents' clinical experience must include:
- IV.C.6.a) general adult orthopaedics;
- IV.C.6.b) general pediatric orthopaedics and pediatric trauma, including multisystem trauma;
- IV.C.6.c) surgery of the spine;
- IV.C.6.d) surgery of the hand;
- IV.C.6.e) surgery of the foot;
- IV.C.6.f) arthroscopic-assisted surgery of the knee and shoulder;
- IV.C.6.g) orthopaedic oncology, including metastatic disease; and,
- IV.C.6.h) orthopaedic rehabilitation, including amputations and post-amputation care.

IV.C.7. Residents must have adequate experience in non-operative outpatient diagnosis and care of adults and children for all orthopaedic anatomic areas.

IV.C.7.a) Residents should have at least two half-days each week of directly supervised outpatient clinical experience in a physician's office or in hospital clinics, with a minimum of 10 patients per session.

IV.C.8. Residents should evaluate patients before participating in their surgery.

IV.D. Scholarly Activity

See International Foundational Requirements, Section IV.D.

V. Evaluation

See International Foundational Requirements, Section V.

VI. The Learning and Working Environment

VI.A. Principles

See International Foundational Requirements, Section VI.A.

VI.B. Patient Safety

See International Foundational Requirements, Section VI.B.

VI.C. Quality Improvement

See International Foundational Requirements, Section VI.C.

VI.D. Supervision and Accountability

See International Foundational Requirements, Section VI.D.

VI.E. Professionalism

See International Foundational Requirements, Section VI.E.

VI.F. Well-Being

See International Foundational Requirements, Section VI.F.

VI.G. Fatigue

See International Foundational Requirements, Section VI.G.

VI.H. Transitions of Care

See International Foundational Requirements, Section VI.H.

VI.I. Clinical Experience and Education

VI.I.1. After 24 hours of continuous duty, residents must not accept any patient for whom the orthopaedic surgery service or department has not previously provided care.

VI.J. On-Call Activities

See International Foundational Requirements, Section VI.J.