NATIONAL INSTITUTE FOR HEALTH SPECIALITIES

NIHS Program Requirements for Specialty Education in Clinical Genetics (Fellowship in Clinical Genetics)

The Emirati Board in Clinical Genetics 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.

Issue Date: 20/04/2022

Draft Version 1

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Introduction

Int. A. Preamble

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

Graduate medical education transforms medical students 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. Practice patterns established during graduate medical education persist many years later.

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 fellows to attain the knowledge, skills, attitudes, and empathy required for autonomous 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 values the strength that a diverse group of physicians brings to medical care.

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

Int. B. Definition of Specialty

Clinical genetics specialists provide comprehensive diagnostic, management, treatment, risk assessment, interpretation of genetic and genomic testing, and genetic counseling services for patients who have or are at risk for having genetic disorders or disorders with a genetic component.

Int. C Length of educational program

The educational program in Clinical Genetics must be 36 months in length. (Core)

I. Oversight

I.A. Sponsoring Institution

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

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

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

I.B. Participating Sites

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

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 fellow education during the assignment; (Core)

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

I.B.2.a)(6) specify the responsibilities for teaching, supervision, and formal evaluation of fellows. (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 director, who is accountable for fellow education at that site, in collaboration with the program director. (Core)

Background and Intent: *While all fellow programs must be sponsored by a single NIHS-accredited Sponsoring Institution, many programs will utilize other clinical settings to provide required or elective training experiences. At times it is appropriate to utilize community sites that are not owned by or affiliated with the Sponsoring Institution. Some of these sites may be remote for geographic, transportation, or communication issues. When utilizing such sites, the program must ensure the quality of the educational experience. The requirements under I.B.3. are intended to ensure that this will be the case.*

I.B.4. The program director must submit any additions or deletions of participating sites routinely providing an educational experience, required for all fellow, of one-month full time equivalent (FTE) or more through the NIHS Accreditation Data System (ADS). (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, 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 fellow education. (Core)

I.D.1.a) Laboratory facilities must include a clinical cytogenetics and genomics laboratory, a clinical biochemical genetics laboratory, and a clinical molecular genetics and genomics laboratory. (Core)

I.D.1.b) Clinical facilities must include space for patient care activities and facilities for record storage and retrieval. (Core)

I.D.1.c) Education facilities must include office space, meeting rooms, classrooms, laboratory space, and research facilities. (Core)

I.D.1.d) Fellows should have access to computer-based genetic diagnostic systems and audiovisual resources. (Core)

I.D.2. The program, in partnership with its Sponsoring Institution, must ensure healthy and safe learning and working environments that promote fellow 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 fellows with proximity appropriate for safe patient care; (Core)

Background and Intent: *Care of patients within a hospital or health system occurs continually through the day and night. Such care requires that fellow function at their peak abilities, which requires the work environment to provide them with the ability to meet their basic needs within proximity of their clinical responsibilities.*

Access to food and rest are examples of these basic needs, which must be met while fellows are working. Fellows should have access to refrigeration where food may be stored. Food should be available when fellows are required to be in the hospital overnight. Rest facilities are necessary, even when overnight call is not required, to accommodate the fatigued fellow.

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 fellows 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 fellow 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 fellow and the fellow's family.*

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

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

I.D.3. Fellows 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 fellows appointed to the program. (Core)

I.D.4.a) There should be patients of all ages and both sexes, including obstetric patients, with a wide range of genetic disorders and disorders with a genetic component. (Core)

I.D.4.a)(1) This must include at least 300 different patients or families per fellow in a three-year period. (Core)

I.D.4.a)(2) Patients and families must be seen in both outpatient and inpatient settings. (Core)

I.E. Other Learners and Other Care Providers

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

I.E.1. The program must report circumstances when the presence of other learners has interfered with the fellows' education to the DIO and 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 enriches the learning environment. Programs have a responsibility to monitor the learning environment to ensure that fellows' 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 (preferably a core faculty) appointed as program director with authority and accountability for the overall program, including compliance with all applicable program requirements and approved by the NIHS Central Accreditation Committee. (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)

Background and Intent: *While the NIHS recognizes the value of input from numerous individuals in the management of a fellow, a single individual must be designated as program director and made responsible for the program. This individual will have dedicated time for the leadership of the fellowship, and it is this individual's responsibility to communicate with the fellows, faculty members, DIO, GMEC, and the NIHS. The program director's nomination is reviewed and approved by the GMEC. Final approval of program directors resides with the Central Accreditation Committee.*

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 Fellowship 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 no less than 30 percent FTE of non-clinical time to the administration of the program. (Core)

Background and Intent: *Thirty percent FTE is defined as one-and-a-half (1.5) 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 have at least three years of documented educational and/or administrative experience, or qualifications acceptable to the NIHS Central Accreditation Committee; Preferred to have been core faculty in the same or another Clinical Genetics Fellowship Program for at least one year and have sub-specialized training or experience in Clinical Genetics; (Core)

Background and Intent: *Leading a program requires knowledge and skills that are established during fellowship and subsequently further developed. The time period from completion of fellowship 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.

