



ACGME Program Requirements for Graduate Medical Education in Nuclear Medicine

Revision Information

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Definitions

For more information, see the [ACGME Glossary of Terms](#).

Core Requirements: Statements that define structure, resource, or process elements essential to every graduate medical educational program.

Detail Requirements: Statements that describe a specific structure, resource, or process, for achieving compliance with a Core Requirement. Programs and sponsoring institutions in substantial compliance with the Outcome Requirements may utilize alternative or innovative approaches to meet Core Requirements.

Outcome Requirements: Statements that specify expected measurable or observable attributes (knowledge, abilities, skills, or attitudes) of residents or fellows at key stages of their graduate medical education.

Osteopathic Recognition

For programs with or applying for Osteopathic Recognition, the Osteopathic Recognition Requirements also apply (www.acgme.org/OsteopathicRecognition).

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ACGME Program Requirements for Graduate Medical Education

in Nuclear Medicine

Common Program Requirements (Residency) are in BOLD

Where applicable, italicized text is used to provide definitions or describe the underlying philosophy of the requirements in that section. These statements are not program requirements and are therefore not citable.

Introduction

Definition of Graduate Medical Education

Graduate medical education is the crucial step of professional development between medical school and autonomous clinical practice. It is in this vital phase of the continuum of medical education that residents learn to provide optimal patient care under the supervision of faculty members who not only instruct, but serve as role models of excellence, compassion, cultural sensitivity, professionalism, and scholarship.

Graduate medical education transforms medical students into physician scholars who care for the patient, patient's family, and a heterogeneous community; create and integrate new knowledge into practice; and educate future generations of physicians to serve the public. Practice patterns established during graduate medical education persist many years later.

Graduate medical education has as a core tenet the graded authority and responsibility for patient care. The care of patients is undertaken with appropriate faculty supervision and conditional independence, allowing residents to attain the knowledge, skills, attitudes, judgment, and empathy required for autonomous practice. Graduate medical education develops physicians who focus on excellence in delivery of safe, accessible, affordable, high-quality care for all, to improve the health of the populations they serve.

Graduate medical education occurs in clinical settings that establish the foundation for practice-based and lifelong learning. The professional development of the physician, begun in medical school, continues through faculty modeling of the effacement of self-interest in a humanistic environment that emphasizes joy in curiosity, problem-solving, academic rigor, and discovery. This transformation is often physically, emotionally, and intellectually demanding and occurs in a variety of clinical learning environments committed to graduate medical education and the well-being of patients, residents, fellows, faculty members, students, and all members of the health care team.

Definition of Specialty

Nuclear medicine is the medical specialty that uses the Tracer Principle, most often with radiopharmaceuticals, to evaluate molecular, metabolic, physiologic and pathologic conditions of the body for the purposes of diagnosis, therapy, and research.

Section 1: Oversight

Sponsoring Institution

The Sponsoring Institution is the organization or entity that assumes the ultimate financial and academic responsibility for a program of graduate medical education, consistent with the ACGME Institutional Requirements.

When the Sponsoring Institution is not a rotation site for the program, the most commonly utilized site of clinical activity for the program is the primary clinical site.

Background and Intent: Participating sites will reflect the health care needs of the community and the educational needs of the residents. A wide variety of organizations may provide a robust educational experience and, thus, Sponsoring Institutions and participating sites may encompass inpatient and outpatient settings including, but not limited to a university, a medical school, a teaching hospital, a nursing home, a school of public health, a health department, a public health agency, an organized health care delivery system, a medical examiner's office, an educational consortium, a teaching health center, a physician group practice, federally qualified health center, or an educational foundation.

- 1.1. The program must be sponsored by one ACGME-accredited Sponsoring Institution. (Core)

Participating Sites

A participating site is an organization providing educational experiences or educational assignments/rotations for residents.

- 1.2. The program, with approval of its Sponsoring Institution, must designate a primary clinical site. (Core)
 - 1.2.a. The program must be based at the primary clinical site. (Core)
 - 1.2.a.1. A program using multiple sites must ensure a unified educational experience for the residents. (Core)
 - 1.2.b. Each participating site must offer significant educational opportunities to the overall program. (Core)
 - 1.2.c. Programs should avoid affiliations with sites at such distances from the primary clinical site as to make resident attendance at rounds and conferences impractical, unless there is a comparable educational experience at a participating site. (Core)
- 1.3. There must be a program letter of agreement (PLA) between the program and each participating site that governs the relationship between the program and the participating site providing a required assignment. (Core)

- 1.3.a. The PLA must be renewed at least every 10 years. (Core)
- 1.3.b. The PLA must be approved by the designated institutional official (DIO). (Core)
- 1.4. The program must monitor the clinical learning and working environment at all participating sites. (Core)
- 1.5. At each participating site there must be one faculty member, designated by the program director as the site director, who is accountable for resident education at that site, in collaboration with the program director. (Core)

Background and Intent: While all residency programs must be sponsored by a single ACGME-accredited Sponsoring Institution, many programs will utilize other clinical settings to provide required or elective training experiences. At times it is appropriate to utilize community sites that are not owned by or affiliated with the Sponsoring Institution. Some of these sites may be remote for geographic, transportation, or communication issues. When utilizing such sites, the program must ensure the quality of the educational experience.

Suggested elements to be considered in PLAs will be found in the Guide to the Common Program Requirements. These include:

- Identifying the faculty members who will assume educational and supervisory responsibility for residents
- Specifying the responsibilities for teaching, supervision, and formal evaluation of residents
- Specifying the duration and content of the educational experience
- Stating the policies and procedures that will govern resident education during the assignment

- 1.6. The program director must submit any additions or deletions of participating sites routinely providing an educational experience, required for all residents, of one month full time equivalent (FTE) or more through the ACGME's Accreditation Data System (ADS). (Core)
- 1.7. **Resources**
The program, in partnership with its Sponsoring Institution, must ensure the availability of adequate resources for resident education. (Core)
 - 1.7.a. There must be a volume and variety of patients to ensure that residents gain experience in the full range of nuclear medicine/molecular imaging procedures and interpretations. (Core)

1.8. The program, in partnership with its Sponsoring Institution, must ensure healthy and safe learning and working environments that promote resident well-being and provide for:

1.8.a. access to food while on duty; (Core)

1.8.b. safe, quiet, clean, and private sleep/rest facilities available and accessible for residents with proximity appropriate for safe patient care; (Core)

Background and Intent: Care of patients within a hospital or health system occurs continually through the day and night. Such care requires that residents function at their peak abilities, which requires the work environment to provide them with the ability to meet their basic needs within proximity of their clinical responsibilities. Access to food and rest are examples of these basic needs, which must be met while residents are working. Residents should have access to refrigeration where food may be stored. Food should be available when residents are required to be in the hospital overnight. Rest facilities are necessary, even when overnight call is not required, to accommodate the fatigued resident.

1.8.c. clean and private facilities for lactation that have refrigeration capabilities, with proximity appropriate for safe patient care; (Core)

Background and Intent: Sites must provide private and clean locations where residents may lactate and store the milk within a refrigerator. These locations should be in close proximity to clinical responsibilities. It would be helpful to have additional support within these locations that may assist the resident with the continued care of patients, such as a computer and a phone. While space is important, the time required for lactation is also critical for the well-being of the resident and the resident's family, as outlined in 6.13.c.1.

1.8.d. security and safety measures appropriate to the participating site; and, (Core)

1.8.e. accommodations for residents with disabilities consistent with the Sponsoring Institution's policy. (Core)

1.9. Residents must have ready access to specialty-specific and other appropriate reference material in print or electronic format. This must include access to electronic medical literature databases with full text capabilities. (Core)

1.10. Other Learners and Health Care Personnel
The presence of other learners and other health care personnel, including, but not limited to residents from other programs, subspecialty fellows, and advanced practice providers, must not negatively impact the appointed residents' education. (Core)

Background and Intent: The clinical learning environment has become increasingly complex and often includes care providers, students, and post-graduate residents and fellows from multiple disciplines. The presence of these practitioners and their learners enriches the learning environment. Programs have a responsibility to monitor the learning environment to ensure that residents' education is not compromised by the presence of other providers and learners.

Section 2: Personnel

2.1. Program Director

There must be one faculty member appointed as program director with authority and accountability for the overall program, including compliance with all applicable program requirements. ^(Core)

2.2. The Sponsoring Institution's GMEC must approve a change in program director and must verify the program director's licensure and clinical appointment. ^(Core)

2.2.a. Final approval of the program director resides with the Review Committee. ^(Core)

Background and Intent: While the ACGME recognizes the value of input from numerous individuals in the management of a residency, a single individual must be designated as program director and have overall responsibility for the program. The program director's nomination is reviewed and approved by the GMEC.

2.3. The program must demonstrate retention of the program director for a length of time adequate to maintain continuity of leadership and program stability. ^(Core)

Background and Intent: The success of residency programs is generally enhanced by continuity in the program director position. The professional activities required of a program director are unique and complex and take time to master. All programs are encouraged to undertake succession planning to facilitate program stability when there is necessary turnover in the program director position.

2.3.a. The program director should serve in this position for a minimum of five years. ^(Detail)

2.4. The program director and, as applicable, the program's leadership team, must be provided with support adequate for administration of the program based upon its size and configuration. ^(Core)

2.4.a. At a minimum, the program director must be provided with the dedicated time and support specified below for administration of the program: ^(Core)

Number of Approved Resident Positions	Minimum Support Required (FTE)
1-6	0.15
7-12	0.20

Background and Intent: To achieve successful graduate medical education, individuals serving as education and administrative leaders of residency programs, as well as those significantly engaged in the education, supervision, evaluation, and mentoring of residents, must have sufficient dedicated professional time to perform the vital activities required to sustain an accredited program.

The ultimate outcome of graduate medical education is excellence in resident education and patient care.

The program director and, as applicable, the program leadership team, devote a portion of their professional effort to the oversight and management of the residency program, as defined in 2.6.a. – 2.6.i. Both provision of support for the time required for the leadership effort and flexibility regarding how this support is provided are important. Programs, in partnership with their Sponsoring Institutions, may provide support for this time in a variety of ways. Examples of support may include, but are not limited to, salary support, supplemental compensation, educational value units, or relief of time from other professional duties.

Program directors and, as applicable, members of the program leadership team, who are new to the role may need to devote additional time to program oversight and management initially as they learn and become proficient in administering the program. It is suggested that during this initial period the support described above be increased as needed.

In addition, it is important to remember that the dedicated time and support requirement for ACGME activities is a *minimum*, recognizing that, depending on the unique needs of the program, additional support may be warranted. The need to ensure adequate resources, including adequate support and dedicated time for the program director, is also addressed in Institutional Requirement 2.2.a. The amount of support and dedicated time needed for individual programs will vary based on a number of factors and may exceed the minimum specified in the applicable specialty/subspecialty-specific Program Requirements. It is expected that the Sponsoring Institution, in partnership with its accredited programs, will ensure support for program directors to fulfill their program responsibilities effectively.

2.5. Qualifications of the Program Director

The program director must possess specialty expertise and at least three years of documented educational and/or administrative experience, or qualifications acceptable to the Review Committee. (Core)

Background and Intent: Leading a program requires knowledge and skills that are established during residency and subsequently further developed. The time period from completion of residency until assuming the role of program director allows the individual to cultivate leadership abilities while becoming professionally established. The three-year period is intended for the individual's professional maturation.

The broad allowance for educational and/or administrative experience recognizes that strong leaders arise through a variety of pathways. These areas of expertise are important when identifying and appointing a program director. The choice of a program director should be informed by the mission of the program and the needs of the community.

In certain circumstances, the program and Sponsoring Institution may propose and the Review Committee may accept a candidate for program director who fulfills these goals but does not meet the three-year minimum.

2.5.a. The program director must possess current certification in the specialty for which they are the program director by the American Board of Nuclear Medicine (ABNM) or by the American Osteopathic Board of Nuclear Medicine (AOBNM), or specialty qualifications that are acceptable to the Review Committee. (Core)

2.5.a.1. Other acceptable qualifications are certification by the American Board of Radiology with subspecialty certification in Nuclear Radiology. (Core)

2.5.a.2. The program director should actively participate in Maintenance of Certification. (Core)

2.5.b. The program director must demonstrate ongoing clinical activity. (Core)

Background and Intent: A program director is a role model for faculty members and residents. The program director must participate in clinical activity consistent with the specialty. This activity will allow the program director to role model the Core Competencies for the faculty members and residents.

