



NATIONAL INSTITUTE FOR HEALTH SPECIALITIES

NIHS Program Requirements for Specialty Education in Diagnostic Radiology (Emirati Board in Diagnostic Radiology)

The Emirati Board in Diagnostic Radiology is expected to define its specific program aims consistent with the overall mission of its Sponsoring Institution, the needs of the community it serves and that its graduates will serve, and the distinctive capabilities of physicians it intends to graduate. The Program must demonstrate substantial compliance with the Common and specialty-specific Program Requirements.

Where applicable, text in italics describes the underlying philosophy of the requirements in that section. These philosophic statements are not program requirements and are therefore not citable.

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Introduction

Int. A. Preamble

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

Graduate medical education transforms medical graduates into physician scholars who care for the patient, family, and a diverse community; create and integrate new knowledge into practice; and educate future generations of physicians to serve the public.

Graduate medical education has the core tenet of grading 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, and empathy required for independent practice. Graduate medical education develops physicians who focus on excellence in delivery of safe, equitable, affordable, quality care; and 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, other residents and fellows, faculty members and all members of the health care team.

Int. B. Definition of Specialty

Diagnostic radiology encompasses image-based diagnosis and image-guided therapeutic techniques and includes but is not limited to computed tomography (CT); interventional procedures; magnetic resonance imaging (MRI); medical physics; nuclear radiology and molecular imaging; radiography/fluoroscopy; ultrasonography; and radiology quality and safety.

Diagnostic radiology educational content includes, but is not limited to, diagnostic imaging and related image-guided interventions in the following 10 categories: breast; cardiac; gastrointestinal; musculoskeletal; neurologic; pediatric; reproductive and endocrine; thoracic; urinary; and vascular.

Int. C. Length of educational program

Int. C.1: The residency training program in Radiology must be for a period of 5 years.
(Core)

Int. C.2: The Radiology Residency Program must be preceded by 12-months of NIHS approved internship and or alternatively at least 7 months of clinical training consisting of direct in-patient care can be incorporated in the first year of the Radiology training program provided the required minimum number of rotations are not affected as per IV.C.6.g) . (Core)

I. Oversight

I.A. Sponsoring Institution

The Sponsoring Institution is the entity that assumes the ultimate financial and academic responsibility for a program of graduate medical education, consistent with the NIHS 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. (Core)

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.*

I.A.1. The program must be sponsored by one NIHS-accredited Sponsoring Institution. (Core)

I.B. Participating Sites

A participating site is an entity that provides educational experiences or educational assignments/rotations for residents.

I.B.1. The program, with approval of its Sponsoring Institution, must designate a primary clinical site. (Core)

I.B.2. 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)

I.B.2.a) The PLA must:

I.B.2.a)(1) be renewed at least every 5 years; (Core)

I.B.2.a)(2) be approved by the designated institutional official (DIO); (Core)

I.B.2.a)(3) specify the duration and content of the educational experience; ^(Core)

I.B.2.a)(4) state the policies and procedures that will govern resident education during the assignment; ^(Core)

I.B.2.a)(5) identify the faculty members who will assume educational and supervisory responsibility for residents; ^(Core)

I.B.2.a)(6) specify the responsibilities for teaching, supervision, and formal evaluation of residents. ^(Core)

I.B.3. The program must monitor the clinical learning and working environment at all participating sites. ^(Core)

I.B.3.a) At each participating site there must be one faculty member, designated by the program director as the site supervisor, who is accountable for resident education at that site, in collaboration with the program director. ^(Core)

I.B.4. 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 NIHS Accreditation System. ^(Core)

I.B.5. Resident assignments away from the Sponsoring Institution should not prevent residents' regular participation in required didactics. ^(Core)

I.C. Recruitment

The program, in partnership with its Sponsoring Institution, must engage in practices that focus on mission-driven, ongoing, systematic recruitment and retention of a diverse and inclusive workforce of residents, fellows (if present), faculty members, senior administrative staff members, and other relevant members of its academic community. ^(Core)

I.D. Resources

I.D.1. The program, in partnership with its Sponsoring Institution, must ensure the availability of adequate resources for resident education. ^(Core)

I.D.1.a) The program must provide adequate space, necessary equipment, and modern facilities to ensure an effective educational experience for residents in all the specialty/subspecialty rotations in diagnostic radiology. ^(Core)

I.D.1.a)(1) At least one Conference or Meeting room with adequate resources for didactic and case-based educational activities and program related meetings. ^(Core)

I.D.1.a)(2) Each training site must have electronic medical record systems compliant with current existing standards. ^(Core)

I.D.1.a)(3) Each training site must have Picture Archiving and Communication System (PACS) for reviewing, analyzing and interpreting radiology exams. ^(Core)

I.D.1.a)(4) Each training site should have permanent IT support to prevent disruption of the system for longer duration affecting patient care as well as education and training. ^(Core)

I.D.1.a)(5) Each training site should have voice recognition system for generation of reports. ^(Core)

I.D.1.a)(6) Program should make efforts to procure established and upcoming applications/programs useful in education and training of radiology residents. ^(Core)

I.D.1.a)(7) At least one site must have updated post-processing application specially for CT, MRI and Nuclear medicine studies. ^(Core)

I.D.1.a)(8) It will be preferred to have major referring clinical specialties and subspecialties at least at one of the training sites in order to constitute case-mix, complete and complex radiologic exams facilitating education and training of the radiology residents. ^(Core)

I.D.1.a)(9) There must be exposure to radiologic exams and procedures on out-patients, in-patients and ER patients. ^(Core)

I.D.1.a)(10) The major referring clinical specialties include Internal Medicine, Cardiology, Gastroenterology, Neurology, Oncology, General Surgery, Vascular Surgery, Neurosurgery, Head and Neck surgery, Cardiothoracic surgery, Obstetrics/Gynecology, Orthopedics, Pediatrics, Critical Care and Emergency Medicine; ^(Core)

I.D.1.a)(11) The additional referring clinical specialties include Infectious disease, Rheumatology, Endocrinology,

Colorectal surgery, Hepatobiliary surgery and Transplant surgery. ^(Core)

I.D.2. 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 ^(Core):

I.D.2.a) access to food while on duty; ^(Core)

I.D.2.b) safe, quiet, clean, and private sleep/rest facilities available and accessible for residents with proximity appropriate for safe patient care; ^(Core)

I.D.2.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.

I.D.2.d) security and safety measures appropriate to the participating Site; ^(Core)

I.D.2.e) accommodations for residents with disabilities consistent with the Sponsoring Institution's policy. ^(Core)

I.D.3. 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)

I.D.4. The program's educational and clinical resources must be adequate to support the number of residents appointed to the program. ^(Core)

I.D.4.a) Reading rooms with adequate spaces for interpreting radiology exams; adequate number of workstation and space available per resident for interpretation of radiology exams. ^(Core)

I.D.4.b) Diagnostic or interventional procedure rooms should have enough space to accommodate at least one resident per rotation. ^(Core)

I.D.5. The program must ensure a sufficient volume and variety of pediatric and adult patients for residents to gain experience in the full

spectrum of radiological examinations, procedures, and interpretations.
(Core)

I.D.5.a) The program must have at least 7,000 radiological examinations per year per resident. (Core)

I.D.5.b) Program should offer adequate exposure of the residents to imaging and procedures on modern and update technology;
(Core)

I.D.5.b)(1) The major and must modalities include: (Core)

- General Radiography and Fluoroscopy
- Computed Tomography (CT)
- Magnetic Resonance Imaging (MRI)
- Ultrasound Imaging
- Nuclear Medicine Imaging and Therapeutics
- Vascular and Interventional Radiology Suite

I.E. Other Learners and Other Care Providers

The presence of other learners and other care providers, including, but not limited to, residents from other programs, subspecialty fellows, and advanced practice providers, must enrich the appointed residents' education. (Core)

I.E.1. The program must report circumstances when the presence of other learners has interfered with the residents' education to the DIO and to the graduate medical education committee (GMEC). (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 enrich 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.*

II. Personnel

II.A. Program Director

II.A.1. 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)

II.A.1.a) The Sponsoring Institution's GMEC must approve a change in program director. (Core)

II.A.1.b) Final approval of the program director resides with the Central Accreditation Committee. (Core)

II.A.1.c) 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.*

II.A.2. At a minimum, the program director must be provided with the salary support required to devote 50 percent FTE of non-clinical time to the administration of the program. Additional support for the program director and, if applicable, the associate program director, must be provided based on program size. ^(Core)

Background and Intent: *Fifty percent FTE is defined as two-and-a-half (2.5) day per week. "Administrative time" is defined as non-clinical time spent meeting the responsibilities of the program director.*

II.A.3. Qualifications of the program director

II.A.3.a) must include specialty expertise and at least three years of documented educational and/or administrative experience, or qualifications acceptable to the Central Accreditation Committee; ^(Core)

Background and Intent: *Leading a program requires knowledge and skills that are established during residency and subsequently further developed. The time 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 diverse 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 Central Accreditation Committee may accept a candidate for program director who fulfills these goals but does not meet the three-year minimum.