II.A.3.b) must be licensed as consultant and have at least three years post structured clinical fellowship education with documented experience in Clinical Genetics subspecialty, or with a specialty qualification that are acceptable to the Central Accreditation Committee; (Core)

II.A.3.b)(1) The Central Accreditation Committee accepts only board certification in clinical genetics or equivalent. (Core)

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

II.A.3.d) must include ongoing clinical activity; (Core)

***Background and Intent**: A program director is a role model for faculty members and fellows. 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 fellows.*

II.A.4. Program Director Responsibilities

The program director must have responsibility, authority, and accountability for: administration and operations; teaching and scholarly activity; fellow recruitment and selection, evaluation, and promotion of fellows, and disciplinary action; supervision of fellows; and fellow 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 fellows in addition to fulfilling the technical aspects of the role. As fellows 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)

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

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

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

II.A.4.a)(4) develop and oversee a process to evaluate candidates prior to approval as program faculty members for participation in the fellowship program education and at least annually thereafter, as outlined in V.B.; (Core)

II.A.4.a)(5) have the authority to approve program faculty members for participation in the fellowship program education at all sites; (Core)

II.A.4.a)(6) have the authority to remove program faculty members from participation in the fellowship program education at all sites; (Core)

II.A.4.a)(7) have the authority to remove fellows 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 fellows effectively role model the Core Competencies. Working with a fellow 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 fellows.*

II.A.4.a)(8) submit accurate and complete information required and requested by the DIO, GMEC, and NIHS. (Core)

II.A.4.a)(9) 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)(10) provide a learning and working environment in which fellows 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)(11) ensure the program's compliance with the Sponsoring Institution's policies and procedures related to grievances and due process; (Core)

II.A.4.a)(12) 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 fellow; (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 fellows.*

II.A.4.a)(13) ensure the program's compliance with the Sponsoring Institution's policies and procedures on employment and non-discrimination; (Core)

II.A.4.a)(13)(a) Fellows must not be required to sign a non-competition guarantee or restrictive covenant. (Core)

II.A.4.a)(14) document verification of program completion for all graduating fellows within 30 days; (Core)

II.A.4.a)(15) provide verification of an individual fellow's completion upon the fellow'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 fellows who have previously completed the program. Fellows who leave the program prior to completion also require timely documentation of their summative evaluation.*

II.A.4.a)(16) obtain review and approval of the Sponsoring Institution's DIO before submitting information or requests to the NIHS, as required in the Institutional Requirements and outlined in the NIHS Program Director's Guide to the Common Program Requirements. (Core)

II.B. Faculty

Faculty members are a foundational element of graduate medical education–faculty members teach fellows how to care for patients. Faculty members provide an important bridge allowing fellows 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, fellows, 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 fellows and themselves.

Background and Intent: *"Faculty" refers to the entire teaching force responsible for educating fellows. 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 fellows must be minimum of 1:1. (Core)

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 fellows; (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 fellows; (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 fellowship 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 is able to make adjustments that improve patient outcomes and care.*

Thoughtful consideration to practice-based analysis improves quality of care, as well as patient safety. This allows faculty members to serve as role models for fellows in practice-based learning.

II.B.2.h) All Faculty members must be practicing/providing clinical service within the specialty for at least 0.5 FTE in one of the training sites. (Core)

II.B.3. Faculty Qualifications

II.B.3.a) Must have specialty license to practice Clinical genetics and acceptable to the Institutional credentialing and privileging committee or authority. (Core)

II.B.3.b) Must hold valid license, required credentials and privileges in the Clinical Genetics Specialty to practice at least in the Primary training site. (Core)

II.B.3.b)(1) Faculty members responsible for fellow education in biochemical genetics must have board certification in biochemical genetics. (Core)

II.B.3.b)(2) Faculty members responsible for fellow education in molecular genetics and genomics must have board certification in clinical molecular genetics and genomics or laboratory genetics and genomics or equivalent. (Core)