2.5.c. Program director qualifications must include being an authorized user for 10CFR 35.190, 290, and 390, including 392, 394, and 396. (Core)

2.5.d. Program director qualifications must include full-time appointment. (Core)

2.5.e. Program director qualifications must include broad knowledge of, experience with, and commitment to general nuclear medicine/molecular imaging. (Core)

2.6. Program Director Responsibilities

The program director must have responsibility, authority, and accountability for: administration and operations; teaching and scholarly activity; resident recruitment and selection, evaluation, and promotion of residents, and

disciplinary action; supervision of residents; and resident education in the context of patient care. (Core)

2.6.a. The program director must be a role model of professionalism. (Core)

Background and Intent: The program director, as the leader of the program, must serve as a role model to residents in addition to fulfilling the technical aspects of the role. As residents are expected to demonstrate compassion, integrity, and respect for others, they must be able to look to the program director as an exemplar. It is of utmost importance, therefore, that the program director model outstanding professionalism, high quality patient care, educational excellence, and a scholarly approach to work. The program director creates an environment where respectful discussion is welcome, with the goal of continued improvement of the educational experience.

2.6.b. The program director must design and conduct the program in a fashion consistent with the needs of the community, the mission(s) of the Sponsoring Institution, and the mission(s) of the program. (Core)

Background and Intent: The mission of institutions participating in graduate medical education is to improve the health of the public. Each community has health needs that vary based upon location and demographics. Programs must understand the social determinants of health of the populations they serve and incorporate them in the design and implementation of the program curriculum, with the ultimate goal of addressing these needs and eliminating health disparities.

2.6.c. The program director must administer and maintain a learning environment conducive to educating the residents in each of the ACGME Competency domains. (Core)

Background and Intent: The program director may establish a leadership team to assist in the accomplishment of program goals. Residency programs can be highly complex. In a complex organization, the leader typically has the ability to delegate authority to others, yet remains accountable. The leadership team may include physician and non-physician personnel with varying levels of education, training, and experience.

2.6.d. The program director must have the authority to approve or remove physicians and non-physicians as faculty members at all participating sites, including the designation of core faculty members, and must develop and oversee a process to evaluate candidates prior to approval. (Core)

Background and Intent: The provision of optimal and safe patient care requires a team approach. The education of residents by non-physician educators may enable the resident to better manage patient care and provides valuable advancement of the residents' knowledge. Furthermore, other individuals contribute to the education of residents in the basic science of the specialty or in research methodology. If the program director determines that the contribution of a non-physician individual is

significant to the education of the residents, the program director may designate the individual as a program faculty member or a program core faculty member.

- 2.6.e. The program director must have the authority to remove residents from supervising interactions and/or learning environments that do not meet the standards of the program. (Core)

Background and Intent: The program director has the responsibility to ensure that all who educate residents effectively role model the Core Competencies. Working with a resident is a privilege that is earned through effective teaching and professional role modeling. This privilege may be removed by the program director when the standards of the clinical learning environment are not met.

There may be faculty in a department who are not part of the educational program, and the program director controls who is teaching the residents.

- 2.6.f. The program director must submit accurate and complete information required and requested by the DIO, GMEC, and ACGME. (Core)

Background and Intent: This includes providing information in the form and format requested by the ACGME and obtaining requisite sign-off by the DIO.

- 2.6.g. The program director must provide a learning and working environment in which residents have the opportunity to raise concerns, report mistreatment, and provide feedback in a confidential manner as appropriate, without fear of intimidation or retaliation. (Core)

- 2.6.h. The program director must ensure the program's compliance with the Sponsoring Institution's policies and procedures related to grievances and due process, including when action is taken to suspend or dismiss, or not to promote or renew the appointment of a resident. (Core)

Background and Intent: A program does not operate independently of its Sponsoring Institution. It is expected that the program director will be aware of the Sponsoring Institution's policies and procedures, and will ensure they are followed by the program's leadership, faculty members, support personnel, and residents.

- 2.6.i. The program director must ensure the program's compliance with the Sponsoring Institution's policies and procedures on employment and non-discrimination. (Core)

- 2.6.j. The program director must document verification of education for all residents within 30 days of completion of or departure from the program. (Core)

- 2.6.k. The program director must provide verification of an individual resident's education upon the resident's request, within 30 days. (Core)

Background and Intent: Primary verification of graduate medical education is important to credentialing of physicians for further training and practice. Such verification must be accurate and timely. Sponsoring Institution and program policies for record retention are important to facilitate timely documentation of residents who have previously completed the program. Residents who leave the program prior to completion also require timely documentation of their summative evaluation.

- 2.6.I. The program director must provide applicants who are offered an interview with information related to the applicant's eligibility for the relevant specialty board examination(s). (Core)

Faculty

Faculty members are a foundational element of graduate medical education – faculty members teach residents how to care for patients. Faculty members provide an important bridge allowing residents to grow and become practice-ready, ensuring that patients receive the highest quality of care. They are role models for future generations of physicians by demonstrating compassion, commitment to excellence in teaching and patient care, professionalism, and a dedication to lifelong learning. Faculty members experience the pride and joy of fostering the growth and development of future colleagues. The care they provide is enhanced by the opportunity to teach and model exemplary behavior. By employing a scholarly approach to patient care, faculty members, through the graduate medical education system, improve the health of the individual and the population.

Faculty members ensure that patients receive the level of care expected from a specialist in the field. They recognize and respond to the needs of the patients, residents, community, and institution. Faculty members provide appropriate levels of supervision to promote patient safety. Faculty members create an effective learning environment by acting in a professional manner and attending to the well-being of the residents and themselves.

Background and Intent: “Faculty” refers to the entire teaching force responsible for educating residents. The term “faculty,” including “core faculty,” does not imply or require an academic appointment.

- 2.7. There must be a sufficient number of faculty members with competence to instruct and supervise all residents. (Core)
- 2.8. **Faculty Responsibilities**
Faculty members must be role models of professionalism. (Core)
- 2.8.a. Faculty members must demonstrate commitment to the delivery of safe, high-quality, cost-effective, patient-centered care. (Core)

Background and Intent: Patients have the right to expect quality, cost-effective care with patient safety at its core. The foundation for meeting this expectation is formed during residency and fellowship. Faculty members model these goals and continually strive for improvement in care and cost, embracing a commitment to the patient and the community they serve.

- 2.8.b.** Faculty members must demonstrate a strong interest in the education of residents, including devoting sufficient time to the educational program to fulfill their supervisory and teaching responsibilities. *(Core)*
- 2.8.c.** Faculty members must administer and maintain an educational environment conducive to educating residents. *(Core)*
- 2.8.d.** Faculty members must regularly participate in organized clinical discussions, rounds, journal clubs, and conferences. *(Core)*
- 2.8.e.** Faculty members must pursue faculty development designed to enhance their skills at least annually: *(Core)*

Background and Intent: Faculty development is intended to describe structured programming developed for the purpose of enhancing transference of knowledge, skill, and behavior from the educator to the learner. Faculty development may occur in a variety of configurations (lecture, workshop, etc.) using internal and/or external resources. Programming is typically needs-based (individual or group) and may be specific to the institution or the program. Faculty development programming is to be reported for the residency program faculty in the aggregate.

- 2.8.e.1.** as educators and evaluators; *(Detail)*
- 2.8.e.2.** in quality improvement, eliminating health care disparities, and patient safety; *(Detail)*
- 2.8.e.3.** in fostering their own and their residents' well-being; and, *(Detail)*
- 2.8.e.4.** in patient care based on their practice-based learning and improvement efforts. *(Detail)*

Background and Intent: Practice-based learning serves as the foundation for the practice of medicine. Through a systematic analysis of one's practice and review of the literature, one is able to make adjustments that improve patient outcomes and care. Thoughtful consideration to practice-based analysis improves quality of care, as well as patient safety. This allows faculty members to serve as role models for residents in practice-based learning.

- 2.9. Faculty Qualifications**
Faculty members must have appropriate qualifications in their field and hold appropriate institutional appointments. *(Core)*

2.10. Physician Faculty Members

Physician faculty members must have current certification in the specialty by the American Board of Nuclear Medicine or the American Osteopathic Board of Nuclear Medicine, or possess qualifications judged acceptable to the Review Committee. (Core)

2.10.a. In lieu of the qualifications in 2.10., physician faculty members must have current certification in nuclear radiology by the American Board of Radiology. (Core)

2.10.a.1. In programs affiliated with a medical school, all physician faculty members must have an academic appointment. (Core)

2.11. Core Faculty

Core faculty members must have a significant role in the education and supervision of residents and must devote a significant portion of their entire effort to resident education and/or administration, and must, as a component of their activities, teach, evaluate, and provide formative feedback to residents. (Core)

Background and Intent: Core faculty members are critical to the success of resident education. They support the program leadership in developing, implementing, and assessing curriculum, mentoring residents, and assessing residents' progress toward achievement of competence in and the autonomous practice of the specialty. Core faculty members should be selected for their broad knowledge of and involvement in the program, permitting them to effectively evaluate the program. Core faculty members may also be selected for their specific expertise and unique contribution to the program. Core faculty members are engaged in a broad range of activities, which may vary across programs and specialties. Core faculty members provide clinical teaching and supervision of residents, and also participate in non-clinical activities related to resident education and program administration. Examples of these non-clinical activities include, but are not limited to, interviewing and selecting resident applicants, providing didactic instruction, mentoring residents, simulation exercises, completing the annual ACGME Faculty Survey, and participating on the program's Clinical Competency Committee, Program Evaluation Committee, and other GME committees.

2.11.a. **Core faculty members must complete the annual ACGME Faculty Survey.** (Core)

2.11.b. There must be at least one core physician faculty member in addition to the program director. (Core)

2.11.b.1. Programs must maintain a ratio of at least one core physician faculty member per every two residents. (Core)

2.12. Program Coordinator

There must be a program coordinator. (Core)

- 2.12.a. The program coordinator must be provided with dedicated time and support adequate for administration of the program based upon its size and configuration. (Core)**
- 2.12.b. At a minimum, the program coordinator must be provided with the dedicated time and support specified below for administration of the program: (Core)**

Number of Approved Resident Positions	Minimum FTE
1-6	0.25
7-12	0.30

Background and Intent: The requirement does not address the source of funding required to provide the specified salary support.

Each program requires a lead administrative person, frequently referred to as a program coordinator, administrator, or as otherwise titled by the institution. This person will frequently manage the day-to-day operations of the program and serve as an important liaison and facilitator between the learners, faculty and other staff members, and the ACGME. Individuals serving in this role are recognized as program coordinators by the ACGME.

The program coordinator is a key member of the leadership team and is critical to the success of the program. As such, the program coordinator must possess skills in leadership and personnel management appropriate to the complexity of the program. Program coordinators are expected to develop in-depth knowledge of the ACGME and Program Requirements, including policies and procedures. Program coordinators assist the program director in meeting accreditation requirements, educational programming, and support of residents.

Programs, in partnership with their Sponsoring Institutions, should encourage the professional development of their program coordinators and avail them of opportunities for both professional and personal growth. Programs with fewer residents may not require a full-time coordinator; one coordinator may support more than one program.

The minimum required dedicated time and support specified in 2.12.b. includes activities directly related to administration of the accredited program. It is understood that coordinators often have additional responsibilities, beyond those directly related to program administration, including, but not limited to, departmental administrative responsibilities, medical school clerkships, planning lectures that are not solely intended for the accredited program, and mandatory reporting for entities other than the ACGME. Assignment of these other responsibilities will necessitate consideration of allocation of additional support so as not to preclude the coordinator from devoting the time specified above solely to administrative activities that support the accredited program.

In addition, it is important to remember that the dedicated time and support requirement for ACGME activities is a minimum, recognizing that, depending on the unique needs of the program, additional support may be warranted. The need to ensure adequate resources, including adequate support and dedicated time for the program coordinator, is also addressed in Institutional Requirement 2.2.d. The amount of support and dedicated time needed for individual programs will vary based on a number of factors and may exceed the minimum specified in the applicable specialty/subspecialty-specific Program Requirements. It is expected that the Sponsoring Institution, in partnership with its accredited programs, will ensure support for program coordinators to fulfill their program responsibilities effectively.