Successful administration of a Diagnostic Radiology residency program requires administrative time. At least half of the required 0.5 FTE should include blocked time to complete administrative requirements of the residency. Time spent in clinics supervising residents, while important, should not be counted in the required 0.5 FTE of administrative time.

II.A.3.b) must be licensed as Consultant Radiologist and have at least three years post residency documented experience in Radiology, or with a specialty qualification that are acceptable to the Central Accreditation Committee; ^(Core)

II.A.3.c) must include current medical licensure and appropriate medical staff appointment; ^(Core)

II.A.3.d) must include ongoing active practice in radiology. ^(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.*

II.A.4. 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)

II.A.4.a) The program director must:

II.A.4.a)(1) 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.*

II.A.4.a)(2) 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)

II.A.4.a)(3) administer and maintain a learning environment conducive to educating the residents. in each of the Core Competency domains; ^(Core)

II.A.4.a)(4) develop and oversee a process to evaluate candidates prior to approval as program faculty members

for participation in the residency program education and at least annually thereafter; ^(Core)

II.A.4.a)(5) have the authority to approve and/or remove program faculty members for participation in the residency program education at all sites; ^(Core)

II.A.4.a)(6) 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.

II.A.4.a)(7) submit accurate and complete information required and requested by the DIO, GMEC, and NIHS; ^(Core)

II.A.4.a)(8) provide applicants who are offered an interview with information related to the applicant's eligibility for the relevant specialty board examination(s); ^(Core)

II.A.4.a)(9) provide a learning and working environment in which residents have the opportunity to raise concerns and provide feedback in a confidential manner as appropriate, without fear of intimidation or retaliation; ^(Core)

II.A.4.a)(10) ensure the program's compliance with the Sponsoring Institution's policies and procedures related to grievances and due process; ^(Core)

II.A.4.a)(11) ensure the program's compliance with the Sponsoring Institution's policies and procedures for due process when action is taken to suspend or dismiss, not to promote, or not to 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.*

II.A.4.a)(12) ensure the program's compliance with the Sponsoring Institution's policies and procedures on employment and non-discrimination; ^(Core)

II.A.4.a)(13) document verification of program completion for all graduating residents; within 30 days; ^(Core)

II.A.4.a)(14) provide verification of an individual resident's completion 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.*

II.A.4.a)(15) obtain review and approval of the Sponsoring Institution's DIO before submitting information, as required in the Institutional Requirements and outlined in the NIHS guidelines to the Common Program Requirements. ^(Core)

II.A.5. Associate Program Director (APD)

II.A.5.a) For programs with an approved resident complement of more than 15, the sponsoring institution must appoint an Associate Program director to support the PD by actively participating in administrative and educational activities ^(Core)

II.A.5.b) Sponsoring institution to provide APD with 0.3 FTE (or 12 hours per week) of protected time for education and program administration. ^(Core)

II.A.5.b)(1) The APD must not work more than 0.7 FTE in a clinical capacity. This must be demonstrated through clinical schedules over the entire period since the last accreditation visit or since program inception, whichever is shorter. ^(Detail)

II.A.5.c) APD should assume the role for a duration suitable for ensuring program continuity and stability. ^(Core)

II.B. 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. 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 or salary support.*

II.B.1. At each participating site, there must be enough faculty members with competence to instruct and supervise all residents at that location.
(Core)

II.B.1.a) The ratio of all faculty to residents must be a minimum of 1:1. (Core).

II.B.1.b) In addition to the practice domains, there should be designated physician faculty members with expertise in and responsibility for developing didactic content in the following educational content areas:

II.B.1.b)(1) CT; (Core)

II.B.1.b)(2) MRI; (Core)

II.B.1.b)(3) radiography/fluoroscopy; (Core)

II.B.1.b)(4) ultrasonography; (Core)

II.B.1.b)(5) nuclear medicine (Core)

Background and Intent: *Programs do not need to have additional faculty members to provide the didactic content for the educational content areas of CT, MRI, radiography/fluoroscopy, and ultrasonography. Any of the required eight core faculty members with additional expertise in any of the educational content areas may also provide education in these areas to fulfill this requirement and develop the didactic content for the related area.*

II.B.1.c) There should be physician faculty, non-physician faculty, or other staff members available to the program, within the institution, with expertise in quality, safety, and informatics. ^(Core)

II.B.1.c)(1) These faculty or staff members should develop didactic content related to their area of expertise. ^(Core)

Background and Intent: *The faculty or staff members who fulfill the roles for expertise in quality, safety, and informatics are not required to have formal certification in their respective area(s) of expertise.*

II.B.2. Faculty members must:

II.B.2.a) be role models of professionalism; ^(Core)

II.B.2.b) demonstrate commitment to the delivery of safe, 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.*

II.B.2.c) demonstrate a strong interest in the education of residents; ^(Core)

II.B.2.d) devote sufficient time to the educational program to fulfill their supervisory and teaching responsibilities; ^(Core)

II.B.2.e) administer and maintain an educational environment conducive to educating residents; ^(Core)

II.B.2.f) regularly participate in organized clinical discussions, rounds, journal clubs, and conferences; ^(Core)

II.B.2.g) 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.*

II.B.2.g)(1) as educators; ^(Core)

II.B.2.g)(2) in quality improvement and patient safety; ^(Core)

II.B.2.g)(3) in fostering their own and their residents' well-being; ^(Core)

II.B.2.g)(4) in patient care based on their practice-based learning and improvement efforts. ^(Core)

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 can 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.*

II.B.2.h) Faculty members must review all resident-interpreted studies. ^(Core)

II.B.2.h)(1) Faculty members should sign and verify these reports within 24 hours. ^(Detail)

II.B.2.i) Faculty members must always be available when residents are on call after hours. ^(Core)

II.B.2.j) Faculty members representing each practice domain must be responsible for the educational content of his/her respective practice domain and must organize conferences that cover topics in that domain. ^(Core)

II.B.2.k) Faculty members representing each practice domain must not have primary responsibility for the educational content of more than one practice domain but may have clinical responsibilities and/or teaching responsibilities in multiple practice domains. ^(Core)

II.B.2.l) Faculty members representing each practice domain must devote at least 0.5 FTE in their practice domain. ^(Core)

II.B.2.m) Faculty members responsible for the educational content of his/her respective practice domain must demonstrate a commitment to his or her respective practice domain. ^(Core)

II.B.2.m)(1) Such commitment should be demonstrated by specialty/subspecialty certification in the practice domain, fellowship training, or three years of practice in the domain; ^(Core)

II.B.3. Faculty Qualifications

II.B.3.a) Faculty members must have appropriate qualifications in their field and hold appropriate institutional appointments. ^(Core)

II.B.3.b) Physician faculty members must:

II.B.3.b)(1) have current license in Radiology or other specialty as required, or possess qualifications judged acceptable to the Central Accreditation Committee. ^(Core)

II.B.3.c) Any non-physician faculty members who participate in residency program education must be approved by the program director. ^(Core)

Background and Intent: *The provision of optimal and safe patient care requires a team approach. The education of residents by non-physician educators enables the resident to better manage patient care and provides valuable advancement of the residents' knowledge. Furthermore, other individuals contribute to the education of the resident 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.*

While the Central Accreditation Committee recognizes the role of non-physician faculty members as an important part of the clinical team, their faculty role should be as conference educators, workshop leaders, and as clinical team members, and should not be as clinical supervisors in the patient care environment.