II.B.3.b)(3) Faculty members responsible for fellow education in clinical cytogenetics and genomics must have board certification in clinical cytogenetics and genomics or laboratory genetics and genomics or equivalent. (Core)

II.B.3.b)(4) Faculty members responsible for fellow education during laboratory rotations must meet local and federal requirements for directing a clinical laboratory. (Core)

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

II.B.3.c)(1) have current certification in the specialty by the Board certification or possess qualifications judged acceptable to the Central Accreditation Committee; (Core)

II.B.3.c)(2) have current medical licensure and appropriate medical staff appointment. (Core)

II.B.3.d) Any non-physician faculty members who participate in fellowship 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 fellows by non-physician educators enables the fellow to better manage patient care and provides valuable advancement of the fellows' knowledge. Furthermore, other individuals contribute to the education of the fellow 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 fellows, the program director may designate the individual as a program faculty member or a program core faculty member.*

II.B.4. Core Faculty

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

***Background and Intent**: Core faculty members are critical to the success of fellow education. They support the program leadership in developing, implementing, and assessing curriculum and in assessing fellows' 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 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 three core faculty members, including the program director, who are members of the medical staff of participating sites, and at least two of whom must have board certification in clinical genetics or equivalent. (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 by the*

NIHS. 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 fellows.

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)

II.D.1. Genetic counselors, nurses, nutritionists, and other health care professionals who are involved in the provision of clinical genetics services must be available to work on a regular basis with fellows. (Detail)†

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. Fellow Appointments

III.A. Eligibility Requirements

Refer to NIHS criteria included in the Training Bylaw.

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) Graduation from a medical school which is recognized by Ministry of Higher Education (Core)

III.A.1.b) Pass board certification exam in Pediatric or Internal Medicine or Obstetrics-gynecology or Neurology, (Core)

III.A.1.c) Holding a full and unrestricted license to practice medicine in the United Arab Emirates. (Core)

III.A.2. All prerequisite post-graduate clinical education required for initial entry or transfer into NIHS-accredited fellowship programs must

be completed in a NIHS-accredited fellowship programs, or in fellowship programs approved by the NIHS. (Core)

III.A.2.a) Fellowship programs must receive verification of each fellow's level of competency in the required clinical field using Milestones evaluations from the prior training program upon matriculation. (Core)

III.A.2.b)(1) Previous patient care experience must include responsibility, under proper supervision and commensurate with their ability, for decision-making and for direct patient care in all settings. (Core)

III.A.2.b)(1)(a) These responsibilities should include taking a complete history, performing a complete physical examination, ordering and interpreting appropriate diagnostic testing, the planning of care, and the writing of orders, progress notes and relevant records, subject to review and approval by attending physicians. (Detail)

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

II.A.3. A physician who has completed a fellowship program that was not accredited by NIHS, or ACGME-I (with Advanced Specialty Accreditation) may enter an NIHS accredited Fellowship 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 final year based on Milestones evaluations at the NIHS-accredited program. (Core)

III.B. Number of Fellows

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

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

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

III.C. Fellow Transfers

The program must obtain verification of previous educational experiences and a summative competency-based performance evaluation prior to acceptance of a transferring fellows, 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.

In addition, the program 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. While programs must demonstrate substantial compliance with the Common and Specialty-specific Program Requirements, it is recognized that within this framework, programs may place different emphasis on research, leadership, public health, etc. It is expected that the program aims will reflect the nuanced program-specific goals for it and its graduates; for example, it is expected that a program aiming to prepare physician-scientists will have a different curriculum from one focusing on community health.

IV.A. Curriculum Components

III.A. The 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.1.a) The program's aims must be made available to program applicants, fellows, and faculty members. (Core)

IV.A.2. Competency-based goals and objectives for each educational experience designed to promote progress on a trajectory to autonomous practice. These must be distributed, reviewed, and available to fellows and faculty members. (Core)

Background and Intent: *The trajectory to autonomous practice is documented by Milestones evaluation. The Milestones detail the progress of a fellow in attaining skill in each competency domain. They are developed by each specialty group and allow evaluation based on observable behaviors. Milestones are considered formative and should be used to identify learning needs. This may lead to focused or general curricular revision in any given program or to individualized learning plans for any specific fellow.*

IV.A.3. Delineation of fellow responsibilities for patient care, progressive responsibility for patient management, and graded supervision (Core)