2.13. Other Program Personnel

The program, in partnership with its Sponsoring Institution, must jointly ensure the availability of necessary personnel for the effective administration of the program. (Core)

Background and Intent: Multiple personnel may be required to effectively administer a program. These may include staff members with clerical skills, project managers, education experts, and staff members to maintain electronic communication for the program. These personnel may support more than one program in more than one discipline.

Section 3: Resident Appointments

3.1. Residents must not be required to sign a non-competition guarantee or restrictive covenant. (Core)

3.2. Eligibility Requirements

An applicant must meet one of the following qualifications to be eligible for appointment to an ACGME-accredited program: (Core)

3.2.a. graduation from a medical school in the United States, accredited by the Liaison Committee on Medical Education (LCME) or graduation from a college of osteopathic medicine in the United States, accredited by the American Osteopathic Association Commission on Osteopathic College Accreditation (AOACOCA); or, (Core)

3.2.b. graduation from a medical school outside of the United States, and meeting one of the following additional qualifications: (Core)

- **holding a currently valid certificate from the Educational Commission for Foreign Medical Graduates (ECFMG) prior to appointment; or, (Core)**

- holding a full and unrestricted license to practice medicine in the United States licensing jurisdiction in which the ACGME-accredited program is located. (Core)

3.3. All prerequisite post-graduate clinical education required for initial entry or transfer into ACGME-accredited residency programs must be completed in ACGME-accredited residency programs, AOA-approved residency programs, Royal College of Physicians and Surgeons of Canada (RCPSC)-accredited or College of Family Physicians of Canada (CFPC)-accredited residency programs located in Canada, or in residency programs with ACGME International (ACGME-I) Advanced Specialty Accreditation. (Core)

3.3.a. Residency programs must receive verification of each resident's level of competency in the required clinical field using ACGME, CanMEDS, or ACGME-I Milestones evaluations from the prior training program upon matriculation. (Core)

Background and Intent: Programs with ACGME-I Foundational Accreditation or from institutions with ACGME-I accreditation do not qualify unless the program has also achieved ACGME-I Advanced Specialty Accreditation. To ensure entrants into ACGME-accredited programs from ACGME-I programs have attained the prerequisite milestones for this training, they must be from programs that have ACGME-I Advanced Specialty Accreditation.

3.3.a.1. To be eligible for appointment to the program at the NM1 level, residents must have satisfactorily completed one year of graduate medical education in a program that satisfies the requirements in 3.3. (Core)

3.3.a.1.a. This year must include a minimum of nine months of direct patient care. (Core)

3.3.a.2. To be eligible for appointment to the program at the NM2 level, residents must have satisfactorily completed a program that satisfies the requirements in 3.3. (Core)

3.3.a.2.a. The educational program for these residents must be 24 months in length. (Core)

3.3.a.3. To be eligible for appointment to the program at the NM3 level, residents must have satisfactorily completed a program in diagnostic radiology that satisfies the requirements in 3.3. (Core)

3.3.a.3.a. The educational program for these residents must be 12 months in length. (Core)

3.3.b. Resident Eligibility Exception

The Review Committee for Nuclear Medicine will allow the following exception to the resident eligibility requirements (for residents entering the program via 3.3.a.2. and 3.3.a.3.): (Core)

- 3.3.b.1. An ACGME-accredited residency program may accept an exceptionally qualified international graduate applicant who does not satisfy the eligibility requirements listed in 3.2. – 3.3., but who does meet all of the following additional qualifications and conditions: (Core)
- 3.3.b.1.a. evaluation by the program director and residency selection committee of the applicant’s suitability to enter the program, based on prior training and review of the summative evaluations of this training; and, (Core)
- 3.3.b.1.b. review and approval of the applicant’s exceptional qualifications by the GMEC; and, (Core)
- 3.3.b.1.c. verification of Educational Commission for Foreign Medical Graduates (ECFMG) certification. (Core)
- 3.3.b.2. Applicants accepted through this exception must have an evaluation of their performance by the Clinical Competency Committee within 12 weeks of matriculation. (Core)
- 3.4. Resident Complement
The program director must not appoint more residents than approved by the Review Committee. (Core)

Background and Intent: Programs are required to request approval of all complement changes, whether temporary or permanent, by the Review Committee through ADS. Permanent increases require prior approval from the Review Committee and temporary increases may also require approval. Specialty-specific instructions for requesting a complement increase are found in the “Documents and Resources” page of the applicable specialty section of the ACGME website.

- 3.5. Resident Transfers
The program must obtain verification of previous educational experiences and a summative competency-based performance evaluation prior to acceptance of a transferring resident, and Milestones evaluations upon matriculation. (Core)

Section 4: Educational Program

The ACGME accreditation system is designed to encourage excellence and innovation in graduate medical education regardless of the organizational affiliation, size, or location of the program.

The educational program must support the development of knowledgeable, skillful physicians who provide compassionate care.

It is recognized that programs may place different emphasis on research, leadership, public health, etc. It is expected that the program aims will reflect the nuanced program-

specific goals for it and its graduates; for example, it is expected that a program aiming to prepare physician-scientists will have a different curriculum from one focusing on community health.

4.1. Length of Program

The educational program in nuclear medicine must be 36 months in length. (Core)

4.2. Educational Components

The curriculum must contain the following educational components:

4.2.a. a set of program aims consistent with the Sponsoring Institution's mission, the needs of the community it serves, and the desired distinctive capabilities of its graduates, which must be made available to program applicants, residents, and faculty members; (Core)

4.2.b. competency-based goals and objectives for each educational experience designed to promote progress on a trajectory to autonomous practice. These must be distributed, reviewed, and available to residents and faculty members; (Core)

Background and Intent: The trajectory to autonomous practice is documented by Milestones evaluations. Milestones are considered formative and should be used to identify learning needs. Milestones data may lead to focused or general curricular revision in any given program or to individualized learning plans for any specific resident.

4.2.c. delineation of resident responsibilities for patient care, progressive responsibility for patient management, and graded supervision; (Core)

Background and Intent: These responsibilities may generally be described by PGY level and specifically by Milestones progress as determined by the Clinical Competency Committee. This approach encourages the transition to competency-based education. An advanced learner may be granted more responsibility independent of PGY level and a learner needing more time to accomplish a certain task may do so in a focused rather than global manner.

4.2.d. a broad range of structured didactic activities; and, (Core)

Background and Intent: It is intended that residents will participate in structured didactic activities. It is recognized that there may be circumstances in which this is not possible. Programs should define core didactic activities for which time is protected and the circumstances in which residents may be excused from these didactic activities. Didactic activities may include, but are not limited to, lectures, conferences, courses, labs, asynchronous learning, simulations, drills, case discussions, grand rounds, didactic teaching, and education in critical appraisal of medical evidence.

- 4.2.e. formal educational activities that promote patient safety-related goals, tools, and techniques. (Core)

ACGME Competencies

The Competencies provide a conceptual framework describing the required domains for a trusted physician to enter autonomous practice. These Competencies are core to the practice of all physicians, although the specifics are further defined by each specialty. The developmental trajectories in each of the Competencies are articulated through the Milestones for each specialty.

The program must integrate all ACGME Competencies into the curriculum.

4.3. ACGME Competencies – Professionalism

Residents must demonstrate a commitment to professionalism and an adherence to ethical principles. (Core)

Residents must demonstrate competence in:

- 4.3.a. compassion, integrity, and respect for others; (Core)
- 4.3.b. responsiveness to patient needs that supersedes self-interest; (Core)
- 4.3.c. cultural awareness; (Core)
- 4.3.d. respect for patient privacy and autonomy; (Core)
- 4.3.e. accountability to patients, society, and the profession; (Core)
- 4.3.f. respect and responsiveness to heterogeneous patient populations, including but not limited to gender, age, culture, race, religion, disabilities, national origin, socioeconomic status, and sexual orientation; (Core)
- 4.3.g. ability to recognize and develop a plan for one's own personal and professional well-being; and, (Core)
- 4.3.h. appropriately disclosing and addressing conflict or duality of interest. (Core)

Background and Intent: This includes the recognition that under certain circumstances, the interests of the patient may be best served by transitioning care to another practitioner. Examples include fatigue, conflict or duality of interest, not connecting well with a patient, or when another physician would be better for the situation based on skill set or knowledge base.

4.4. ACGME Competencies – Patient Care and Procedural Skills (Part A)

Residents must be able to provide patient care that is patient- and family-centered, compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. (Core)

Background and Intent: Quality patient care is safe, effective, timely, efficient, patient-centered, fair, and designed to improve population health, while reducing per capita costs. In addition, there should be a focus on improving the clinician's well-being as a means to improve patient care and reduce burnout among residents, fellows, and practicing physicians.

- 4.4.a. Residents must demonstrate competence in patient evaluation to include: pertinent patient information relevant to the requested procedure using patient interview; chart and computer data base review; the performance of a focused physical examination as indicated; and communication with the referring physician. (Core)
- 4.4.b. Residents must demonstrate competence in selection, performance, and interpretation of appropriate:
 - 4.4.b.1. musculoskeletal studies, including bone mineral density measurements, for malignant and benign disease; (Core)
 - 4.4.b.2. myocardial perfusion imaging with treadmill and pharmacologic stress, including patient monitoring, with emphasis on electrocardiographic interpretation; (Core)
 - 4.4.b.3. electrocardiogram (ECG)-gated ventriculography for evaluation of ventricular performance; (Core)
 - 4.4.b.4. endocrinologic studies, including studies of the thyroid and parathyroid; (Core)
 - 4.4.b.4.a. When appropriate, thyroid studies must include measurement of iodine uptake and dosimetry calculations for radio-iodine therapy. (Core)
 - 4.4.b.5. gastrointestinal studies, including transit studies, and studies of the liver and hepatobiliary system, of bleeding, and of Meckel's diverticulum; (Core)
 - 4.4.b.6. infection studies, such as gallium citrate, FDG PET, labeled leukocytes, and bone marrow; (Core)
 - 4.4.b.7. neurologic studies, including studies of cerebral perfusion, cerebral metabolism, and cerebrospinal fluid, including studies of dementia, epilepsy, and brain death; (Core)
 - 4.4.b.8. oncologic studies, including studies of sentinel node localization, fluorodeoxyglucose (FDG), Meta-Iodo-Benzyl-Guanidine (MIBG), somatostatin-receptor imaging, and other agents as they become available; (Core)
 - 4.4.b.9. pulmonary studies, including studies of perfusion and ventilation for pulmonary embolus, right-to-left shunts, and quantitative assessment of perfusion and ventilation; (Core)

- 4.4.b.10. urinary tract studies, including studies of renal perfusion, function and cortical imaging, and renal scintigraphy with pharmacologic interventions; (Core)
- 4.4.b.11. PET, PET/CT, and other hybrid molecular imaging studies for both oncologic and non-oncologic indications; (Core)
- 4.4.b.12. cross-sectional imaging of the brain, head and neck, thorax, abdomen, and pelvis with CT in the context of SPECT/CT and PET/CT; (Core)
- 4.4.b.13. therapeutic administration of radioiodine for both malignant and benign thyroid disease, including: patient selection; evaluating risks and benefits; determining the administered activity; patient identity verification; obtaining informed consent; documenting pregnancy status; using administrative controls to prevent a medical event; complying with federal and state regulations regarding medical use of radiopharmaceuticals; counseling patients and their families about radiation safety issues; and scheduling and performing post-therapy follow-up; (Core)
- 4.4.b.14. therapeutic administration of other unsealed radiopharmaceuticals for malignant and benign diseases, including: patient selection; evaluating risks and benefits; determining the administered activity; patient identity verification; obtaining informed consent; documenting pregnancy status; using administrative controls to prevent a medical event; complying with federal and state regulations regarding the medical use of radiopharmaceuticals; counseling patients and their families about radiation safety issues; and scheduling and performing post-therapy follow-up; (Core)
- 4.4.b.15. selection of the appropriate single photon or positron emitting radiopharmaceutical, administered activity, imaging technique, data analysis, and image presentation; and, (Core)
- 4.4.b.16. supervisory skills. (Core)
- 4.4.c. Residents must demonstrate compliance with radiation safety rules and regulations, including Nuclear Regulatory Commission (NRC) or agreement state rules, local regulations, and the ALARA (as low as reasonably achievable) principle for radiation protection. (Core)
- 4.4.d. Residents must have certification in both basic and advanced cardiac life support. (Core)