II.B.4. 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 and in assessing residents' progress toward achievement of competence in 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, including completion of the annual NIHS Faculty annual survey.*

II.B.4.a) Core faculty members must be designated by the program director. ^(Core)

II.B.4.b) Core faculty members must complete the annual NIHS Faculty Survey. ^(Core)

II.B.4.c) There must be at least nine core physician faculty members to represent each of the following practice domains:
^(Core)

II.B.4.c)(1) abdominal (gastrointestinal and genitourinary) radiology; ^(Core)

II.B.4.c)(2) breast radiology; ^(Core)

II.B.4.c)(3) cardiothoracic (cardiac and thoracic) radiology; ^(Core)

II.B.4.c)(4) interventional radiology; ^(Core)

II.B.4.c)(5) musculoskeletal radiology; ^(Core)

II.B.4.c)(6) neuroradiology; ^(Core)

II.B.4.c)(7) nuclear radiology and molecular imaging; ^(Core)

II.B.4.c)(8) pediatric radiology; ^(Core)

II.B.4.c)(9) ultrasound including obstetrical. ^(Core)

II.C. Program Coordinator

II.C.1. There must be a program coordinator. ^(Core)

II.C.2. At a minimum, the program coordinator must be provided with adequate time for the administration of the program. ^(Core)

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

The program coordinator is a 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. Program coordinators are expected to develop unique knowledge of the NIHS and Program Requirements, policies, and procedures. Program coordinators assist the program director in accreditation efforts, 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.

II.D. 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.

III. Resident Appointments

III.A. Eligibility Requirements

III.A.1. An applicant must meet the following qualifications to be eligible for appointment to a NIHS -accredited program: ^(Core)

III.A.1.a) Refer to NIHS criteria included in the Training Bylaw. ^(Core)

III.A.1.b) To be eligible for appointment to the 5 years Diagnostic Radiology program, residents must have successfully completed a prerequisite of one year internship with education and experience in direct patient care and or alternatively at least 7 months of clinical training consisting of direct in-patient care can be incorporated in the first year of the Radiology training program provided the required minimum number of rotations are not affected as per IV.C.6.g). ^(Core)

III.A.1.b)(1) There must be at least seven months of inpatient rotations designed to provide the fundamental clinical skills and covering: critical care (at least one month), anesthesiology, emergency medicine (at least one month), internal medicine, neurology, obstetrics and gynecology, pediatrics, surgery or a surgical specialty. ^(Core)

III.A.2. All prerequisite post-graduate clinical education required for initial entry or transfer into NIHS-accredited residency programs must be completed in a NIHS-accredited residency programs, or in residency programs approved by the NIHS. ^(Core)

III.A.2.a) Residency programs must receive verification of each resident's level of competency in the required clinical field using NIHS 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 NIHS-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.

III.A.2.b) Prior to appointment in the program, residents must fulfill the NIHS eligibility criteria. ^(Core)

III.A.3. A physician who has completed a residency program that was not accredited by NIHS, may enter a NIHS-accredited residency program in the same specialty at the PGY-1 level and, at the discretion of the program director of the NIHS-accredited program and with approval by the GMEC, may be advanced to the PGY-2 level based on NIHS Milestones evaluations at the NIHS-accredited program. ^(Core)

III.B. Number of Residents

III.B.1. The program director must not appoint more residents than approved by the Central Accreditation Committee. ^(Core)

III.B.2. All changes in resident complement must be approved by the NIHS Central Accreditation Committee. ^(Core)

III.B.3. The number of residents appointed to the program must not exceed the program's educational and clinical resources. ^(Core)

III.C. 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)

IV. Educational Program

The NIHS 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.

IV.A. Curriculum Components

The Educational Curriculum must contain the following educational components: ^(Core)

IV.A.1. 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; ^(Core)

IV.A.2. Competency-based goals and objectives for each educational experience designed to promote progress on a trajectory to autonomous practice which is documented by Milestones evaluation. ^(Core)

IV.A.2.a) These goals and objectives must be distributed and available to residents and faculty members. ^(Core)

IV.A.3. delineation of resident responsibilities for patient care, progressive responsibility for patient management, and graded supervision; ^(Core)

IV.A.3.a) These responsibilities are described for each PGY level and specified in Milestones progress as determined by the Clinical Competency Committee (CCC). ^(Core)

IV.A.4. a broad range of structured didactic activities; ^(Core)

IV.A.4.a) A Residents must be provided with protected time to participate in structured core didactic activities. ^(Core)

Didactic activities include, but are not limited to, lectures, conferences, courses, labs, asynchronous learning, case discussions, grand rounds, didactic teaching, journal clubs, and education in critical appraisal of medical evidence.

IV.A.5. advancement of residents' knowledge of ethical principles essential to medical professionalism; ^(Core)

IV.A.6. advancement in the residents' knowledge of the basic principles of scientific inquiry, including how to design, conduct, and evaluate clinical research, explanation of it to patients, and applied to patient care. ^(Core)

IV.B. Defined Core Competencies

IV.B.1. The program must integrate the following Core Competencies into the curriculum: ^(Core)

IV.B.1.a) Professionalism

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

IV.B.1.a)(1) Residents must demonstrate competence in:

IV.B.1.a)(1)(a) compassion, integrity, and respect for others; ^(Core)

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

IV.B.1.a)(1)(c) respect for patient privacy and autonomy; ^(Core)

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

IV.B.1.a)(1)(e) respect and responsiveness to diverse patient populations, including but not limited to diversity in gender, age, culture, race, religion, disabilities, national origin, socioeconomic status, and sexual orientation; ^(Core)

IV.B.1.a)(1)(f) ability to recognize and develop a plan for one's own professional wellbeing; ^(Core)

IV.B.1.a)(1)(g) appropriately disclosing and addressing conflict or duality of interest. ^(Core)

IV.B.1.a)(2) Status of medical license maintenance. ^(Core)

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

IV.B.1.b)(1) Residents must be able to provide patient care that is appropriate, and effective for the treatment or health problems and the promotion of health. ^(Core)

IV.B.1.b)(1)(a) Residents should demonstrate competent patient care through safe, efficient, appropriately utilized, quality-controlled diagnostic and/or interventional radiological techniques. ^(Core)

IV.B.1.b)(1)(b) Residents after pre-requisite internship or incorporated clinical training in the program must demonstrate competence in fundamental clinical skills of medicine, including:

IV.B.1.b)(1)(b)(i) obtaining a comprehensive medical history; ^(Core)

IV.B.1.b)(1)(b)(ii) performing a comprehensive physical examination; ^(Core)

IV.B.1.b)(1)(b)(iii) assessing a patient's medical conditions; ^(Core)

IV.B.1.b)(1)(b)(iv) making appropriate use of diagnostic studies and tests; ^(Core)

IV.B.1.b)(1)(b)(v) integrating information to develop a differential diagnosis ^(Core)

IV.B.1.b)(1)(b)(vi) implementing a treatment plan. ^(Core)

IV.B.1.b(2) Residents must be able to perform all medical, diagnostic, and surgical procedures considered essential for the area of practice. ^(Core)

IV.B.1.b(2)(a) Residents must demonstrate competence in the:

IV.B.1.b(2)(a)(i) performance of basic image-guided procedures; ^(Core)

IV.B.1.b(2)(a)(ii) interpretation of CT, MRI, radiography, and radionuclide imaging of the cardiovascular system (heart and great vessels); ^(Core)

IV.B.1.b(2)(a)(iii) generation of ultrasound images using the transducer and imaging system, and interpretation of ultrasonographic examinations of various types; ^(Core)

IV.B.1.b(2)(a)(iii)(a) Residents should have sufficient hands-on scanning experience. ^(Core)

IV.B.1.b(2)(a)(iii)(a)(i) This should include the performance of 75 hands-on scans. ^(Core)

IV.B.1.b(2)(a)(iii)(b) Programs should incorporate a process to document resident proficiency of ultrasonographic skills. ^(Core)

Background and Intent: *“Sufficient” hands-on ultrasound scanning experience means that residents are to experience the basic aspects of ultrasound such as ultrasound physics, knobology, image generation, and interpretation. Examples of the types of routine ultrasound examinations that could provide these experiences include, but are not limited to, abdominal ultrasound, obstetrical/gynecological ultrasound, pediatric ultrasound, musculoskeletal ultrasound, vascular ultrasound, and breast ultrasound. Ultrasound-guided interventional procedures are also acceptable.*

IV.B.1.b(2)(a)(iv) management of contrast reactions; ^(Core)

IV.B.1.b(2)(a)(v) ongoing awareness of radiation exposure, protection, and safety,

and the application of these principles in practice. ^(Core)

IV.B.1.b(3) Resident shall demonstrate and include in the Log Book, the following:

IV.B.1.b(3)(a) participation in therapies involving oral administration of sodium iodide I-131, including the date, diagnosis, and dosage; ^(Core)

IV.B.1.b(3)(b) interpretation/multi-reading of mammograms; ^(Core)

IV.B.1.b(3)(c) participation in 75 hands-on ultrasonographic examinations of various types; ^(Core)