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

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

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

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

IV.A.5. Advancement of fellows' knowledge of ethical principles foundational to medical professionalism; (Core)

IV.A.6. Advancement in the fellows' knowledge of the basic principles of scientific inquiry, including how research is designed, conducted, evaluated, explained 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

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

IV.B.1.a)(1) Fellows 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)

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

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;

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

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

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

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

IV.B.1.b)(1)(a)(i) completing comprehensive genetics-focused physical examinations; (Core)

IV.B.1.b)(1)(a)(ii) selecting diagnostic studies including interpreting laboratory data generated from biochemical genetic, cytogenetic, molecular genetics and genomic analyses; (Core)

IV.B.1.b)(1)(a)(iii) conducting medical interviews including taking and interpreting a complete family history, including construction of a pedigree. (Core)

IV.B.1.b)(1)(a)(iv) making informed decisions about diagnostics and therapeutic interventions based on patient and family information and preferences, up-to-date scientific evidence, and clinical judgement by: (Core)

IV.B.1.b)(1)(a)(iv)(a) appropriately using consultants and referrals; (Core)

IV.B.1.b)(1)(a)(iv)(b) demonstrating awareness of the limits in their own knowledge and expertise; (Core)

IV.B.1.b)(1)(a)(iv)(c) demonstrating effective and appropriate clinical problem-solving skills; (Core)

IV.B.1.b)(1)(a)(iv)(d) using information technology to support patient care decisions and patient education. (Core)

IV.B.1.b)(1)(a)(v) developing and implementing patient management plans, including: (Core)

IV.B.1.b)(1)(a)(v)(a) prescribing medications and performing medical interventions essential for the care of patients with heritable disorders; (Core)

IV.B.1.b)(1)(a)(v)(b) assisting patients in accomplishing their personal health goals. (Core)

IV.B.1.b)(2) Fellows 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) Fellows must demonstrate competence in collection of tissues, including buccal swabs and skin biopsies. (Core)

IV.B.1.c) Medical Knowledge

Fellows 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) Fellows must demonstrate expertise in their knowledge and use of current medical information and scientific evidence for patient care, including: (Core)

IV.B.1.c)(1)(a) results from genetics and genomics laboratory tests; (Core)

IV.B.1.c)(1)(b) quantitative risk assessment; (Core)

IV.B.1.c)(1)(c) Fellow must be familiar with bioinformatics and understand limitation of genomic testing(Core)

IV.B.1.c)(2) Fellows must demonstrate expertise in their knowledge of:

IV.B.1.c)(2)(a) basic economic and business principles needed to function effectively in the practice setting; (Core)

IV.B.1.c)(2)(b) biochemical genetics; (Core)

IV.B.1.c)(2)(c) cytogenetics and genomics; (Core)

IV.B.1.c)(2)(d) Mendelian and non-Mendelian genetics; (Core)

IV.B.1.c)(2)(e) molecular genetics and genomics; (Core)

IV.B.1.c)(2)(f) population and quantitative genetics. (Core)

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

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

IV.B.1.d)(1) Fellows 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.d)(1)(h) obtaining and using information about a specific patient population in the community to improve one's own practice.

IV.B.1.e) Interpersonal and Communication Skills

Fellows 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) Fellows 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)(b) communicating effectively with physicians, other health professionals and health-related agencies; (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) creating and sustaining a professional and therapeutic relationship with patients and their families; (Core)

IV.B.1.e)(1)(h) counseling and educating patients and their families in order to assist them to: (Core)

IV.B.1.e)(1)(h)(i) take measures needed to enhance or maintain health and function, and to prevent disease and injury; (Core)

IV.B.1.e)(1)(h)(ii) participate actively in their care; (Core)

IV.B.1.e)(1)(h)(iii) make informed decisions, interpret risk assessment, and understand the use of predictive testing. (Core)

IV.B.1.e)(2) Fellows must learn to communicate with patients and families to partner with them to assess their care goals, including, when appropriate, end-of-life goals. (Core)

IV.B.1.f) Systems-based Practice

Fellows 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) Fellows 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)(1)(h) assisting patients in navigating the complexities of a health care system; (Core)

IV.B.1.f)(1)(i) promoting optimal patient health and function, and preventing disease and injury in populations. (Core)

IV.B.1.f)(2) Fellows 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 fellow 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.a)(1) adequate supervision during times of transition and hand-offs; (Core)

IV.C.1.a)(2) continuity of supervision at all participating sites; (Core)