4.5. ACGME Competencies – Patient Care and Procedural Skills (Part B)
Residents must be able to perform all medical, diagnostic, and surgical procedures considered essential for the area of practice. (Core)

- 4.5.a. Residents must demonstrate competence in performing nuclear medicine procedures as well as the review and interpretation of the resulting images. (Core)

- 4.5.b. Residents must demonstrate competence in preparing radiopharmaceuticals, including preparing patient administered activity and performing quality control measures. (Core)
- 4.5.c. Residents must demonstrate competence in recommending, planning, conducting, supervising, interpreting, and reporting diagnostic and therapeutic nuclear medicine procedures appropriate for the clinical problem or condition. (Core)
- 4.5.d. Residents must demonstrate competence in correlating the nuclear medicine procedure with clinical information, laboratory, and other procedural or imaging studies. (Core)

4.6. ACGME Competencies – Medical Knowledge

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

- 4.6.a. Residents must demonstrate knowledge of radiation safety. (Core)
- 4.6.b. Residents must demonstrate knowledge of nuclear medicine instrumentation, including quality control. (Core)
- 4.6.c. Residents must demonstrate knowledge of nuclear medicine procedures, including: (Core)
 - 4.6.c.1. cardiovascular; (Core)
 - 4.6.c.2. endocrine; (Core)
 - 4.6.c.3. gastrointestinal; (Core)
 - 4.6.c.4. infection; (Core)
 - 4.6.c.5. musculoskeletal; (Core)
 - 4.6.c.6. neurologic; (Core)
 - 4.6.c.7. oncologic; (Core)
 - 4.6.c.8. pulmonary; (Core)
 - 4.6.c.9. urinary tract; (Core)
 - 4.6.c.10. PET and PET/CT for oncologic and non-oncologic indications; and, (Core)
 - 4.6.c.11. cross-sectional imaging of the brain, head and neck, thorax, abdomen, and pelvis with CT in the context of SPECT/CT and PET/CT. (Core)

- 4.6.d. Residents must demonstrate knowledge of diagnostic use of radiopharmaceuticals: clinical indications, technical performance, and interpretation of in-vivo imaging of the body organs and systems; using external detectors and scintillation cameras, including SPECT, SPECT/CT, PET, and PET/CT; and correlation of nuclear medicine procedures with other pertinent imaging modalities. (Core)
- 4.6.e. Residents must demonstrate knowledge of exercise and pharmacologic stress testing, including the pharmacology of cardioactive drugs and physiologic gating techniques. (Core)
- 4.6.f. Residents must demonstrate knowledge of non-imaging studies. (Core)
- 4.6.g. Residents must demonstrate knowledge of radioiodine therapy for malignant and benign thyroid disease. (Core)
- 4.6.h. Residents must demonstrate knowledge of therapeutic uses of other unsealed radiopharmaceuticals in the treatment of malignant and benign diseases. (Core)
- 4.6.i. Residents must demonstrate knowledge of fundamentals of imaging molecular targets, processes and events, and existing and emerging molecular imaging techniques, particularly as they relate to current clinical practice. (Core)
- 4.7. ACGME Competencies – 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 constant self-evaluation and lifelong learning. (Core)
- 4.7.a. Residents must demonstrate competence in identifying strengths, deficiencies, and limits in one's knowledge and expertise. (Core)
- 4.7.b. Residents must demonstrate competence in setting learning and improvement goals. (Core)
- 4.7.c. Residents must demonstrate competence in identifying and performing appropriate learning activities. (Core)
- 4.7.d. Residents must demonstrate competence in systematically analyzing practice using quality improvement methods, including activities aimed at reducing health care disparities, and implementing changes with the goal of practice improvement. (Core)
- 4.7.e. Residents must demonstrate competence in incorporating feedback and formative evaluation into daily practice. (Core)
- 4.7.f. Residents must demonstrate competence in locating, appraising, and assimilating evidence from scientific studies related to their patients' health problems. (Core)

- 4.7.g. Residents must demonstrate competence in regularly obtaining follow-up information, and correlating the clinical findings with their study interpretation. (Core)
- 4.7.h. Residents must demonstrate competence in evaluating their personal practice utilizing scientific evidence, best practices, and/or self-assessment programs or modules for practice improvement. (Core)
- 4.8. ACGME Competencies – 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. (Core)
- 4.8.a. Residents must demonstrate competence in communicating effectively with patients and patients' families, as appropriate, across a broad range of socioeconomic circumstances, cultural backgrounds, and language capabilities, learning to engage interpretive services as required to provide appropriate care to each patient. (Core)
- 4.8.b. Residents must demonstrate competence in communicating effectively with physicians, other health professionals, and health-related agencies. (Core)
- 4.8.c. Residents must demonstrate competence in working effectively as a member or leader of a health care team or other professional group. (Core)
- 4.8.d. Residents must demonstrate competence in educating patients, patients' families, students, other residents, and other health professionals. (Core)
- 4.8.e. Residents must demonstrate competence in acting in a consultative role to other physicians and health professionals. (Core)
- 4.8.f. Residents must demonstrate competence in maintaining comprehensive, timely, and legible health care records, if applicable. (Core)
- 4.8.g. Residents must learn to communicate with patients and patients' families to partner with them to assess their care goals, including, when appropriate, end-of-life goals. (Core)
- 4.8.h. Residents must demonstrate competence in preparing a complete and concise nuclear medicine procedure interpretation report. (Core)
- 4.8.i. Residents must demonstrate competence in communicating the final procedure interpretation, an appropriate differential diagnosis, and any clinical, diagnostic, or therapeutic recommendations promptly and clearly to the referring health care provider. (Core)
- 4.8.j. Residents must demonstrate competence in providing effective contributions to interdisciplinary and clinical didactic conferences. (Core)

4.8.k. Residents must demonstrate competence in educating patients and their families about diagnostic and therapeutic nuclear medicine procedures. (Core)

4.8.l. Residents must demonstrate competence in supervising and teaching junior residents, residents from other services, and students on rotations in nuclear medicine. (Core)

4.9. ACGME Competencies – Systems-Based Practice

Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care, including the social determinants of health, as well as the ability to call effectively on other resources to provide optimal health care. (Core)

Background and Intent: Medical practice occurs in the context of an increasingly complex clinical care environment where optimal patient care requires attention to compliance with external and internal administrative and regulatory requirements.

4.9.a. Residents must demonstrate competence in working effectively in various health care delivery settings and systems relevant to their clinical specialty. (Core)

4.9.b. Residents must demonstrate competence in coordinating patient care across the health care continuum and beyond as relevant to their clinical specialty. (Core)

Background and Intent: Every patient deserves to be treated as a whole person. Therefore it is recognized that any one component of the health care system does not meet the totality of the patient's needs. An appropriate transition plan requires coordination and forethought by an interdisciplinary team. The patient benefits from proper care and the system benefits from proper use of resources.

4.9.c. Residents must demonstrate competence in advocating for quality patient care and optimal patient care systems. (Core)

4.9.d. Residents must demonstrate competence in participating in identifying system errors and implementing potential systems solutions. (Core)

4.9.e. Residents must demonstrate competence in incorporating considerations of value, cost awareness, delivery and payment, and risk-benefit analysis in patient and/or population-based care as appropriate. (Core)

4.9.f. Residents must demonstrate competence in understanding health care finances and its impact on individual patients' health decisions. (Core)

- 4.9.g. **Residents must demonstrate competence in using tools and techniques that promote patient safety and disclosure of patient safety events (real or simulated).** (Detail)
- 4.9.h. **Residents must learn to advocate for patients within the health care system to achieve the patient's and patient's family's care goals, including, when appropriate, end-of-life goals.** (Core)
- 4.9.i. Residents must demonstrate an understanding of how the components of the local and national health care system function interdependently, and how changes to improve the system involve group and individual efforts. (Core)
- 4.9.i.1. Residents must function as consultants for other health care professionals, and act as resources for information regarding the appropriate use of imaging resources, and efforts. (Core)
- 4.9.j. Residents must demonstrate competence in identifying existing systems problems that compromise patient care, systematically analyzing the problems, developing solutions, and evaluating the effectiveness of interventions at the departmental, institutional, local, or national levels. (Core)

Curriculum Organization and Resident Experiences

4.10. Curriculum Structure

The curriculum must be structured to optimize resident educational experiences, the length of the experiences, and the supervisory continuity. These educational experiences include an appropriate blend of supervised patient care responsibilities, clinical teaching, and didactic educational events. (Core)

Background and Intent: In some specialties, frequent rotational transitions, inadequate continuity of faculty member supervision, and dispersed patient locations within the hospital have adversely affected optimal resident education and effective team-based care. The need for patient care continuity varies from specialty to specialty and by clinical situation, and may be addressed by the individual Review Committee.

- 4.10.a. The assignment of educational experiences should be structured to minimize the frequency of transitions. (Detail)
- 4.10.b. Educational experiences should be of sufficient length to provide a quality educational experience defined by ongoing supervision, longitudinal relationships with faculty members, and high-quality assessment and feedback. (Detail)
- 4.11. **Didactic and Clinical Experiences**
Residents must be provided with protected time to participate in core didactic activities. (Core)
 - 4.11.a. There must be a formal didactic lecture schedule. (Core)

- 4.11.a.1. Residents must attend the regularly scheduled didactic lectures. (Core)
- 4.11.a.2. This schedule should indicate the specific date and time of each lecture, the topic of each lecture, the individual presenting each lecture, and the duration of each lecture. (Detail)
- 4.11.a.3. The didactic curriculum should include all topics included in the Medical Knowledge outcomes (Requirement 4.6.). (Core)
- 4.11.b. Basic Science Educational Program
Residents must complete classroom and laboratory experience in basic radionuclide handling techniques applicable to the medical use of unsealed byproduct material and radionuclides requiring a written directive. (Core)
 - 4.11.b.1. This must include radiation physics and instrumentation, including: (Core)
 - 4.11.b.1.a. radiation physics: structure of matter, modes of radioactive decay, particle and photon emissions, and interactions of radiation with matter; and, (Core)
 - 4.11.b.1.b. instrumentation: principles of instrumentation used in detection, measurement, and imaging of radioactivity with special emphasis on gamma cameras, including single photon emission computed tomography (SPECT), SPECT/computed tomography (CT), positron emission tomography (PET), and PET/CT systems, and associated electronic instrumentation and computers employed in image production and display. (Core)
 - 4.11.b.1.b.1. Instruction must be provided in the instrumentation principles of magnetic resonance imaging (MRI) and multi-slice CT. (Core)
 - 4.11.b.2. This must include radiation protection and regulations, including means of reducing radiation exposure, radiation dose limits, evaluation of patients exposed to potentially dangerous levels of radiation, assisting in the medical management of persons exposed to ionizing radiation, management and disposal of radioactive substances, and establishment of radiation safety programs in accordance with federal and state regulations. (Core)
 - 4.11.b.3. This must include mathematics pertaining to the use and measurement of radioactivity, including statistics and medical decision making. (Core)
 - 4.11.b.4. This must include chemistry of radioactive material for medical use, including: reactor, cyclotron, and generator production of radionuclides; radiochemistry; and formulation of radiopharmaceuticals. (Core)
 - 4.11.b.5. This must include radiation biology, including biological effects of ionizing radiation and calculation of radiation dose. (Core)

- 4.11.c. All residents and faculty members must participate in regularly scheduled clinical nuclear medicine seminars, journal clubs, and interdisciplinary conferences. (Core)
- 4.11.c.1. Participation in regularly scheduled seminars, conferences, and journal clubs should be documented with attendance logs. (Core)
- 4.11.d. All residents must log cases in the ACGME Case Log System as defined by the Review Committee. (Core)
- 4.11.d.1. The logs must be submitted annually to the Review Committee in accordance with the specified format and due date. (Core)
- 4.11.d.2. The record must be reviewed by the program director at least annually. (Core)
- 4.11.e. Residents entering the program at any level must participate in a radiopharmacy rotation. (Core)
- 4.11.e.1. This experience must include ordering, receiving, and unpacking radioactive materials safely, and performing the related radiation surveys. (Core)
- 4.11.e.2. This experience must include performing quality control procedures on instruments used to determine the activity of dosages, and performing checks for proper operation of survey meters. (Core)
- 4.11.e.3. This experience must include calculating, measuring, and safely preparing patient or human research subject dosages. (Core)
- 4.11.e.4. This experience must include using administrative controls to prevent a medical event involving the use of unsealed byproduct material. (Core)
- 4.11.e.5. This experience must include using procedures to safely contain spilled radioactive material and using proper decontamination procedures. (Core)
- 4.11.e.6. This experience must include administering dosages of radioactive drugs to patients or human research subjects. (Core)
- 4.11.f. Residents entering the program at any level must participate, with appropriate supervision, in the performance of nuclear medicine imaging and non-imaging procedures to include instrumentation quality control. (Core)
- 4.11.g. Residents entering the program at any level must participate in basic radiation safety and survey procedures. (Core)
- 4.11.h. Residents entering the program at any level must maintain a Resident Learning Portfolio, which must be reviewed with the program director as part of the semiannual evaluation, and must include: (Core)
 - 4.11.h.1. Patient Care
Documentation, in the ACGME Case Log System, of participation in the following required nuclear medicine procedures:

- 4.11.h.1.a. a minimum of 35 therapeutic drug administrations, including the minimums in each therapy type as outlined below, excluding Y-90 microspheres; (Core)

Specialty-Specific Background and Intent: The NRC considers Y-90 microsphere ablation of liver tumors to be a form of manual brachytherapy, which is regulated under 10 CFR 35.1000, whereas other parenteral radiopharmaceuticals are considered to be drugs, regulated under 10 CFR. 35.396.