IV.B.1.b(3)(d) performance of invasive procedures and any complications. ^(Core)

IV.B.1.b(4) Demonstrate competent patientcare through quality-controlled diagnostic and/or interventional radiological techniques which are safe, efficient and appropriate. *"Right Test using Right Dose for the Right patient at the Right Time"*. ^(Core)

IV.B.1.c) Medical Knowledge

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

IV.B.1.c(1) Residents must demonstrate knowledge of:

IV.B.1.c(1)(a) the principles of medical imaging physics, including CT, dual-energy X-ray absorptiometry, fluoroscopy, gamma camera and hybrid imaging technologies, MRI, radiography, and ultrasonography; ^(Core)

IV.B.1.c(1)(b) non-interpretive skills, including health care economics, coding and billing compliance, and the business of medicine; ^(Core)

IV.B.1.c(1)(c) appropriate and patient-centered imaging utilization; ^(Core)

IV.B.1.c(1)(d) quality improvement techniques; ^(Core)

IV.B.1.c)(1)(e) radiologic/pathologic correlation; ^(Core)

IV.B.1.c)(1)(f) physiology, utilization, and safety of contrast agents and pharmaceuticals. ^(Core)

IV.B.1.d) Practice-based Learning and Improvement

Residents must demonstrate the ability to investigate and evaluate their care of patients, applying scientific evidence, and to continuously improve patient care based on constant self-evaluation and lifelong learning. ^(Core)

IV.B.1.d)(1) Residents must demonstrate competence in:

IV.B.1.d)(1)(a) identifying strengths, deficiencies, and limits in one's knowledge and expertise; ^(Core)

IV.B.1.d)(1)(b) setting learning and improvement goals; ^(Core)

IV.B.1.d)(1)(c) identifying and performing appropriate learning activities; ^(Core)

IV.B.1.d)(1)(d) systematically analyzing practice using quality improvement methods and implementing changes with the goal of practice improvement; ^(Core)

IV.B.1.d)(1)(e) incorporating feedback and formative evaluation into daily practice; ^(Core)

IV.B.1.d)(1)(f) locating, appraising, and assimilating evidence from scientific studies related to their patients' health problems; ^(Core)

IV.B.1.d)(1)(g) using information technology to optimize learning. ^(Core)

IV.B.1.e) 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)

IV.B.1.e)(1) Residents must demonstrate competence in:

IV.B.1.e)(1)(a) communicating effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds; ^(Core)

IV.B.1.e)(1)(a)(i) Residents must demonstrate competence in obtaining informed consent and effectively describing imaging appropriateness, safety issues, and the results of diagnostic imaging and procedures to patients. ^(Core)

IV.B.1.e)(1)(b) communicating effectively with physicians, other health professionals and health-related agencies; ^(Core)

IV.B.1.e)(1)(b)(i) Residents must demonstrate competence in communicating the results of examinations and procedures to the referring provider and/or other appropriate individuals effectively and in a timely manner. ^(Core)

IV.B.1.e)(1)(c) working effectively as a member or leader of a health care team or other professional group; ^(Core)

IV.B.1.e)(1)(d) educating patients, families, students, residents, and other health professionals; ^(Core)

IV.B.1.e)(1)(e) acting in a consultative role to other physicians and health professionals; ^(Core)

IV.B.1.e)(1)(f) maintaining comprehensive, timely, and legible medical records, if applicable; ^(Core)

IV.B.1.e)(1)(g) supervising, providing consultation to, and teaching medical students and/or residents. ^(Core)

IV.B.1.f) 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)

IV.B.1.f)(1) Residents must demonstrate competence in:

IV.B.1.f)(1)(a) working effectively in various health care delivery settings and systems relevant to their clinical specialty; ^(Core)

IV.B.1.f)(1)(b) coordinating patient care across the health care continuum and beyond as relevant to their clinical specialty; ^(Core)

IV.B.1.f)(1)(c) advocating for quality patient care and optimal patient care systems; ^(Core)

IV.B.1.f)(1)(d) working in interprofessional teams to enhance patient safety and improve patient care quality; ^(Core)

IV.B.1.f)(1)(e) participating in identifying system errors and implementing potential systems solutions; ^(Core)

IV.B.1.f)(1)(f) incorporating considerations of value, cost awareness, delivery and payment, and risk benefit analysis in patient and/or population-based care as appropriate; ^(Core)

IV.B.1.f)(1)(g) understanding health care finances and its impact on individual patients' health decisions. ^(Core)

IV.B.1.f)(2) Residents must learn to advocate for patients within the health care system to achieve the patient's and family's care goals, including, when appropriate, end-of-life goals. ^(Core)

IV.C. Curriculum Organization and Resident Experiences

IV.C.1. The curriculum must be structured to optimize resident educational experiences, the length of these experiences, and supervisory continuity. ^(Core)

IV.C.1.a) Assignment of rotations must be structured with sufficient length to provide a quality educational experience, defined by continuity of patient care, ongoing supervision, relationships with faculty members, and high-quality assessment and feedback. ^(Core)

IV.C.1.b) Clinical experiences should be structured to facilitate learning in a manner that allows residents to function as part of an effective interprofessional team. ^(Core)

IV.C.1.c) The assignment of educational experiences should be structured to minimize the frequency of transitions. ^(Detail)

IV.C.1.d) 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)

IV.C.2. The program must provide instruction and experience in pain management if applicable in Radiology, including recognition of the signs of addiction. ^(Core)

IV.C.3. Didactics

IV.C.3.a) The core didactic curriculum:

IV.C.3.a)(1) must be repeated at least every two years; ^(Core)

Background and Intent: *While the core didactic curriculum must be repeated every two years at a minimum, programs are encouraged to repeat the didactic curriculum on a 1.5-year cycle so that residents can be exposed to all essential topics twice before the NIHS Board examination.*

IV.C.3.a)(2) must provide at least five hours per week of didactic activities; ^(Core)

IV.C.3.a)(3) must include interactive conferences; ^(Core)

IV.C.3.a)(4) must be documented; ^(Core)

IV.C.3.a)(5) should include interdisciplinary conferences in which both residents and faculty members participate on a regular basis. ^(Core)

Background and Intent: *Interdisciplinary conferences include any clinical or didactic conferences at which representation from multiple clinical specialties is present. Examples include an oncology conference with representation from the medical, surgical, and/or radiation oncology departments, or a peripheral vascular conference with representation from the vascular surgery and/or cardiology departments.*

IV.C.3.b) Residents must be provided protected time to attend didactic activities scheduled by the program. ^(Core)

IV.C.3.c) The program must provide mechanisms for residents to participate in all scheduled didactic activities either in-person or by electronic means. ^(Core)

IV.C.3.d) The program should document resident participation in didactic activities through out the duration of the educational program. ^(Detail)

IV.C.3.e) The didactic curriculum must include all the relevant topics of basic sciences and clinical concepts, entities and

disorders which are required to be learnt during educational and training process by application of radiologic/medical imaging knowledge and techniques:

IV.C.3.e)(1) anatomy, disease processes, imaging, and physiology; ^(Core)

IV.C.3.e)(2) medical physics topics as related to the radiologic modalities with clinical applications plus quality and safety ramifications; ^(Core)

IV.C.3.e)(3) pathologic disorders as broken down under each subspecialty rotation; ^(Core)

IV.C.3.e)(4) modality:

- Conceptual/fundamental knowledge ^(Core)
- Clinical applications and problem solving. ^(Core)

IV.C.3.e)(5) specialty/subspecialty clinical and general content; ^(Core)

IV.C.3.e)(6) topics related to professionalism, physician well-being, diversity inclusion, and ethics; ^(Core)

IV.C.3.e)(7) training in the clinical application of medical physics, distributed throughout the duration of the educational program; ^(Core)

IV.C.3.e)(7)(a) A medical physicist must oversee the development of the physics curriculum. ^(Core)

IV.C.3.e)(7)(b) The curriculum should include real-time expert discussions and interactive educational experiences. ^(Core)

IV.C.3.e)(7)(c) Training in the clinical application of medical physics shall include Basic concepts, Clinical applications and Quality/Safety concepts and procedures. ^(Core)

Background and Intent: *It is not an expectation that all physics education be delivered in person by a physicist faculty member or a physicist on site; this resource could be an area physicist at another site or program. Programs can share this resource and collaborate on the curriculum and lectures. Essentially, the physics didactic curriculum should not consist entirely of online-recorded lectures for the residents to review without real-time interaction. While programs are free to use alternative educational tools such as online modules, these tools should provide a real time and interactive component that allows residents to engage with the lecturer.*