IV.C.1.a)(3) exposure to and sufficient time in specialty clinics for fellows. (Core)

IV.C.2. The didactic curriculum must include:

IV.C.2.a) Clinical teaching conferences distinct from the basic science lectures and didactic sessions, which should include formal didactic sessions on clinical laboratory topics, medical genetics and genomics rounds, journal clubs, and follow-up conferences for genetic and genomics clinics; (Core)

IV.C.2.b) Lectures or other didactic sessions, on the following topics: (Core)

IV.C.2.b)(1) basic mechanisms of inheritance, including sex chromosomes, autosomes, and mitochondrial DNA; (Core)

IV.C.2.b)(2) basic molecular biology techniques pertinent to clinical testing and understanding genetics and genomics research; (Core)

IV.C.2.b)(3) Bayesian analysis and other methods of genetic risk assessment; (Core)

IV.C.2.b)(4) behavior of genes in a population, including Hardy- Weinberg equilibrium; (Core)

IV.C.2.b)(5) bioinformatic approaches to interpreting molecular test results, including methods to assign causation to novel findings; (Core)

IV.C.2.b)(6) the cell cycle and molecular genetics of cancer; (Core)

IV.C.2.b)(7) DNA, RNA, and protein chemistry, including DNA repair; (Core)

IV.C.2.b)(8) gene expression and mechanisms of regulation of genes and genomes, including epigenetic regulation; (Core)

IV.C.2.b)(9) genetic counseling; (Core)

IV.C.2.b)(10) genetic linkage, mapping, and association studies; (Core)

IV.C.2.b)(11) human embryology and development; (Core)

IV.C.2.b)(12) inheritance of complex traits and genetic variation; (Core)

IV.C.2.b)(13) mechanisms of chromosomal rearrangement; (Core)

IV.C.2.b)(14) molecular organization of the genome, including molecular evolution mechanisms; (Core)

IV.C.2.b)(15) principles of biochemical genetics and metabolism; (Core)

IV.C.2.b)(16) principles of replication, recombination and segregation of alleles during meiosis. (Core)

IV.C.3. Research seminars should be provided as part of the educational experience. (Detail)

IV.C.4. Fellow experiences must include:

IV.C.4.a) At least 18 months of broad-based, clinically oriented medical genetics and genomics experiences. (Core)

IV.C.4.a)(1) This must include experiences with pediatric, adult, prenatal, and cancer patients. (Core)

IV.C.4.a)(2) Fellows must have experience with metabolic patients in both inpatient and outpatient settings. (Core)

IV.C.4.b) A minimum of two continuous weeks in each of the required laboratory settings. (Core)

IV.C.4.b)(1) Experiences in the clinical biochemical genetics laboratory must include:

IV.C.4.b)(1)(a) interpreting the results of acylcarnitine analysis; (Core)

IV.C.4.b)(1)(b) interpreting the results of analyses of enzymes by any methodology; (Core)

IV.C.4.b)(1)(c) interpreting the results of tests for plasma amino acid and urine organic acid; (Core)

IV.C.4.b)(1)(d) observing diagnostic techniques utilized by the laboratory. (Core)

IV.C.4.b)(2) Experiences in the clinical cytogenetics and genomics laboratory should include:

IV.C.4.b)(2)(a) observing G-banded karyotypes and interphase and metaphase cells using fluorescence in situ hybridization (FISH); (Detail)

IV.C.4.b)(2)(b) observing results of different methodologies to assess how copy number gains and losses can be interpreted; (Detail)

IV.C.4.b)(2)(c) observing all diagnostic techniques utilized by the laboratory. (Detail)

IV.C.4.b)(3) Experiences in the clinical molecular genetics and genomics laboratory should include:

IV.C.4.b)(3)(a) exposure to quality assurance/quality control procedures; (Detail)

IV.C.4.b)(3)(b) interpreting the results of genotyping, including techniques to assess for known variants; (Detail)

IV.C.4.b)(3)(c) interpreting the results of sequencing techniques used to discover known and novel variants; (Detail)

IV.C.4.b)(3)(d) interpreting the results of testing for copy number gains and losses, including techniques to detect deletions, duplications, and other copy number variations or changes in gene expression; (Detail)

IV.C.4.b)(3)(e) observing how the results of genomic testing may be interpreted; (Detail)

IV.C.4.b)(3)(f) observing all diagnostic techniques utilized by the laboratory. (Detail)

IV.C.4.b)(4) Fellows must not be assigned clinical responsibilities at the same time they are participating in the required laboratory experiences. (Core)