It is preferred that the resident experience include a variety of radioisotopes. The Review Committee recognizes that Y-90 microsphere therapy is an important part of this experience and encourages residents to participate when they have the opportunity, in addition to the minimum of 35 required therapeutic drug administrations.

- 4.11.h.1.b. a minimum of 10 cases of oral administration of sodium iodide I-131, for which a written directive is required; (Core)
- 4.11.h.1.b.1. At least five of these cases must be for malignant disease, and at least five cases must be for benign disease. (Core)
- 4.11.h.1.b.2. At least three of these cases must be less than or equal to 1.22 gigabecquerels (33 millicuries) of sodium iodide I-131, and at least three cases must be greater than 1.22 gigabecquerels (33 millicuries) of sodium iodide I-131. (Core)
- 4.11.h.1.c. a minimum of 10 cases of parenteral administration of any alpha emitter, beta emitter, or a photon-emitting radionuclide with a photon energy less than 150 keV, for which a written directive is required, and/or parenteral administration of any other radionuclide, for which a written directive is required, and at least two different US Food and Drug Administration-approved radiopharmaceuticals; and, (Core)
- 4.11.h.1.d. a minimum of 100 cardiovascular pharmacologic and/or exercise stress studies. (Core)
- 4.11.h.2. documentation, in the ACGME Case Log System, of participation in therapeutic procedures, including date, diagnosis, and administered activity of each therapy; (Core)
- 4.11.h.3. documentation, in the ACGME Case Log System, of participation in stress myocardial studies, including date, radiopharmaceutical, and type of stress (exercise or pharmacologic); (Core)
- 4.11.h.4. documentation, in the ACGME Case Log System, of the completion of a minimum of 100 pediatric nuclear medicine procedures over the course of the educational program; and, (Core)
- 4.11.h.5. documentation of basic cardiac life support (BCLS) and advanced cardiac life support (ACLS) certification. (Core)

- 4.11.h.6. Medical Knowledge
documentation of conference presentations, external courses and meetings attended, and self-assessment modules completed; (Core)
- 4.11.h.7. documentation of compliance with regulatory-based training requirements; and, (Core)
- 4.11.h.8. documentation of performance on the annual in-training examination. (Core)
- 4.11.h.9. Practice-Based Learning and Improvement
completion of an annual resident self-assessment and learning plan. (Core)
- 4.11.h.9.a. Residents' evaluations of their personal practice must be part of individual learning plans in the Resident Learning Portfolios (as described in 4.11.h.). (Core)
- 4.11.h.10. Interpersonal and Communication Skills
formal faculty member evaluation of report quality. (Core)
- 4.11.h.11. Professionalism
documentation of compliance with institutional and departmental policies. (Core)
- 4.11.h.12. Systems-Based Practice
documentation of participation in identifying and implementing potential systems solutions. (Core)
- 4.11.h.13. Scholarly Activity
documentation of scholarly activity, such as publications or announcement of presentations; and, (Core)
- 4.11.h.14. any additional materials requested by the program director. (Core)
- 4.11.i. Residents entering the program at the NM1 level must participate in a minimum of six months of CT experience. (Core)
- 4.11.i.1. A minimum of four months must be obtained on a diagnostic radiology CT service. (Core)

Specialty-Specific Background and Intent: The interpretation of hybrid imaging, including SPECT/CT and PET/CT, and correlation of nuclear medicine studies with other imaging studies is an important part of the practice of nuclear medicine. Accordingly, the Review Committee recommends that residents participating in these studies participate in the recognition, classification, and communication of significant abnormalities in diagnostic CT studies, including the creation of written reports. The Review Committee also recommends that this experience include a variety of CT studies, for example, studies of the head and neck, thorax, abdomen, and pelvis. The Review Committee recommends a similar experience in MRI, which may be helpful for trainees.

- 4.11.i.2. The remaining two months may be continued on the diagnostic CT service and/or may be combined with a rotation that includes PET/CT or SPECT/CT. (Core)
- 4.11.i.3. This experience must be supervised by qualified faculty members. (Core)
- 4.11.j. Residents entering the program at the NM1 level must have no more than six total months of elective rotations and/or dedicated research time during the program. (Core)
- 4.11.k. Residents entering the program at the NM2 level must participate in a minimum of six months of CT experience. (Core)
- 4.11.k.1. A minimum of four months must be obtained on a diagnostic radiology CT service. (Core)
- 4.11.k.2. The remaining two months may be continued on the diagnostic radiology CT service and/or may be combined with a rotation that includes PET/CT or SPECT/CT. (Core)
- 4.11.k.3. This experience must be supervised by qualified faculty members. (Core)
- 4.11.l. Residents entering the program at the NM2 level must have no more than four total months of elective rotations and/or dedicated research time during the program. (Core)
- 4.11.m. Residents entering the program at the NM3 level must have no more than two total months of elective rotations and/or dedicated research time during the program. (Core)
- 4.11.m.1. Residents who have satisfactorily completed a diagnostic radiology program accredited by the ACGME, or a diagnostic radiology program located in Canada and accredited by the RCPSC are exempt from the six-month CT experience requirement. (Core)

4.12. Pain Management

The program must provide instruction and experience in pain management if applicable for the specialty, including recognition of the signs of substance use disorder. (Core)

Scholarship

Medicine is both an art and a science. The physician is a humanistic scientist who cares for patients. This requires the ability to think critically, evaluate the literature, appropriately assimilate new knowledge, and practice lifelong learning. The program and faculty must create an environment that fosters the acquisition of such skills through resident participation in scholarly activities. Scholarly activities may include discovery, integration, application, and teaching.

The ACGME recognizes the variety of residencies and anticipates that programs prepare physicians for a variety of roles, including clinicians, scientists, and educators. It is

expected that the program's scholarship will reflect its mission(s) and aims, and the needs of the community it serves. For example, some programs may concentrate their scholarly activity on quality improvement, population health, and/or teaching, while other programs might choose to utilize more classic forms of biomedical research as the focus for scholarship.

4.13. Program Responsibilities

The program must demonstrate evidence of scholarly activities consistent with its mission(s) and aims. (Core)

4.13.a. The program, in partnership with its Sponsoring Institution, must allocate adequate resources to facilitate resident and faculty involvement in scholarly activities. (Core)

4.13.b. The program must advance residents' knowledge and practice of the scholarly approach to evidence-based patient care. (Core)

4.14. Faculty Scholarly Activity

Among their scholarly activity, programs must demonstrate accomplishments in at least three of the following domains: (Core)

- Research in basic science, education, translational science, patient care, or population health
- Peer-reviewed grants
- Quality improvement and/or patient safety initiatives
- Systematic reviews, meta-analyses, review articles, chapters in medical textbooks, or case reports
- Creation of curricula, evaluation tools, didactic educational activities, or electronic educational materials
- Contribution to professional committees, educational organizations, or editorial boards
- Innovations in education

4.14.a. The program must demonstrate dissemination of scholarly activity within and external to the program by the following methods:

- faculty participation in grand rounds, posters, workshops, quality improvement presentations, podium presentations, grant leadership, non-peer-reviewed print/electronic resources, articles or publications, book chapters, textbooks, webinars, service on professional committees, or serving as a journal reviewer, journal editorial board member, or editor; (Outcome)
- peer-reviewed publication. (Outcome)

Background and Intent: For the purposes of education, metrics of scholarly activity represent one of the surrogates for the program's effectiveness in the creation of an environment of inquiry that advances the residents' scholarly approach to patient care. The Review Committee will evaluate the dissemination of scholarship for the program as a whole, not for individual faculty members, for a five-year interval, for both core and non-core faculty members, with the goal of assessing the effectiveness of the creation of such an environment. The ACGME recognizes that there may be differences in scholarship requirements between different specialties and between residencies and fellowships in the same specialty.

4.15. Resident Scholarly Activity

Residents must participate in scholarship. (Core)

- 4.15.a. All residents must participate in a scholarly project under faculty member supervision. (Core)
 - 4.15.a.1. The scholarly project should take the form of laboratory research, clinical research, or the analysis of disease processes, imaging techniques, or practice management issues. (Core)
 - 4.15.a.2. The results must be published or presented at institutional, local, regional, or national meetings, and included in the Resident Learning Portfolio. (Outcome)
 - 4.15.a.3. The program must specify how each project will be evaluated. (Core)

Section 5: Evaluation

5.1. Resident Evaluation: Feedback and Evaluation

Faculty members must directly observe, evaluate, and frequently provide feedback on resident performance during each rotation or similar educational assignment. (Core)

Background and Intent: Feedback is ongoing information provided regarding aspects of one's performance, knowledge, or understanding. The faculty empower residents to provide much of that feedback themselves in a spirit of continuous learning and self-reflection. Feedback from faculty members in the context of routine clinical care should be frequent, and need not always be formally documented.

Formative and summative evaluation have distinct definitions. Formative evaluation is *monitoring resident learning* and providing ongoing feedback that can be used by residents to improve their learning in the context of provision of patient care or other educational opportunities. More specifically, formative evaluations help:

- residents identify their strengths and weaknesses and target areas that need work

- program directors and faculty members recognize where residents are struggling and address problems immediately

Summative evaluation is *evaluating a resident's learning* by comparing the residents against the goals and objectives of the rotation and program, respectively. Summative evaluation is utilized to make decisions about promotion to the next level of training, or program completion.

End-of-rotation and end-of-year evaluations have both summative and formative components. Information from a summative evaluation can be used formatively when residents or faculty members use it to guide their efforts and activities in subsequent rotations and to successfully complete the residency program.

Feedback, formative evaluation, and summative evaluation compare intentions with accomplishments, enabling the transformation of a neophyte physician to one with growing expertise.

Background and Intent: Faculty members should provide feedback frequently throughout the course of each rotation. Residents require feedback from faculty members to reinforce well-performed duties and tasks, as well as to correct deficiencies. This feedback will allow for the development of the learner as they strive to achieve the Milestones. More frequent feedback is strongly encouraged for residents who have deficiencies that may result in a poor final rotation evaluation.