IV.C.3.f) a minimum of 80 hours of classroom and laboratory training in basic radionuclide handling techniques applicable to the medical use of unsealed byproduct material for imaging and localization studies (10 CFR 35.290) and oral administration of sodium iodide I-131 for procedures requiring a written directive (10 CFR 35.392, 10 CFR 35.394). ^(Core)

IV.C.3.f)(1) Integral to the practice of nuclear radiology, these didactics must include, at a minimum, the following subjects:

IV.C.3.f)(1)(a) radiation physics and instrumentation; ^(Core)

IV.C.3.f)(1)(b) radiation protection; ^(Core)

IV.C.3.f)(1)(c) mathematics pertaining to use and measurement of radioactivity; ^(Core)

IV.C.3.f)(1)(d) chemistry of by-product material for medical use; ^(Core)

IV.C.3.f)(1)(e) radiation biology. ^(Core)

IV.C.4. Curriculum

Diagnostic Radiology Program

IV.C.4.a) Each resident must complete a minimum of 12 weeks of clinical rotations in breast imaging. ^(Core)

IV.C.4.a)(1) Each resident must interpret the minimum number of mammograms within the specified time period as designated by the U.S. Food and Drug Administration's (FDA) Mammography Quality Standards Act (MQSA) regulations. ^(Core)

IV.C.4.b) Each resident must complete a minimum of 700 hours of training and work experience under the supervision of an authorized user (AU) in basic radionuclide handling techniques and radiation safety applicable to the medical use of unsealed byproduct material for imaging and localization studies (10 CFR 35.290) and oral administration of sodium iodide I-131 for procedures requiring a written directive (10 CFR 35.392, 10 CFR 35.394). ^(Core)

Background and Intent: According to Nuclear Regulatory Commission (NRC) Guidelines § 35.290 Training for imaging and localization studies, the NRC requires "700 hours of training and experience, including a minimum of 80 hours of classroom and

laboratory training.” Thus, there is the option to count the 80 hours of classroom and laboratory training toward the 700-hour total. In any case, the 80-hour requirement must be met, either in addition to the 700 hours (more than 700 hours total) or as part of the 700 hours.

IV.C.4.b)(1) Supervised work experience, at a minimum, must involve all operational and quality control procedures integral to the practice of nuclear radiology, including but not limited to: ^(Core)

IV.C.4.b)(1)(a) receiving packages; ^(Core)

IV.C.4.b)(1)(b) using generator systems; ^(Core)

IV.C.4.b)(1)(c) calibrating and administering unsealed radioactive materials for diagnostic and therapeutic use; ^(Core)

IV.C.4.b)(1)(d) completing written directives; ^(Core)

IV.C.4.b)(1)(e) adhering to the ALARA (as low as reasonably achievable) principle; ^(Core)

IV.C.4.b)(1)(f) ensuring radiation protection in practice, to include dosimeters, exposure limits, and signage; ^(Core)

IV.C.4.b)(1)(g) using radiation-measuring instruments; ^(Core)

IV.C.4.b)(1)(h) conducting area surveys; ^(Core)

IV.C.4.b)(1)(i) managing radioactive waste; ^(Core)

IV.C.4.b)(1)(j) preventing medical events; ^(Core)

IV.C.4.b)(1)(k) responding to radiation spills and accidents. ^(Core)

IV.C.4.b)(2) Under AU preceptor supervision, each resident must:

IV.C.4.b)(2)(a) participate in at least three cases involving the oral administration of less than or equal to 1.22 gigabecquerels (33 millicuries) of sodium iodide I-131 and at least three cases involving the oral administration of greater than 1.22 gigabecquerels (33 millicuries) of sodium iodide I-131. ^(Core)

IV.C.4.b)(2)(b) participate in patient selection and preparation; ^(Core)

IV.C.4.b)(2)(c) complete documentation, including the written directive and informed consent; ^(Core)

IV.C.4.b)(2)(d) understand and calculate the administered dosage; ^(Core)

IV.C.4.b)(2)(e) counsel patients and their families on radiation safety issues; ^(Core)

IV.C.4.b)(2)(f) determine release criteria; ^(Core)

IV.C.4.b)(2)(g) arrange patient follow-up; ^(Core)

IV.C.4.b)(2)(h) make pregnancy and breastfeeding recommendations. ^(Core)

IV.C.5. Resident Experiences

IV.C.5.a) Residents must not interpret examinations without direct supervision until they have completed at least 11 blocks of radiology rotations. ^(Core)

IV.C.5.b) Resident participation in on-call activities, including being on-duty after-hours and on weekends or holidays, should occur throughout PGY-2-5 provided condition stated in IV.C.5.a is met. ^(Core)

IV.C.5.b)(1) Resident competence must be assessed and documented prior to residents being under oversight supervision. ^(Core)

IV.C.5.b)(2) Resident supervision during on-call activities must be provided by a senior resident, fellow, or radiology faculty member. ^(Core)

IV.C.5.b)(2)(a) A radiology faculty member must be available to residents for direct or indirect supervision. ^(Core)

IV.C.5.b)(3) Resident on-call experiences must include interpretation, reporting, and management of active cases, and must not include administrative roles or duties consisting primarily of re-review of previously reported cases. ^(Core)

IV.C.5.c) Resident participation in patient care and radiology-related activities must occur throughout the duration of the program. ^(Core)

IV.C.5.d) Residents must maintain current certification in advanced cardiac life-support (ACLS). ^(Core)

IV.C.5.e) Residents should have experience in sedation analgesia. ^(Detail)

IV.C.5.f) Resident procedural experiences must be tracked using the applicable Case Log System and must at least meet the procedural minimums as defined by the Central Accreditation Committee. ^(Core)

IV.C.6. Clinical Rotations.

IV.C.6.a) Each rotation block should have set goals, objectives and duties for the resident including protocolling of exams; ^(Core)

IV.C.6.b) A master schedule should be prepared at the start of the academic year including assigned blocks for annual leaves; ^(Core)

IV.C.6.c) There must be a designated rotation supervisor who must evaluate the resident at the end of rotation; ^(Core)

IV.C.6.d) Resident participation in patient care and radiology-related activities must occur throughout the program; ^(Core)

IV.C.6.e) Two rotations of the same sub-specialty in the same year should be preferably bundled together in order to promote continuity of learning especially in vascular and interventional radiology; ^(Core)

IV.C.6.f) Program should require at least two teaching files to be prepared at the end of rotation by the resident and submitted to the rotation supervisor. ^(Core)

IV.C.6.g) The Rotations blocks through whole 5 years of training period as follows with minimum rotations in parenthesis (not including 1 block of leave per year): ^(Core)

- Neuroradiology/Neuroimaging: 5 (minimum 4)
- Musculoskeletal Imaging & related Procedures: 5 (minimum 4)
- Abdominal Imaging (+MRI Female Pelvis): 5 (minimum 4)
- Pediatric Imaging: 5 (minimum 4)
- Nuclear Medicine imaging (including Nuclear Cardiology) (at least 1 PET rotation): 5 (minimum 5)

- Vascular & Interventional Radiology (IR) (may include any other imaging-guided procedures): 5 (minimum 4)
- Breast Imaging & related Procedures: 4 (minimum 3)
- Emergency Radiology: 3 (minimum 2)
- Chest imaging: 3 (minimum 2)
- Ultrasound Imaging (Reporting): 3 (minimum 2)
- Obstetric ultrasound: 2
- General Radiography/Fluoroscopy: 3 (minimum 2)
- Cardiac Imaging: 2
- Ultrasound Hands-on: 2
- Research & Electives: 2.

Background and Intent: *It is expected that residents to be engaged in clinical (or research-related) work throughout all residency programs. Examination preparation or other non-research-related activities that do not interfere with clinical training are permitted. Residents' protected time away from clinical duties during normal workdays for independent or unsupervised examination preparation is not allowed.*

IV.D. 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 must include discovery, integration, application and teaching.