IV.C.4.c) Fellows must participate in the working conferences of laboratories, as well as in discussion of laboratory data during other clinical conferences. (Core)

IV.C.4.d) Fellows must be directly involved in providing continuity of patient care, including decision making regarding that care. (Core)

IV.C.4.e) Fellows must have responsibility for direct patient care in all settings, including planning, management, and treatment,

both diagnostic and therapeutic, subject to review and approval by the physician faculty. (Core)

IV.C.4.f) Fellows must enter the Case Log System all cases in which they directly participated. (Core)

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 fellow participation in scholarly activities. Scholarly activities may include discovery, integration, application, and teaching.

The NIHS recognizes the diversity of fellows and anticipates that programs prepare physicians for a variety of roles, including clinicians, scientists, and educators. It is expected that the program's scholarship will reflect its mission(s) and aims, and the needs of the community it serves. For example, some programs may concentrate their scholarly activity on quality improvement, population health, and/or teaching, while other programs might choose to utilize more classic forms of biomedical research as the focus for scholarship.

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 fellow and faculty involvement in scholarly activities. (Core)

IV.D.1.c) The program must advance fellows' 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 fellows to utilize learning resources to create a differential diagnosis, a diagnostic algorithm, and treatment plan*
- *Challenging the evidence that the fellows 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 fellow learning by encouraging them to teach using a scholarly approach*

- *The scholarly approach to patient care begins with curiosity, is grounded in the principles of evidence-based medicine, expands the knowledge base through dissemination, and develops the habits of lifelong learning by encouraging fellows to be scholarly teachers.*

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

IV.D.2.b) The program must demonstrate dissemination of scholarly activity within and external to the program by the following methods: (Core)

IV.D.2.b)(1) faculty participation in grand rounds, posters, workshops, quality improvement presentations, podium presentations, grant leadership, non-peer- reviewed print/electronic resources, articles or publications, book chapters, textbooks, webinars, service on professional committees, or serving as a journal reviewer, journal editorial board member, or editor; (Outcome)‡

IV.D.2.b)(2) peer-reviewed publication. (Outcome)

IV.D.3. Fellow Scholarly Activity

IV.D.3.a) While in the program, fellows 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) Fellows/Residents must participate in scholarly project. (Core)

IV.D.3.b)(1) Fellows/Residents must complete a scholarly project relevant to the specialty which was conducted under direct 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. Fellow Evaluation

V.A.1. Feedback and Evaluation

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

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

- *fellows identify their strengths and weaknesses and target areas that need work*
- *program directors and faculty members recognize where fellows are struggling and address problems immediately*

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

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

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

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

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.b)(3) Longitudinal experiences, such as continuity clinic in the context of other clinical responsibilities, must be evaluated at least every three months and at completion. (Core)

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 fellow performance and improvement toward unsupervised practice; (Core)

V.A.1.c)(3) ensure that fellows take an in-service examination every year. (Core)

V.A.1.c)(3)(a) Use of the results must be limited to identifying areas that need improvement both for

individual fellows and for program curriculum areas that need improvement. (Detail)

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 fellow their documented semi-annual evaluation of performance, including progress along 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 fellows in developing individualized learning plans to capitalize on their strengths and identify areas for growth; (Core)

V.A.1.d)(3) develop plans for fellows failing to progress, following institutional policies and procedures. (Core)

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

V.A.1.(f) Resident Promotion:

V.A.1.f)(1) At least annually, there must be a summative evaluation of each fellow that includes their readiness to progress to the next year of the program. (Core)

V.A.2. Final Evaluation

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

V.A.2.a)(1) The Clinical Genetics specific Milestones, and when applicable the specific Case Logs, must be used as tools to document performance and verify that the fellow 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 Clinical Genetics subspeciality. (Core)

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

V.A.2.a)(2)(a) become part of the fellow'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 fellow 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 fellow 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) At a minimum, the Clinical Competency Committee must include three members of the program faculty, at least one of whom is a core faculty member. (Core)

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 fellows. (Core)

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

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

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

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

V.A.3.b)(3) meet prior to the fellows' semi-annual evaluations and advise the program director regarding each fellow'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, professionalism, and scholarly activities. (Core)

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

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

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

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 fellow. (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 self-determined goals and progress toward meeting them; (Core)

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

V.C.1.b) (4) review of the current operating environment to identify strengths, challenges, opportunities, and threats as 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) 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 fellow and faculty:

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

V.C.1.c)(5)(b) recruitment and retention;(Core)

V.C.1.c)(5)(c) workforce diversity; (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) NIHS fellow and Faculty Surveys; (Core)

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

V.C.1.c)(6) aggregate fellow:

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

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

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

V.C.1.c)(6)(d) graduate performance. (Core)

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

V.C.1.c)(7)(a) 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 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 fellows; (Core)

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

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

V.C.2.a) A summary of the Self-Study must be submitted to the DIO. (Core)

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

The program director should encourage all eligible program graduates to take the certifying examination offered by National Institute for Health Specialties (NIHS). (Core)

V.C.3.a) If program offers an annual written exam, in the preceding three years, the program's aggregate pass rate of those taking the examination for the first time must be higher than the bottom fifth percentile of programs in that specialty. (Outcome)

V.C.3.b) If program offers an annual oral exam, in the preceding three years, the program's aggregate pass rate of those taking the examination for the first time must be higher than the bottom fifth percentile of programs in that specialty. (Outcome)

V.C.3.c) For each of the exams referenced in previous, any program whose graduates over the time specified in the requirement have achieved an 80 percent pass rate will have met this requirement, no matter the percentile rank of the program for pass rate in that specialty. (Outcome)

V.C.3.d) Programs must report, board certification status annually for the cohort of board-eligible fellows that graduated seven years earlier. (Core)

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

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

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

VI. The Learning and Working Environment

Fellowship 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 fellows today

- Excellence in the safety and quality of care rendered to patients by today's fellows 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, fellows, 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 fellows 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 fellows 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.

Fellows 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 fellows will apply these skills to critique their future unsupervised practice and effect quality improvement measures.

It is necessary for fellows 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 to identify areas for improvement.

VI.A.1.a)(1)(a) The program, its faculty, 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, interprofessional, 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) 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 Fellows must participate as team members in real and/or simulated interprofessional 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) Fellow 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 fellows to develop and apply.

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

VI.A.1.a)(4)(b) Fellows 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) 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.

Fellows 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.

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

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.

Fellows must have the opportunity to participate in interprofessional quality improvement activities. (Core)

This should include activities aimed at reducing health care disparities. (Detail)

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 fellow'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 (or licensed independent practitioner as specified by the applicable Central Accreditation Committee directive) who is responsible and accountable for the patient's care. (Core)

VI.A.2.a)(1)(a) Licensed independent practitioners who may have primary responsibility for patient care must be physicians. (Detail)

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

VI.A.2.a)(1)(c) Fellows 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 fellow. Other portions of care provided by the fellow can be adequately supervised by the appropriate availability of the supervising faculty member, fellow, 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 fellow-delivered care with feedback.

Background and Intent: *Appropriate supervision is essential for patient safety and high-quality teaching. Supervision is also contextual. There is tremendous diversity of fellow patient interactions, education and training locations, and fellow skills and abilities even at the same level of the educational program. The degree of supervision is expected to evolve progressively as a fellow gain more experience, even with the same*

patient condition or procedure. All fellows have a level of supervision commensurate with their level of autonomy in practice; this level of supervision may be enhanced based on factors such as patient safety, complexity, acuity, urgency, risk of serious adverse events, or other pertinent variables.

VI.A.2.b)(1) The program must demonstrate that the appropriate level of supervision in place for all fellows is based on each fellow'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 fellow 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 fellow during the key portions of the patient interaction; (Core)

VI.A.2.c)(1)(a) Fellows in their first year must initially be supervised directly, only as described in VI.A.2.c)(1). (Core)

VI.A.2.c)(1)(b) Fellow performance of procedures must be done under direct supervision where the supervising physician is physically present. (Core)

VI.A.2.c)(1)(b)(i) the supervising physician and/or patient is not physically present with the fellow and the supervising physician is concurrently monitoring the patient care through appropriate telecommunication technology. (Core)

VI.A.2.c)(1)(b)(ii) Direct supervision through appropriate telecommunication technology must be limited to history-taking and patient examination, assessment, and counseling. (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 fellow 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 fellow'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 fellow based on the needs of the patient and the skills of each fellow. (Core)

VI.A.2.d)(3) Senior fellows should serve in a supervisory role to junior fellows in recognition of their progress toward independence, based on the needs of each patient and the skills of the individual fellow. (Detail)

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

VI.A.2.e)(1) Each fellow must know the limits of their scope of authority, and the circumstances under which the fellow 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 fellow and to delegate to the fellow 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 fellows 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 fellows to fulfill non-physician obligations; (Core)

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

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. Fellows 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 fellow.*

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

***Background and Intent**: This requirement emphasizes the professional responsibility of faculty members and fellows to arrive for work adequately rested and ready to care for patients. It is also the responsibility of faculty members, fellows, and other members of the care team to be observant, to intervene, and/or to escalate their concern about fellow and faculty member fitness for work, depending on the situation, and in accordance with institutional policies.*

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 fellows 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, fellows, faculty, and staff. (Core)

VI.B.7. Programs, in partnership with their Sponsoring Institutions, should have a process for education of fellows 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 fellowship training.