- 5.1.a. Evaluation must be documented at the completion of the assignment. (Core)
- 5.1.a.1. For block rotations of greater than three months in duration, evaluation must be documented at least every three months. (Core)
- 5.1.a.2. Longitudinal experiences, such as continuity clinic in the context of other clinical responsibilities, must be evaluated at least every three months and at completion. (Core)
- 5.1.b. The program must provide an objective performance evaluation based on the Competencies and the specialty-specific Milestones. (Core)
- 5.1.b.1. The program must use multiple evaluators (e.g., faculty members, peers, patients, self, and other professional staff members). (Core)
- 5.1.b.2. The program must provide that information to the Clinical Competency Committee for its synthesis of progressive resident performance and improvement toward unsupervised practice. (Core)
- 5.1.b.3. The program must ensure that all residents achieve the required competencies and outcomes by completion of the program. (Core)

- 5.1.c.** The program director or their designee, with input from the Clinical Competency Committee, must meet with and review with each resident their documented semi-annual evaluation of performance, including progress along the specialty-specific Milestones. (Core)
- 5.1.d.** The program director or their designee, with input from the Clinical Competency Committee, must assist residents in developing individualized learning plans to capitalize on their strengths and identify areas for growth. (Core)
- 5.1.e.** The program director or their designee, with input from the Clinical Competency Committee, must develop plans for residents failing to progress, following institutional policies and procedures. (Core)

Background and Intent: Learning is an active process that requires effort from the teacher and the learner. Faculty members evaluate a resident's performance at least at the end of each rotation. The program director or their designee will review those evaluations, including their progress on the Milestones, at a minimum of every six months. Residents should be encouraged to reflect upon the evaluation, using the information to reinforce well-performed tasks or knowledge or to modify deficiencies in knowledge or practice. Working together with the faculty members, residents should develop an individualized learning plan.

Residents who are experiencing difficulties with achieving progress along the Milestones may require intervention to address specific deficiencies. Such intervention, documented in an individual remediation plan developed by the program director or a faculty mentor and the resident, will take a variety of forms based on the specific learning needs of the resident. However, the ACGME recognizes that there are situations which require more significant intervention that may alter the time course of resident progression. To ensure due process, it is essential that the program director follow institutional policies and procedures.

- 5.1.f.** At least annually, there must be a summative evaluation of each resident that includes their readiness to progress to the next year of the program, if applicable. (Core)
- 5.1.g.** The evaluations of a resident's performance must be accessible for review by the resident. (Core)
- 5.1.h.** Residents must participate in an annual In-Training Examination. (Core)
- 5.1.h.1.** The results of this examination must be used only to identify deficiencies in knowledge and to assist in developing a remediation plan. (Core)
- 5.2. Resident Evaluation: Final Evaluation**
The program director must provide a final evaluation for each resident upon completion of the program. (Core)

- 5.2.a. The specialty-specific Milestones, and when applicable the specialty-specific Case Logs, must be used as tools to ensure residents are able to engage in autonomous practice upon completion of the program. (Core)
- 5.2.b. The final evaluation must become part of the resident's permanent record maintained by the institution, and must be accessible for review by the resident in accordance with institutional policy. (Core)
- 5.2.c. The final evaluation must verify that the resident has demonstrated the knowledge, skills, and behaviors necessary to enter autonomous practice. (Core)
- 5.2.d. The final evaluation must be shared with the resident upon completion of the program. (Core)
- 5.3. **Clinical Competency Committee**
A Clinical Competency Committee must be appointed by the program director. (Core)
 - 5.3.a. At a minimum, the Clinical Competency Committee must include three members of the program faculty, at least one of whom is a core faculty member. (Core)
 - 5.3.b. Additional members must be faculty members from the same program or other programs, or other health professionals who have extensive contact and experience with the program's residents. (Core)

Background and Intent: The requirements regarding the Clinical Competency Committee do not preclude or limit a program director's participation on the Clinical Competency Committee. The intent is to leave flexibility for each program to decide the best structure for its own circumstances, but a program should consider: its program director's other roles as resident advocate, advisor, and confidante; the impact of the program director's presence on the other Clinical Competency Committee members' discussions and decisions; the size of the program faculty; and other program-relevant factors. The program director has final responsibility for resident evaluation and promotion decisions.

Program faculty may include more than the physician faculty members, such as other physicians and non-physicians who teach and evaluate the program's residents. There may be additional members of the Clinical Competency Committee. Chief residents who have completed core residency programs in their specialty may be members of the Clinical Competency Committee.

- 5.3.c. The Clinical Competency Committee must review all resident evaluations at least semi-annually. (Core)
- 5.3.d. The Clinical Competency Committee must determine each resident's progress on achievement of the specialty-specific Milestones. (Core)

- 5.3.e. The Clinical Competency Committee must meet prior to the residents' semi-annual evaluations and advise the program director regarding each resident's progress. (Core)**

5.4. Faculty Evaluation

The program must have a process to evaluate each faculty member's performance as it relates to the educational program at least annually. (Core)

Background and Intent: The program director is responsible for the educational program and all educators. While the term "faculty" may be applied to physicians within a given institution for other reasons, it is applied to residency program faculty members only through approval by a program director. The development of the faculty improves the education, clinical, and research aspects of a program. Faculty members have a strong commitment to the resident and desire to provide optimal education and work opportunities. Faculty members must be provided feedback on their contribution to the mission of the program. All faculty members who interact with residents desire feedback on their education, clinical care, and research. If a faculty member does not interact with residents, feedback is not required. With regard to the varied operating environments and configurations, the residency program director may need to work with others to determine the effectiveness of the program's faculty performance with regard to their role in the educational program. All teaching faculty members should have their educational efforts evaluated by the residents in a confidential and anonymous manner. Other aspects for the feedback may include research or clinical productivity, review of patient outcomes, or peer review of scholarly activity. The process should reflect the local environment and identify the necessary information. The feedback from the various sources should be summarized and provided to the faculty on an annual basis by a member of the leadership team of the program.

- 5.4.a. This evaluation must include a review of the faculty member's clinical teaching abilities, engagement with the educational program, participation in faculty development related to their skills as an educator, clinical performance, professionalism, and scholarly activities. (Core)**
- 5.4.b. This evaluation must include written, anonymous, and confidential evaluations by the residents. (Core)**
- 5.4.c. Faculty members must receive feedback on their evaluations at least annually. (Core)**
- 5.4.d. Results of the faculty educational evaluations should be incorporated into program-wide faculty development plans. (Core)**

Background and Intent: The quality of the faculty's teaching and clinical care is a determinant of the quality of the program and the quality of the residents' future clinical care. Therefore, the program has the responsibility to evaluate and improve the program faculty members' teaching, scholarship, professionalism, and quality care. This section

mandates annual review of the program's faculty members for this purpose, and can be used as input into the Annual Program Evaluation.

5.5. Program Evaluation and Improvement

The program director must appoint the Program Evaluation Committee to conduct and document the Annual Program Evaluation as part of the program's continuous improvement process. (Core)

- 5.5.a. The Program Evaluation Committee must be composed of at least two program faculty members, at least one of whom is a core faculty member, and at least one resident. (Core)**
- 5.5.b. Program Evaluation Committee responsibilities must include review of the program's self-determined goals and progress toward meeting them. (Core)**
- 5.5.c. Program Evaluation Committee responsibilities must include guiding ongoing program improvement, including development of new goals, based upon outcomes. (Core)**
- 5.5.d. Program Evaluation Committee responsibilities must include review of the current operating environment to identify strengths, challenges, opportunities, and threats as related to the program's mission and aims. (Core)**

Background and Intent: To achieve its mission and educate and train quality physicians, a program must evaluate its performance and plan for improvement in the Annual Program Evaluation. Performance of residents and faculty members is a reflection of program quality, and can use metrics that reflect the goals that a program has set for itself. The Program Evaluation Committee utilizes outcome parameters and other data to assess the program's progress toward achievement of its goals and aims. The Program Evaluation Committee advises the program director through program oversight.

- 5.5.e. The Program Evaluation Committee should consider the outcomes from prior Annual Program Evaluation(s), aggregate resident and faculty written evaluations of the program, and other relevant data in its assessment of the program. (Core)**

Background and Intent: Other data to be considered for assessment include:

- Curriculum**
- ACGME letters of notification, including citations, Areas for Improvement, and comments**
- Quality and safety of patient care**
- Aggregate resident and faculty well-being; recruitment and retention; engagement in quality improvement and patient safety; and scholarly activity**

- ACGME Resident and Faculty Survey results
- Aggregate resident Milestones evaluations, and achievement on in-training examinations (where applicable), board pass and certification rates, and graduate performance.
- Aggregate faculty evaluation and professional development

5.5.f. The Program Evaluation Committee must evaluate the program's mission and aims, strengths, areas for improvement, and threats. *(Core)*

5.5.g. The Annual Program Evaluation, including the action plan, must be distributed to and discussed with the residents and the members of the teaching faculty, and be submitted to the DIO. *(Core)*

5.5.h. The program must complete a Self-Study and submit it to the DIO. *(Core)*

Board Certification

One goal of ACGME-accredited education is to educate physicians who seek and achieve board certification. One measure of the effectiveness of the educational program is the ultimate pass rate.

The program director should encourage all eligible program graduates to take the certifying examination offered by the applicable American Board of Medical Specialties (ABMS) member board or American Osteopathic Association (AOA) certifying board.

5.6. Board Certification

For specialties in which the ABMS member board and/or AOA certifying board offer(s) an annual written exam, in the preceding three years, the program's aggregate pass rate of those taking the examination for the first time must be higher than the bottom fifth percentile of programs in that specialty. *(Outcome)*

5.6.a. For specialties in which the ABMS member board and/or AOA certifying board offer(s) a biennial written exam, in the preceding six years, the program's aggregate pass rate of those taking the examination for the first time must be higher than the bottom fifth percentile of programs in that specialty. *(Outcome)*

5.6.b. For specialties in which the ABMS member board and/or AOA certifying board offer(s) an annual oral exam, in the preceding three years, the program's aggregate pass rate of those taking the examination for the first time must be higher than the bottom fifth percentile of programs in that specialty. *(Outcome)*

5.6.c. For specialties in which the ABMS member board and/or AOA certifying board offer(s) a biennial oral exam, in the preceding six years, the program's aggregate pass rate of those taking the examination for the first time must be higher than the bottom fifth percentile of programs in that specialty. *(Outcome)*

- 5.6.d. For each of the exams referenced in 5.6.a.-c., any program whose graduates over the time period specified in the requirement have achieved an 80 percent pass rate will have met this requirement, no matter the percentile rank of the program for pass rate in that specialty. (Outcome)

Background and Intent: Setting a single standard for pass rate that works across specialties is not supportable based on the heterogeneity of the psychometrics of different examinations. By using a percentile rank, the performance of the lower five percent (fifth percentile) of programs can be identified and set on a path to curricular and test preparation reform.

There are specialties where there is a very high board pass rate that could leave successful programs in the bottom five percent (fifth percentile) despite admirable performance. These high-performing programs should not be cited, and 5.6.d. is designed to address this.

- 5.6.e. Programs must report, in ADS, board certification status annually for the cohort of board-eligible residents that graduated seven years earlier. (Core)

Background and Intent: It is essential that residency programs demonstrate knowledge and skill transfer to their residents. One measure of that is the qualifying or initial certification exam pass rate. Another important parameter of the success of the program is the ultimate board certification rate of its graduates. Graduates are eligible for up to seven years from residency graduation for initial certification. The ACGME will calculate a rolling three-year average of the ultimate board certification rate at seven years post-graduation, and the Review Committees will monitor it.

The Review Committees will track the rolling seven-year certification rate as an indicator of program quality. Programs are encouraged to monitor their graduates' performance on board certification examinations.

In the future, the ACGME may establish parameters related to ultimate board certification rates.

Section 6: The Learning and Working Environment

The Learning and Working Environment

Residency education must occur in the context of a learning and working environment that emphasizes the following principles:

- *Excellence in the safety and quality of care rendered to patients by residents today*
- *Excellence in the safety and quality of care rendered to patients by today's residents in their future practice*

- *Excellence in professionalism*
- *Appreciation for the privilege of caring for patients*
- *Commitment to the well-being of the students, residents, faculty members, and all members of the health care team*

Culture of Safety

A culture of safety requires continuous identification of vulnerabilities and a willingness to transparently deal with them. An effective organization has formal mechanisms to assess the knowledge, skills, and attitudes of its personnel toward safety in order to identify areas for improvement.

- 6.1. The program, its faculty, residents, and fellows must actively participate in patient safety systems and contribute to a culture of safety. (Core)

Patient Safety Events

Reporting, investigation, and follow-up of safety events, near misses, and unsafe conditions are pivotal mechanisms for improving patient safety, and are essential for the success of any patient safety program. Feedback and experiential learning are essential to developing true competence in the ability to identify causes and institute sustainable systems-based changes to ameliorate patient safety vulnerabilities.