IV.D.1. Program Responsibilities

IV.D.1.a) The program must demonstrate evidence of scholarly activities consistent with its mission(s) and aims. ^(Core)

IV.D.1.b) The program, in partnership with its Sponsoring Institution, must allocate adequate resources to facilitate resident and faculty involvement in scholarly activities. ^(Core)

IV.D.1.c) The program must advance residents' knowledge and practice of the scholarly approach to evidence-based patient care. ^(Core)

Background and Intent: *Elements of a scholarly approach to patient care include:*

- *Asking meaningful questions to stimulate residents to utilize learning resources to create a differential diagnosis, a diagnostic algorithm, and treatment plan*
- *Challenging the evidence that the residents use to reach their medical decisions so that they understand the benefits and limits of the medical literature*

- *When appropriate, dissemination of scholarly learning in a peer-reviewed manner (publication or presentation)*
- *Improving resident learning by encouraging them to teach using a scholarly approach*

IV.D.2. Faculty Scholarly Activity

IV.D.2.a) 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 journal publications, case-presentation publications
- 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

IV.D.2.b) The program must demonstrate scholarly activity by the following methods: ^(Core)

IV.D.2.b)(1) faculty participation in grand rounds, posters, workshops, quality improvement presentations, podium presentations, 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. ^(Core)

IV.D.2.b)(2) peer-reviewed publication incl. case-discussion and letters to the editor. ^(Core)

IV.D.3. Resident Scholarly Activity

IV.D.3.a) While in the program, residents must engage in at least one of the following scholarly activities: 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. ^(Core)

IV.D.3.b) Residents must participate in scholarly project. ^(Core)

IV.D.3.b)(1) Residents must complete a scholarly project relevant to the specialty which was conducted under supervision of a faculty member. ^(Core)

IV.D.3.b)(2) The project, shall be prepared in a form which can be used for publication or presentation and submitted for publication in a specialty specific journal or presented in a national or international specialty conference. ^(Core)

IV.D.3.b)(3) The proof of project submission for publication, or presentation in a medical conference, will be part of the resident's portfolio and will be documented in the final summative evaluation prior to Board Certification, in accordance with NIHS guidelines. ^(Core)

V. Evaluation

V.A. Resident Evaluation

V.A.1. Feedback and Evaluation

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.

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 and 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.

V.A.1.a) Faculty members must directly observe, evaluate, and frequently provide feedback on resident performance during each rotation or similar educational assignment. ^(Core)

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.

V.A.1.b) Evaluation must be documented at the completion of the assignment. ^(Core)

V.A.1.b)(1) For block rotations of greater than three months in duration, evaluation must be documented at least every three months. ^(Core)

V.A.1.b)(2) For block rotations of any duration, a written evaluation must be provided at the end of the rotation. ^(Core)

V.A.1.c) The program must provide an objective performance evaluation based on the Competencies and the specialty-specific Milestones, and must: ^(Core)

V.A.1.c)(1) use multiple evaluators (e.g., faculty members, peers, patients, self, and other professional staff members) ^(Core)

V.A.1.c)(2) provide that information to the Clinical Competency Committee for its synthesis of progressive resident performance and improvement toward unsupervised practice. ^(Core)

V.A.1.d) The program director or their designee, with input from the Clinical Competency Committee, must:

V.A.1.d)(1) Meet with and review with each resident their documented semi-annual evaluation of performance, including progress and the specialty-specific Milestones ^(Core)

V.A.1.d)(1)(a) Review of resident Case-Logs must be a part of the semi-annual review. ^(Detail)

V.A.1.d)(2) assist residents in developing individualized learning plans to capitalize on their strengths and identify areas for growth; ^(Core)

V.A.1.d)(3) develop plans for residents failing to progress, following both the NIHS Emirati Board and institutional policies and procedures. ^(Core)

Residents who are experiencing difficulties with achieving progress in 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 NIHS 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 NIHS and institutional policies and procedures.

V.A.1.e) 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)

V.A.1.f) The evaluations of a resident's performance must be accessible for review by the resident. ^(Core)

V.A.1.g) Assessment should specifically monitor the resident's knowledge by use of a formal In-Training Examination or other cognitive exams. Tests results should not be the sole criterion of resident knowledge and should not be used as the sole criterion for promotion to a subsequent PG level.

V.A.1.h) Resident Promotion & Exam Eligibility: ^(Core)

- Residents are eligible to sit for Part 1 of the Emirati Board Exam as PGY1 (as stipulated by NIHS) and should complete it by the end of PGY 3 as a prerequisite to being promoted to PGY4. ^(Core)
- Residents who fail the Part 1 exam after PGY3 are required to repeat and train additional year. Refer to NIHS eligibility criteria included in the Training Bylaw. ^(Core)
- Residents are eligible for Part 2a (Written exam) after completion of 48 Blocks and approved by Program Director. ^(Core)
- Residents are eligible for Part 2b (Oral/Interactive exam) after completion of 48 Blocks, passing Part 2a and approved by Program Director. ^(Core)

V.A.2. Final Evaluation

V.A.2.a) The program director must provide a final evaluation for each resident upon completion of the program. ^(Core)

V.A.2.a)(1) The Radiology-specific Milestones, and when applicable the Radiology-specific Case Logs, must be used as tools to document performance and verify that the resident has demonstrated sufficient competence to be able to engage in autonomous practice upon completion of the program, and once he/she obtain the license to practice in Radiology speciality. ^(Core)

V.A.2.a)(2) The final evaluation must:

V.A.2.a)(2)(a) 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)

V.A.2.a)(2)(b) verify that the resident has demonstrated the knowledge, skills, and behaviours necessary to enter autonomous practice; ^(Core)

V.A.2.a)(2)(c) consider recommendations from the Clinical Competency Committee; ^(Core)

V.A.2.a)(2)(d) be shared with the resident upon completion of the program. ^(Core)

V.A.3. A Clinical Competency Committee must be appointed by the program director. ^(Core)

V.A.3.a) The Clinical Competency Committee must include at least three members of the program faculty, at least one of whom is a core faculty member. ^(Core)

V.A.3.a)(1) 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)

V.A.3.a)(2) The Program Director has final responsibility for resident evaluation and promotion decisions. ^(Core)

V.A.3.b) The Clinical Competency Committee must:

V.A.3.b)(1) review all residents evaluation at least semi-annually; ^(Core)

V.A.3.b)(2) determine each resident's progress on achievement of the specialty-specific Milestones; and, ^(Core)

V.A.3.b)(3) meet prior to the residents' semi-annual evaluations and advise the program director regarding each resident's progress. ^(Core)

V.B. Faculty Evaluation

V.B.1. The program must have a process to evaluate each faculty member's performance as it relates to the educational program at least annually. ^(Core)

V.B.1.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, review of patient outcomes, professionalism, research, and scholarly activities. ^(Core)

V.B.1.b) This evaluation must include written, anonymous, and confidential evaluations by the residents. ^(Core)

V.B.2. Faculty members must receive feedback on their evaluations at least annually. ^(Core)

V.B.3. Results of the faculty educational evaluations should be incorporated into program-wide faculty development plans. ^(Core)

V.B.4. The program has the responsibility to evaluate and improve the program faculty members' teaching, scholarship, professionalism, and quality care. Therefore, the annual review of the program's faculty members is mandatory and can be used as input into the Annual Program Evaluation. ^(Core)

V.C. Program Evaluation and Improvement

V.C.1. 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)

The performance of residents and faculty members reflects program quality and will use metrics to reflect the program's goals.

The Program Evaluation Committee must present the Annual Program Evaluation Report in a written form to be discussed with all program faculty and residents as a part of continuous improvement plans.

V.C.1.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)

V.C.1.b) Program Evaluation Committee responsibilities must include:

V.C.1.b)(1) acting as an advisor to the program director, through program oversight; ^(Core)

V.C.1.b)(2) review of the program's requirements, both NIHS Emirati Board required and program self-determined goals, and the progress toward meeting them; ^(Core)

V.C.1.b)(3) guiding ongoing program improvement, including developing new goals based upon outcomes; ^(Core)

V.C.1.b)(4) review of the current operating environment to identify strengths, challenges, opportunities, and threats related to the program's mission and aims. ^(Core)

V.C.1.c) The Program Evaluation Committee should consider the following elements in its assessment of the program:

V.C.1.c)(1) program curriculum; ^(Core)

V.C.1.c)(2) outcomes from prior Annual Program Evaluation(s); ^(Core)

V.C.1.c)(3) NIHS letters of notification including citations, areas for improvement, and comments; ^(Core)

V.C.1.c)(4) the quality and safety of patient care; ^(Core)

V.C.1.c)(5) Aggregate residents and the faculty:

V.C.1.c)(5)(a) well-being; ^(Core)

V.C.1.c)(5)(b) recruitment and retention following institutional policies; ^(Core)

V.C.1.c)(5)(c) workforce diversity following institutional policies; ^(Core)

V.C.1.c)(5)(d) engagement in quality improvement and patient safety; ^(Core)

V.C.1.c)(5)(e) scholarly activity; ^(Core)