Fellows 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 fellow 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 model constructive behaviors and prepares fellows with the skills and attitudes needed to thrive throughout their careers.

***Background and Intent**: The NIHS is committed to addressing physician well-being for individuals and as it relates to the learning and working environment. The creation of a learning and working environment with a culture of respect and accountability for physician well-being is crucial to physicians' ability to deliver the safest, best possible care to patients.*

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 fellow 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 fellow well-being; (Core)

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

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

***Background and Intent**: Well-being includes having time away from work to engage with family and friends, as well as to attend to personal needs and to one's own health, including adequate rest, healthy diet, and regular exercise.*

VI.C.1.d)(1) Fellows must be given the opportunity to attend medical, mental health, and dental care appointments, including those scheduled during their working hours. (Core)

***Background and Intent**: The intent of this requirement is to ensure that fellows can access medical and dental care, including mental health care, at times that are appropriate to their individual circumstances. Fellows must be. provided with time away from the program as needed to access care, including appointments scheduled during their working hours.*

VI.C.1.e) attention to fellow and faculty member burnout, depression, and substance use disorders. The program, in partnership with its Sponsoring Institution, must educate faculty members and fellows in identification of the symptoms of burnout, depression, and substance use disorders, including means to assist those who experience these conditions. fellows 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)

***Background and Intent**: Programs and Sponsoring Institutions are encouraged to review materials to create systems for identification of burnout, depression, and substance use disorders.*

VI.C.1.e)(1) encourage fellows 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, provide access to confidential, affordable mental health assessment, counseling, and treatment. (Core)

VI.C.2. There are circumstances in which fellows 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 fellows 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 fellow who is or was unable to provide the clinical work. (Core)

Background and Intent: *Fellows 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 fellows to recognize the signs of fatigue and sleep deprivation; (Core)

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

VI.D.1.c) encourage fellows 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 fellow 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 fellows 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 fellow must be based on fellow level, patient safety, fellow ability, severity and complexity of patient illness/ condition, and available support services. (Core)

VI.E.1.a) The workload for a fellow at any level must be no more than four patients with a confirmed diagnosis of an inborn error of intermediary metabolism in an intensive care unit (ICU) setting, or six patients with a confirmed diagnosis of an inborn error of intermediary metabolism in a non-ICU setting. (Detail)

VI.E.2. Teamwork

VI.E.2.a) Fellows 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.2.b) Dietitians, genetic counselors, laboratory directors, nurses, technologists, and other providers and allied health professionals must be part of the interprofessional team. (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 fellows 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 fellows 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 fellow 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 fellows 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, clinical work done from home, and all moonlighting. (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 fellows with educational opportunities, as well as reasonable opportunities for rest and personal well-being. (Core)

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

VI.F.2.b)(1) There may be circumstances when fellows 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) Fellows must have at least 14 hours free of clinical work and education after 24 hours of in-house call. (Core)

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

VI.F.2.d) Fellows 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 fellow 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 fellow, 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

Fellows 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

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

VI.F.8. At-Home Call

VI.F.8.a) Time spent on patient care activities by fellows on at-home call must count toward the 80-hour maximum weekly limit. The frequency of at-home call is not subject to the every- third night limitation, but must satisfy the requirement for one day in seven free of clinical work and education, when averaged over four weeks. (Core)

VI.F.8.a)(1) At-home call must not be so frequent or taxing as to preclude rest or reasonable personal time for each fellow. (Core)

VI.F.8.b) Fellows 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)

Background and Intent: *At-home call activities that must be counted include responding to phone calls and other forms of communication, as well as documentation, such as entering notes in an electronic health record. Activities such as reading about*

the next day's case, studying, or research activities do not count toward the 80-hour weekly limit.

*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 Clinical Genetics Scientific Committee for their contribution in preparing NIHS Clinical Genetics Fellowship Program Requirements.

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