- 6.2. Residents, fellows, faculty members, and other clinical staff members must know their responsibilities in reporting patient safety events and unsafe conditions at the clinical site, including how to report such events. (Core)
- 6.2.a. Residents, fellows, faculty members, and other clinical staff members must be provided with summary information of their institution's patient safety reports. (Core)
- 6.3. Residents must participate as team members in real and/or simulated interprofessional clinical patient safety and quality improvement activities, such as root cause analyses or other activities that include analysis, as well as formulation and implementation of actions. (Core)

Quality Metrics

Access to data is essential to prioritizing activities for care improvement and evaluating success of improvement efforts.

- 6.4. Residents and faculty members must receive data on quality metrics and benchmarks related to their patient populations. (Core)

Supervision and Accountability

Although the attending physician is ultimately responsible for the care of the patient, every physician shares in the responsibility and accountability for their efforts in the provision of care. Effective programs, in partnership with their Sponsoring Institutions, define, widely communicate, and monitor a structured chain of responsibility and accountability as it relates to the supervision of all patient care.

Supervision in the setting of graduate medical education provides safe and effective care to patients; ensures each resident's development of the skills, knowledge, and attitudes required to enter the unsupervised practice of medicine; and establishes a foundation for continued professional growth.

- 6.5. Residents and faculty members must inform each patient of their respective roles in that patient's care when providing direct patient care. This information must be available to residents, faculty members, other members of the health care team, and patients. (Core)

Background and Intent: Each patient will have an identifiable and appropriately credentialed and privileged attending physician (or licensed independent practitioner as specified by the applicable Review Committee) who is responsible and accountable for the patient's care.

- 6.6. The program must demonstrate that the appropriate level of supervision in place for all residents is based on each resident's level of training and ability, as well as patient complexity and acuity. Supervision may be exercised through a variety of methods, as appropriate to the situation. (Core)

Background and Intent: Appropriate supervision is essential for patient safety and high-quality teaching. Supervision is also contextual. There is tremendous variability of resident-patient interactions, training locations, and resident skills and abilities, even at the same level of the educational program. The degree of supervision for a resident is expected to evolve progressively as the resident gains more experience, even with the same patient condition or procedure. The level of supervision for each resident is commensurate with that resident's level of independence in practice; this level of supervision may be enhanced based on factors such as patient safety, complexity, acuity, urgency, risk of serious safety events, or other pertinent variables.

- 6.6.a. Only licensed physicians who are credentialed to perform nuclear medicine procedures may have primary responsibility for the nuclear medicine aspects of patient care. (Core)

Levels of Supervision

To promote appropriate resident supervision while providing for graded authority and responsibility, the program must use the following classification of supervision.

6.7. Direct Supervision

The supervising physician is physically present with the resident during the key portions of the patient interaction.

The supervising physician and/or patient is not physically present with the resident and the supervising physician is concurrently monitoring the patient care through appropriate telecommunication technology.

6.7.a. PGY-1 residents must initially be supervised directly, only as described in the above definition. (Core)

6.7.b. The supervision policy must define when it is acceptable to monitor procedures via telecommunications technology and be consistent with Nuclear Regulatory Commission and/or state radiation safety regulations. (Core)

Indirect Supervision

The supervising physician is not providing physical or concurrent visual or audio supervision but is immediately available to the resident for guidance and is available to provide appropriate direct supervision.

Oversight

The supervising physician is available to provide review of procedures/encounters with feedback provided after care is delivered.

6.8. The program must define when physical presence of a supervising physician is required. (Core)

6.9. The privilege of progressive authority and responsibility, conditional independence, and a supervisory role in patient care delegated to each resident must be assigned by the program director and faculty members. (Core)

6.9.a. The program director must evaluate each resident's abilities based on specific criteria, guided by the Milestones. (Core)

6.9.b. Faculty members functioning as supervising physicians must delegate portions of care to residents based on the needs of the patient and the skills of each resident. (Core)

6.9.c. Senior residents or fellows should serve in a supervisory role to junior residents in recognition of their progress toward independence, based on the needs of each patient and the skills of the individual resident or fellow. (Detail)

6.10. Programs must set guidelines for circumstances and events in which residents must communicate with the supervising faculty member(s). (Core)

6.10.a. Each resident must know the limits of their scope of authority, and the circumstances under which the resident is permitted to act with conditional independence. (Outcome)

Background and Intent: The ACGME Glossary of Terms defines conditional independence as: Graded, progressive responsibility for patient care with defined oversight.

6.11. Faculty supervision assignments must be of sufficient duration to assess the knowledge and skills of each resident and to delegate to the resident the appropriate level of patient care authority and responsibility. (Core)

6.12. Professionalism

Programs, in partnership with their Sponsoring Institutions, must educate residents and faculty members concerning the professional and ethical responsibilities of physicians, including but not limited to their obligation to be appropriately rested and fit to provide the care required by their patients. (Core)

Background and Intent: This requirement emphasizes the professional responsibility of residents and faculty members to arrive for work adequately rested and ready to care for patients. It is also the responsibility of residents, faculty members, and other members of the care team to be observant, to intervene, and/or to escalate their concern about resident and faculty member fitness for work, depending on the situation, and in accordance with institutional policies. This includes recognition of impairment, including from illness, fatigue, and substance use, in themselves, their peers, and other members of the health care team, and the recognition that under certain circumstances, the best interests of the patient may be served by transitioning that patient's care to another qualified and rested practitioner.

6.12.a. The learning objectives of the program must be accomplished without excessive reliance on residents to fulfill non-physician obligations. (Core)

Background and Intent: Routine reliance on residents to fulfill non-physician obligations increases work compression for residents and does not provide an optimal educational experience. Non-physician obligations are those duties which in most institutions are performed by nursing and allied health professionals, transport services, or clerical staff. Examples of such obligations include transport of patients from the wards or units for procedures elsewhere in the hospital; routine blood drawing for laboratory tests; routine monitoring of patients when off the ward; and clerical duties, such as scheduling. While it is understood that residents may be expected to do any of these things on occasion when the need arises, these activities should not be performed by residents routinely and must be kept to a minimum to optimize resident education.

6.12.b. The learning objectives of the program must ensure manageable patient care responsibilities. (Core)

Background and Intent: The Common Program Requirements do not define "manageable patient care responsibilities" as this is variable by specialty and PGY level. Review Committees will provide further detail regarding patient care responsibilities in the applicable specialty-specific Program Requirements and accompanying FAQs. However, all programs, regardless of specialty, should carefully assess how the assignment of patient care responsibilities can affect work compression, especially at the PGY-1 level.

6.12.c. The learning objectives of the program must include efforts to enhance the meaning that each resident finds in the experience of being a physician, including protecting time with patients, providing administrative

support, promoting progressive independence and flexibility, and enhancing professional relationships. (Core)

- 6.12.d. The program director, in partnership with the Sponsoring Institution, must provide a culture of professionalism that supports patient safety and personal responsibility. (Core)

Background and Intent: The accurate reporting of clinical and educational work hours, patient outcomes, and clinical experience data are the responsibility of the program leadership, residents, and faculty.

- 6.12.e. Residents and faculty members must demonstrate an understanding of their personal role in the safety and welfare of patients entrusted to their care, including the ability to report unsafe conditions and safety events. (Core)
- 6.12.f. Programs, in partnership with their Sponsoring Institutions, must provide a professional, respectful, and civil environment that is psychologically safe and that is free from discrimination, sexual and other forms of harassment, mistreatment, abuse, or coercion of students, residents, faculty, and staff. (Core)

Background and Intent: Psychological safety is defined as an environment of trust and respect that allows individuals to feel able to ask for help, admit mistakes, raise concerns, suggest ideas, and challenge ways of working and the ideas of others on the team, including the ideas of those in authority, without fear of humiliation, and the knowledge that mistakes will be handled justly and fairly.

The ACGME is unable to adjudicate disputes between individuals, including residents, faculty members, and staff members. However, information that suggests a pattern of behavior that violates the requirement above will trigger a careful review and, if deemed appropriate, action by the Review Committee and/or ACGME, in accordance with ACGME Policies and Procedures.

- 6.12.g. Programs, in partnership with their Sponsoring Institutions, should have a process for education of residents and faculty regarding unprofessional behavior and a confidential process for reporting, investigating, and addressing such concerns. (Core)

Well-Being

Psychological, emotional, and physical well-being are critical in the development of the competent, caring, and resilient physician and require proactive attention to life inside and outside of medicine. Well-being requires that physicians retain the joy in medicine while managing their own real-life stresses. Self-care and responsibility to support other members of the health care team are important components of professionalism; they are also skills that must be modeled, learned, and nurtured in the context of other aspects of residency training.

Residents and faculty members are at risk for burnout and depression. Programs, in partnership with their Sponsoring Institutions, have the same responsibility to address well-being as other aspects of resident competence. Physicians and all members of the health care team share responsibility for the well-being of each other. A positive culture in a clinical learning environment models constructive behaviors, and prepares residents with the skills and attitudes needed to thrive throughout their careers.

6.13. The responsibility of the program, in partnership with the Sponsoring Institution, must include:

6.13.a. attention to scheduling, work intensity, and work compression that impacts resident well-being; (Core)

6.13.b. evaluating workplace safety data and addressing the safety of residents and faculty members; (Core)

Background and Intent: This requirement emphasizes the responsibility shared by the Sponsoring Institution and its programs to gather information and utilize systems that monitor and enhance resident and faculty member safety, including physical safety. Issues to be addressed include, but are not limited to, monitoring of workplace injuries, physical or emotional violence, vehicle collisions, and emotional well-being after safety events.

6.13.c. policies and programs that encourage optimal resident and faculty member well-being; and, (Core)

Background and Intent: Well-being includes having time away from work to engage with family and friends, as well as to attend to personal needs and to one's own health, including adequate rest, healthy diet, and regular exercise. The intent of this requirement is to ensure that residents have the opportunity to access medical and dental care, including mental health care, at times that are appropriate to their individual circumstances. Residents must be provided with time away from the program as needed to access care, including appointments scheduled during their working hours.

6.13.c.1. Residents must be given the opportunity to attend medical, mental health, and dental care appointments, including those scheduled during their working hours. (Core)

6.13.d. education of residents and faculty members in:

6.13.d.1. identification of the symptoms of burnout, depression, and substance use disorders, suicidal ideation, or potential for violence, including means to assist those who experience these conditions; (Core)

6.13.d.2. recognition of these symptoms in themselves and how to seek appropriate care; and, (Core)

6.13.d.3. access to appropriate tools for self-screening. (Core)

Background and Intent: Programs and Sponsoring Institutions are encouraged to review materials to create systems for identification of burnout, depression, and substance use disorders. Materials and more information are available in Learn at ACGME (<https://dl.acgme.org/pages/well-being-tools-resources>).

Individuals experiencing burnout, depression, a substance use disorder, and/or suicidal ideation are often reluctant to reach out for help due to the stigma associated with these conditions and may be concerned that seeking help may have a negative impact on their career. Recognizing that physicians are at increased risk in these areas, it is essential that residents and faculty members are able to report their concerns when another resident or faculty member displays signs of any of these conditions, so that the program director or other designated personnel, such as the department chair, may assess the situation and intervene as necessary to facilitate access to appropriate care. Residents and faculty members must know which personnel, in addition to the program director, have been designated with this responsibility; those personnel and the program director should be familiar with the institution's impaired physician policy and any employee health, employee assistance, and/or wellness/well-being programs within the institution. In cases of physician impairment, the program director or designated personnel should follow the policies of their institution for reporting.

- 6.13.e. providing access to confidential, affordable mental health assessment, counseling, and treatment, including access to urgent and emergent care 24 hours a day, seven days a week. (Core)

Background and Intent: The intent of this requirement is to ensure that residents have immediate access at all times to a mental health professional (psychiatrist, psychologist, Licensed Clinical Social Worker, Primary Mental Health Nurse Practitioner, or Licensed Professional Counselor) for urgent or emergent mental health issues. In-person, telemedicine, or telephonic means may be utilized to satisfy this requirement. Care in the Emergency Department may be necessary in some cases, but not as the primary or sole means to meet the requirement.

The reference to affordable counseling is intended to require that financial cost not be a barrier to obtaining care.