V.C.1.c)(5)(f) Resident and Faculty Surveys; ^(Core)

V.C.1.c)(5)(g) written evaluations of the program (see above). (Core)

V.C.1.c)(6) Aggregate resident:

V.C.1.c)(6)(a) achievement of the Milestones; (Core)

V.C.1.c)(6)(b) in-training examination results ; (Core)

V.C.1.c)(6)(c) board pass and certification rates (Core)

V.C.1.c)(6)(d) graduates' performance. (Core)

V.C.1.c)(7) Aggregate faculty:

V.C.1.c)(7)(a) faculty evaluation; (Core)

V.C.1.c)(7)(b) professional development. (Core)

V.C.1.d) The Program Evaluation Committee must evaluate the program's mission and aims, strengths, areas for improvement, and threats. (Core)

V.C.1.e) The Annual Program Evaluation review, including the action plan, must:

V.C.1.e)(1) be distributed to and discussed with the members of the teaching faculty and the residents (Core)

V.C.1.e)(2) be submitted to the DIO. (Core)

V.C.2. The program will be accredited and reaccreditation by the NIHS according with NIHS Accreditation Bylaws. (Core)

V.C.2.a) The program must complete a Self-Study before its reaccreditation Site Visit. (Core)

V.C.2.b) The Self-Study is an objective, comprehensive evaluation of the residency program with the aim to improve it. (Core)

V.C.3. The goal of NIHS-accredited education is to train physicians who seek and achieve a board certification. One measure of the effectiveness of the educational program is the ultimate pass rate. (Core)

V.C.3.a) Under the guidance of the Program Director all eligible program graduates should take the certifying examination conducted by the NIHS to obtain the Board Certification. (Core)

V.C.4. During the residency, the Residents are strongly encouraged to sit for an organized Annual In-Training Examination. (Core)

VI. 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 through faculty modeling of:
 - the effacement of self-interest in a humanistic environment that supports the professional development of physicians
 - the joy of curiosity, problem-solving, intellectual rigor, and discovery
- Commitment to the well-being of the students, residents, faculty members, and all members of the health care team

VI.A. Patient Safety, Quality Improvement, Supervision, and Accountability

VI.A.1. Patient Safety and Quality Improvement

All physicians share responsibility for promoting patient safety and enhancing quality of patient care. Graduate medical education must prepare residents to provide the highest level of clinical care with continuous focus on the safety, individual needs, and humanity of their patients. It is the right of each patient to be cared for by residents who are appropriately supervised; possess the requisite knowledge, skills, and abilities; understand the limits of their knowledge and experience; and seek assistance as required to provide optimal patient care.

Residents must demonstrate the ability to analyze the care they provide, understand their roles within health care teams, and play an active role in system improvement processes. Graduating residents will apply these skills to critique their future unsupervised practice and effect quality improvement measures.

It is necessary for residents and faculty members to consistently work in a well-coordinated manner with other health care professionals to achieve organizational patient safety goals.

VI.A.1.a) Patient Safety

VI.A.1.a)(1) 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.

VI.A.1.a)(1)(a) The program, its faculty, residents, and fellows must actively participate in patient safety systems and contribute to a culture of safety. (Core)

VI.A.1.a)(1)(b) The program must have a structure that promotes safe, inter-professional, team-based care. (Core)

VI.A.1.a)(2) Education on Patient Safety

Programs must provide formal educational activities that promote patient safety-related goals, tools, and techniques. (Core)

Background and Intent: *Optimal patient safety occurs in the setting of a coordinated inter-professional learning and working environment.*

VI.A.1.a)(3) Patient Safety Events

Reporting, investigation, and follow-up of adverse 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.

VI.A.1.a)(3)(a) Residents, fellows, faculty members, and other clinical staff members must:

- know their responsibilities in reporting patient safety events at the clinical site; (Core)
- know how to report patient safety events, including near misses, at the clinical site; (Core)
- be provided with summary information of their institution's patient safety reports. (Core)

VI.A.1.a)(3)(b) Residents must participate as team members in real and/or simulated inter-professional clinical patient safety activities, such as root cause analyses or other activities that include analysis, as well as formulation and implementation of actions. (Core)

VI.A.1.a)(4) Resident Education and Experience in Disclosure of Adverse Events

Patient-centered care requires patients, and when appropriate families, to be apprised of clinical situations that affect them, including adverse events. This is an important skill for faculty physicians to model, and for residents to develop and apply.

VI.A.1.a)(4)(a) All residents must receive training in how to disclose adverse events to patients and families. ^(Core)

VI.A.1.a)(4)(b) Residents should have the opportunity to participate in the disclosure of patient safety events, real or simulated. ^(Detail)

VI.A.1.b) Quality Improvement

VI.A.1.b)(1) Education in Quality Improvement

A cohesive model of health care includes quality-related goals, tools, and techniques that are necessary in order for health care professionals to achieve quality improvement goals.

Residents must receive training and experience in quality improvement processes, including an understanding of health care disparities. ^(Core)

VI.A.1.b)(2) Quality Metrics

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

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

VI.A.1.b)(2)(a) Residents should learn and develop insight about the following domains as basis of Key Performance Indicators. ^(Detail)

- Patient Access
- Efficiency (reporting turnaround times and waiting times)
- Critical Results Reporting and Communication
- Radiology Volumes and Productivity

- Peer Review

VI.A.1.b)(3) Engagement in Quality Improvement Activities

Experiential learning is essential to developing the ability to identify and institute sustainable systems-based changes to improve patient care.

Residents must have the opportunity to participate in inter-professional quality improvement activities. ^(Core)

VI.A.1.b) (4) Appropriateness in Radiology

Appropriateness is one of the core values in good clinical practices:

- Program must strongly inculcate appropriateness in the residents meaning to "Practice and Preach Appropriateness in Radiology;" ^(Core)
- Radiology staff should be the gatekeepers in exposing the patient to any radiology modality; ^(Core)
- Principle of ALARA (As Low As Reasonably Achievable) should be strictly followed. ^(Core)

VI.A.2. Supervision and Accountability

VI.A.2.a) 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.

VI.A.2.a)(1) Each patient must have an identifiable and appropriately-credentialed and privileged attending physician who is responsible and accountable for the patient's care. ^(Core)

VI.A.2.a)(1)(a) This information must be available to residents, faculty members, other members of the health care team, and patients. (Core)

VI.A.2.a)(1)(b) Residents and faculty members must inform each patient of their respective roles in that patient's care when providing direct patient care. (Core)

VI.A.2.b) Supervision may be exercised through a variety of methods. For many aspects of patient care, the supervising physician may be a more advanced resident or fellow. Other portions of care provided by the resident can be adequately supervised by the appropriate availability of the supervising faculty member, fellow, or senior resident physician, either on site or by means of telecommunication technology. Some activities require the physical presence of the supervising faculty member. In some circumstances, supervision may include post-hoc review of resident-delivered care with feedback.

VI.A.2.b)(1) 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)

VI.A.2.b)(2) The program must define when physical presence of a supervising physician is required. (Core)

VI.A.2.c) Levels of Supervision

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

VI.A.2.c)(1) Direct Supervision: the supervising physician is physically present with the resident during the key portions of the patient interaction. (Core)

PGY-1 residents must initially be supervised directly. (Core)

VI.A.2.c)(1)(a) The program must have clear guidelines that delineate which competencies must be demonstrated to determine when a resident can progress to indirect supervision. (Core)

VI.A.2.c)(1)(b) The program director must ensure that clear expectations exist and are communicated to the residents, and that these expectations outline specific situations in which a resident would still require direct supervision. ^(Core)

VI.A.2.c)(2) 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. ^(Core)

VI.A.2.c)(3) Oversight: the supervising physician is available to provide review of procedures/encounters with feedback provided after care is delivered. ^(Core)

VI.A.2.d) 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)

VI.A.2.d)(1) The program director must evaluate each resident's abilities based on specific criteria, guided by the Milestones. ^(Core)

VI.A.2.d)(2) 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)

VI.A.2.d)(3) 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)

VI.A.2.e) Programs must set guidelines for circumstances and events in which residents must communicate with the supervising faculty member(s). ^(Core)

VI.A.2.e)(1) 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)

VI.A.2.f) 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)

VI.B. Professionalism

VI.B.1. Programs, in partnership with their Sponsoring Institutions, must educate residents and faculty members concerning the professional responsibilities of physicians, including their obligation to be appropriately rested and fit to provide the care required by their patients. ^(Core)

VI.B.2. The learning objectives of the program must:

VI.B.2.a) be accomplished through an appropriate blend of supervised patient care responsibilities, clinical teaching, and didactic educational events; ^(Core)

VI.B.2.b) be accomplished without excessive reliance on residents to fulfill non-physician obligations; ^(Core)

VI.B.2.c) ensure manageable patient care responsibilities. ^(Core)

VI.B.3. The program director, in partnership with the Sponsoring Institution, must provide a culture of professionalism that supports patient safety and personal responsibility. ^(Core)

VI.B.4. Residents and faculty members must demonstrate an understanding of their personal role in the:

VI.B.4.a) provision of patient- and family-centered care; ^(Outcome)

VI.B.4.b) safety and welfare of patients entrusted to their care, including the ability to report unsafe conditions and adverse events; ^(Outcome)

Background and Intent: *This requirement emphasizes that responsibility for reporting unsafe conditions and adverse events is shared by all members of the team and is not solely the responsibility of the resident.*

VI.B.4.c) assurance of their fitness for work, including; ^(Outcome)

VI.B.4.c)(1) management of their time before, during, and after clinical assignments; ^(Outcome)

VI.B.4.c)(2) recognition of impairment, including from illness, fatigue, and substance use, in themselves, their peers, and other members of the health care team. ^(Outcome)

VI.B.4.d) commitment to lifelong learning; ^(Outcome)

VI.B.4.e) monitoring of their patient care performance improvement indicators; (Outcome)

VI.B.4.f) accurate reporting of clinical and educational work hours, patient outcomes, and clinical experience data. (Outcome)

VI.B.5. All residents and faculty members must demonstrate responsiveness to patient needs that supersedes self-interest. This includes 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 provider. (Outcome)

VI.B.6. Programs, in partnership with their Sponsoring Institutions, must provide a professional, equitable, respectful, and civil environment that is free from discrimination, sexual and other forms of harassment, mistreatment, abuse, or coercion of students, residents, faculty, and staff. (Core)

VI.B.7. 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)

VI.C. 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. For example, a culture which encourages covering for colleagues after an illness without the expectation of reciprocity reflects the ideal of professionalism. 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.

VI.C.1. The responsibility of the program, in partnership with the Sponsoring Institution, to address well-being must include:

VI.C.1.a) efforts to enhance the meaning that each resident finds in the experience of being a physician, including protecting time with patients, minimizing non-physician obligations, providing administrative support, promoting progressive autonomy and flexibility, and enhancing professional relationships; ^(Core)

VI.C.1.b) attention to scheduling, work intensity, and work compression that impacts resident well-being; ^(Core)

VI.C.1.c) evaluating workplace safety data and addressing the safety of residents and faculty members; ^(Core)

VI.C.1.d) policies and programs that encourage optimal resident and faculty member well-being; ^(Core)

VI.C.1.e) attention to resident and faculty member burnout, depression, and substance use disorders. The program, in partnership with its Sponsoring Institution, must educate faculty members and residents in identification of the symptoms of burnout, depression, and substance use disorders, including means to assist those who experience these conditions. Residents and faculty members must also be educated to recognize those symptoms in themselves and how to seek appropriate care. The program, in partnership with its Sponsoring Institution, must: ^(Core)

VI.C.1.e)(1) encourage residents and faculty members to alert the program director or other designated personnel or programs when they are concerned that another resident, fellow, or faculty member may be displaying signs of burnout, depression, a substance use disorder, suicidal ideation, or potential for violence; ^(Core)

VI.C.1.e)(2) provide access to appropriate tools for self-screening; ^(Core)

VI.C.1.e)(3) provide 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)

VI.C.2. There are circumstances in which residents may be unable to attend work, including but not limited to fatigue, illness, family emergencies, and parental leave. Each program must allow an appropriate length of absence for residents unable to perform their patient care responsibilities. ^(Core)

VI.C.2.a) The program must have policies and procedures in place to ensure coverage of patient care. ^(Core)

VI.C.2.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 equitably reintegrate them upon return.

VI.D. Fatigue Mitigation

VI.D.1. Programs must:

VI.D.1.a) educate all faculty members and residents to recognize the signs of fatigue and sleep deprivation; ^(Core)

VI.D.1.b) educate all faculty members and residents in alertness management and fatigue mitigation processes; ^(Core)

VI.D.1.c) encourage residents to use fatigue mitigation processes to manage the potential negative effects of fatigue on patient care and learning. ^(Detail)

VI.D.2. Each program must ensure continuity of patient care, consistent with the program's policies and procedures, if a resident may be unable to perform their patient care responsibilities due to excessive fatigue. ^(Core)

VI.D.3. 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)

VI.E. Clinical Responsibilities, Teamwork, and Transitions of Care

VI.E.1. 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)

VI.E.2. Teamwork

Residents must care for patients in an environment that maximizes communication. This must include the opportunity to work as a member of effective interprofessional teams that are appropriate to the delivery of care in the specialty and larger health system. ^(Core)

VI.E.3. Transitions of Care

VI.E.3.a) Programs must design clinical assignments to optimize transitions in patient care, including their safety, frequency, and structure. ^(Core)

VI.E.3.b) Programs, in partnership with their Sponsoring Institutions, must ensure and monitor effective, structured hand-over processes to facilitate both continuity of care and patient safety. ^(Core)

VI.E.3.c) Programs must ensure that residents are competent in communicating with team members in the hand-over process. ^(Outcome)

VI.E.3.d) Programs and clinical sites must maintain and communicate schedules of attending physicians and residents currently responsible for care. ^(Core)

VI.E.3.e) Each program must ensure continuity of patient care, consistent with the program's policies and procedures, in the event that a resident may be unable to perform their patient care responsibilities due to excessive fatigue or illness, or family emergency. ^(Core)

VI.F. 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.

VI.F.1. 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, inclusive of all in-house clinical and educational activities and clinical work done from home. ^(Core)

VI.F.2. Mandatory Time Free of Clinical Work and Education

VI.F.2.a) The program must design an effective program structure that is configured to provide residents with educational opportunities, as well as reasonable opportunities for rest and personal well-being. ^(Core)

VI.F.2.b) Residents should have eight hours off between scheduled clinical work and education periods. ^(Detail)

VI.F.2.b)(1) 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 must occur within the context of the 80-hour and the one-day-off-in-seven requirements. ^(Detail)

VI.F.2.c) Residents must have at least 14 hours free of clinical work and education after 24 hours of in-house call. ^(Core)

VI.F.2.d) 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)

VI.F.3. Maximum Clinical Work and Education Period Length

VI.F.3.a) Clinical and educational work periods for residents must not exceed 24 hours of continuous scheduled clinical assignments. ^(Core)

VI.F.3.a)(1) 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. ^(Core)

VI.F.3.a)(1)(a) Additional patient care responsibilities must not be assigned to a resident during this time. ^(Core)

VI.F.4. Clinical and Educational Work Hour Exceptions

VI.F.4.a) 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:

VI.F.4.a)(1) to continue to provide care to a single severely ill or unstable patient; ^(Detail)

VI.F.4.a)(2) humanistic attention to the needs of a patient or family; ^(Detail)

VI.F.4.a)(3) to attend unique educational events. ^(Detail)

VI.F.4.b) These additional hours of care or education will be counted toward the 80-hour weekly limit. ^(Detail)

VI.F.5. Moonlight

Residents are not permitted to moonlight. ^(Core)

VI.F.6. In-House Night Float

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

VI.F.7. 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)

VI.F.7.a) Relief from after-hours or on-call duties granted to residents, at the program director's discretion, should not exceed one month preceding the final certifying examination.

VI.F.8. At-Home Call

VI.F.8.a) Time spent on patient care activities by residents on at-home call must count toward the 80-hour maximum weekly limit. ^(Core)

VI.F.8.b) Residents are permitted to return to the hospital while on at-home call to provide direct care for new or established patients. These hours of inpatient patient care must be included in the 80-hour maximum weekly limit. ^(Detail)

*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.

Acknowledgement

A special gratitude to the Diagnostic Radiology Scientific Committee for their contribution in preparing NIHS Diagnostic Radiology Residency Program Requirements.

Chairman:

Dr. Manzoor Ahmed

Members:

Dr. Abdulla Al Remeithi

Dr. Ghufran Aref Saeed

Dr. Asma Khamas

Dr. Ayoub Ahmad Abedzadeh

Dr. Esat Memisoglu

Dr. Fayza AlZaabi

Dr. Karuna M Das

Dr. Klaus Gorkom

Dr. Usama Al Bastaki

Dr. Yauhen Statsenko