- 6.14. There are circumstances in which residents may be unable to attend work, including but not limited to fatigue, illness, family emergencies, and medical, parental, or caregiver leave. Each program must allow an appropriate length of absence for residents unable to perform their patient care responsibilities. (Core)
- 6.14.a. The program must have policies and procedures in place to ensure coverage of patient care and ensure continuity of patient care. (Core)
- 6.14.b. These policies must be implemented without fear of negative consequences for the resident who is or was unable to provide the clinical work. (Core)

Background and Intent: Residents may need to extend their length of training depending on length of absence and specialty board eligibility requirements. Teammates should assist colleagues in need and fairly reintegrate them upon return.

6.15. Fatigue Mitigation

Programs must educate all residents and faculty members in recognition of the signs of fatigue and sleep deprivation, alertness management, and fatigue mitigation processes. ^(Detail)

Background and Intent: Providing medical care to patients is physically and mentally demanding. Night shifts, even for those who have had enough rest, cause fatigue. Experiencing fatigue in a supervised environment during training prepares residents for managing fatigue in practice. It is expected that programs adopt fatigue mitigation processes and ensure that there are no negative consequences and/or stigma for using fatigue mitigation strategies.

Strategies that may be used include but are not limited to strategic napping; the judicious use of caffeine; availability of other caregivers; time management to maximize sleep off-duty; learning to recognize the signs of fatigue, and self-monitoring performance and/or asking others to monitor performance; remaining active to promote alertness; maintaining a healthy diet; using relaxation techniques to fall asleep; maintaining a consistent sleep routine; exercising regularly; increasing sleep time before and after call; and ensuring sufficient sleep recovery periods.

6.16. The program, in partnership with its Sponsoring Institution, must ensure adequate sleep facilities and safe transportation options for residents who may be too fatigued to safely return home. ^(Core)

6.17. Clinical Responsibilities

The clinical responsibilities for each resident must be based on PGY level, patient safety, resident ability, severity and complexity of patient illness/condition, and available support services. ^(Core)

Background and Intent: The changing clinical care environment of medicine has meant that work compression due to high complexity has increased stress on residents. Faculty members and program directors need to make sure residents function in an environment that has safe patient care and a sense of resident well-being. It is an essential responsibility of the program director to monitor resident workload. Workload should be distributed among the resident team and interdisciplinary teams to minimize work compression.

6.17.a. Optimal clinical workload must maximize the resident learning experience without compromising patient care. ^(Core)

- 6.17.b. The number and distribution of cases should vary with the responsibility appropriate to an individual resident's demonstrated competence over the course of his or her education. (Core)
- 6.17.c. Program directors must determine minimum and maximum patient loads by including faculty member and resident input into an assessment of the learning environment. (Core)
- 6.17.d. Insufficient patient experiences and excessive patient loads must not jeopardize the quality of resident education. (Core)

6.18. Teamwork

Residents must care for patients in an environment that maximizes communication and promotes safe, interprofessional, team-based care in the specialty and larger health system. (Core)

Background and Intent: Effective programs will have a structure that promotes safe, interprofessional, team-based care. Optimal patient safety occurs in the setting of a coordinated interprofessional learning and working environment.

- 6.18.a. The nuclear medicine patient care team should include ancillary personnel, attending nuclear physicians, nuclear medicine residents, nuclear medicine technologists, and radiation safety personnel, and also may include medical physicists, other imaging specialists, radiopharmacists, and individuals from referring services. (Detail)

6.19. Transitions of Care

Programs must design clinical assignments to optimize transitions in patient care, including their safety, frequency, and structure. (Core)

- 6.19.a. Programs, in partnership with their Sponsoring Institutions, must ensure and monitor effective, structured hand-off processes to facilitate both continuity of care and patient safety. (Core)
- 6.19.b. Programs must ensure that residents are competent in communicating with team members in the hand-off process. (Outcome)

Clinical Experience and Education

Programs, in partnership with their Sponsoring Institutions, must design an effective program structure that is configured to provide residents with educational and clinical experience opportunities, as well as reasonable opportunities for rest and personal activities.

Background and Intent: The terms “clinical experience and education,” “clinical and educational work,” and “clinical and educational work hours” replace the terms “duty hours,” “duty periods,” and “duty.” These terms are used in response to concerns that

the previous use of the term “duty” in reference to number of hours worked may have led some to conclude that residents’ duty to “clock out” on time superseded their duty to their patients.

6.20. Maximum Hours of Clinical and Educational Work per Week

Clinical and educational work hours must be limited to no more than 80 hours per week, averaged over a four-week period, including all in-house clinical and educational activities, clinical work done from home, and all moonlighting. (Core)

Background and Intent: Programs and residents have a shared responsibility to ensure that the 80-hour maximum weekly limit is not exceeded. While the requirement has been written with the intent of allowing residents to remain beyond their scheduled work periods to care for a patient or participate in an educational activity, these additional hours must be accounted for in the allocated 80 hours when averaged over four weeks.

Work from Home

While the requirement specifies that clinical work done from home must be counted toward the 80-hour maximum weekly limit, the expectation remains that scheduling be structured so that residents are able to complete most work on site during scheduled clinical work hours without requiring them to take work home. The requirements acknowledge the changing landscape of medicine, including electronic health records, and the resulting increase in the amount of work residents choose to do from home. The requirement provides flexibility for residents to do this while ensuring that the time spent by residents completing clinical work from home is accomplished within the 80-hour weekly maximum. Types of work from home that must be counted include using an electronic health record and taking calls from home. Reading done in preparation for the following day’s cases, studying, and research done from home do not count toward the 80 hours. Resident decisions to leave the hospital before their clinical work has been completed and to finish that work later from home should be made in consultation with the resident’s supervisor. In such circumstances, residents should be mindful of their professional responsibility to complete work in a timely manner and to maintain patient confidentiality.

Residents are to track the time they spend on clinical work from home and to report that time to the program. Decisions regarding whether to report infrequent phone calls of very short duration will be left to the individual resident. Programs will need to factor in time residents are spending on clinical work at home when schedules are developed to ensure that residents are not working in excess of 80 hours per week, averaged over four weeks. There is no requirement that programs assume responsibility for documenting this time. Rather, the program’s responsibility is ensuring that residents report their time from home and that schedules are structured to ensure that residents are not working in excess of 80 hours per week, averaged over four weeks.

6.21. Mandatory Time Free of Clinical Work and Education

Residents should have eight hours off between scheduled clinical work and education periods. (Detail)

Background and Intent: There may be circumstances when residents choose to stay to care for their patients or return to the hospital with fewer than eight hours free of clinical experience and education. This occurs within the context of the 80-hour and the one-day-off-in-seven requirements. While it is expected that resident schedules will be structured to ensure that residents are provided with a minimum of eight hours off between scheduled work periods, it is recognized that residents may choose to remain beyond their scheduled time, or return to the clinical site during this time-off period, to care for a patient. The requirement preserves the flexibility for residents to make those choices. It is also noted that the 80-hour weekly limit (averaged over four weeks) is a deterrent for scheduling fewer than eight hours off between clinical and education work periods, as it would be difficult for a program to design a schedule that provides fewer than eight hours off without violating the 80-hour rule.

- 6.21.a. Residents must have at least 14 hours free of clinical work and education after 24 hours of in-house call. (Core)**

Background and Intent: Residents have a responsibility to return to work rested, and thus are expected to use this time away from work to get adequate rest. In support of this goal, residents are encouraged to prioritize sleep over other discretionary activities.

- 6.21.b. Residents must be scheduled for a minimum of one day in seven free of clinical work and required education (when averaged over four weeks). At-home call cannot be assigned on these free days. (Core)**

Background and Intent: The requirement provides flexibility for programs to distribute days off in a manner that meets program and resident needs. It is strongly recommended that residents' preference regarding how their days off are distributed be considered as schedules are developed. It is desirable that days off be distributed throughout the month, but some residents may prefer to group their days off to have a "golden weekend," meaning a consecutive Saturday and Sunday free from work. The requirement for one free day in seven should not be interpreted as precluding a golden weekend. Where feasible, schedules may be designed to provide residents with a weekend, or two consecutive days, free of work. The applicable Review Committee will evaluate the number of consecutive days of work and determine whether they meet educational objectives. Programs are encouraged to distribute days off in a fashion that optimizes resident well-being, and educational and personal goals. It is noted that a day off is defined in the ACGME Glossary of Terms as "one (1) continuous 24-hour period free from all administrative, clinical, and educational activities."

- 6.22. Maximum Clinical Work and Education Period Length**
Clinical and educational work periods for residents must not exceed 24 hours of continuous scheduled clinical assignments. (Core)
- 6.22.a. Up to four hours of additional time may be used for activities related to patient safety, such as providing effective transitions of care, and/or resident**

education. Additional patient care responsibilities must not be assigned to a resident during this time. ^(Core)

Background and Intent: The additional time referenced in 6.22.a. should not be used for the care of new patients. It is essential that the resident continue to function as a member of the team in an environment where other members of the team can assess resident fatigue, and that supervision for post-call residents is provided. This 24 hours and up to an additional four hours must occur within the context of 80-hour weekly limit, averaged over four weeks.

6.23. Clinical and Educational Work Hour Exceptions

In rare circumstances, after handing off all other responsibilities, a resident, on their own initiative, may elect to remain or return to the clinical site in the following circumstances: to continue to provide care to a single severely ill or unstable patient; to give humanistic attention to the needs of a patient or patient's family; or to attend unique educational events. ^(Detail)

6.23.a. These additional hours of care or education must be counted toward the 80-hour weekly limit. ^(Detail)

Background and Intent: This requirement is intended to provide residents with some control over their schedules by providing the flexibility to voluntarily remain beyond the scheduled responsibilities under the circumstances described above. It is important to note that a resident may remain to attend a conference, or return for a conference later in the day, only if the decision is made voluntarily. Residents must not be required to stay. Programs allowing residents to remain or return beyond the scheduled work and clinical education period must ensure that the decision to remain is initiated by the resident and that residents are not coerced. This additional time must be counted toward the 80-hour maximum weekly limit.

6.24. A Review Committee may grant rotation-specific exceptions for up to 10 percent or a maximum of 88 clinical and educational work hours to individual programs based on a sound educational rationale.

The Review Committee for Nuclear Medicine will not consider requests for exceptions to the 80-hour limit to the residents' work week.

6.25. Moonlighting

Moonlighting must not interfere with the ability of the resident to achieve the goals and objectives of the educational program, and must not interfere with the resident's fitness for work nor compromise patient safety. ^(Core)

6.25.a. Time spent by residents in internal and external moonlighting (as defined in the ACGME Glossary of Terms) must be counted toward the 80-hour maximum weekly limit. ^(Core)

6.25.b. PGY-1 residents are not permitted to moonlight. ^(Core)

Background and Intent: For additional clarification of the expectations related to moonlighting, please refer to the Common Program Requirement FAQs (available at <http://www.acgme.org/What-We-Do/Accreditation/Common-Program-Requirements>).

6.26. In-House Night Float

Night float must occur within the context of the 80-hour and one-day-off-in-seven requirements. (Core)

6.27. Maximum In-House On-Call Frequency

Residents must be scheduled for in-house call no more frequently than every third night (when averaged over a four-week period). (Core)

6.28. At-Home Call

Time spent on patient care activities by residents on at-home call must count toward the 80-hour maximum weekly limit. The frequency of at-home call is not subject to the every-third-night limitation, but must satisfy the requirement for one day in seven free of clinical work and education, when averaged over four weeks. (Core)

6.28.a. At-home call must not be so frequent or taxing as to preclude rest or reasonable personal time for each resident. (Core)

Background and Intent: As noted in 6.20., clinical work done from home when a resident is taking at-home call must count toward the 80-hour maximum weekly limit. This acknowledges the often significant amount of time residents devote to clinical activities when taking at-home call, and ensures that taking at-home call does not result in residents routinely working more than 80 hours per week. At-home call activities that must be counted include responding to phone calls and other forms of communication, as well as documentation, such as entering notes in an electronic health record. Activities such as reading about the next day's case, studying, or research activities do not count toward the 80-hour weekly limit.

In their evaluation of residency/fellowship programs, Review Committees will look at the overall impact of at-home call on resident/fellow rest and personal time.