ACGME Program Requirements for Graduate Medical Education in ~~Endovascular Surgical Neuroradiology~~ Neuroendovascular Intervention

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Contents

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Proposed ACGME Program Requirements for Graduate Medical Education in Neuroendovascular Intervention ~~Endovascular Surgical Neuroradiology~~

Common Program Requirements (Fellowship) are in BOLD

Note: As part of this revision, this subspecialty has been moved from the Common Program Requirements (One-Year Fellowship) to the Common Program Requirements (Fellowship).

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.

Background and Intent: These fellowship requirements reflect the fact that these learners have already completed the first phase of graduate medical education. Thus, the Common Program Requirements (Fellowship) are intended to explain the differences.

Introduction

Int.A. ***Fellowship is advanced graduate medical education beyond a core residency program for physicians who desire to enter more specialized practice. Fellowship-trained physicians serve the public by providing subspecialty care, which may also include core medical care, acting as a community resource for expertise in their field, creating and integrating new knowledge into practice, and educating future generations of physicians. Graduate medical education values the strength that a diverse group of physicians brings to medical care.***

Fellows who have completed residency are able to practice independently in their core specialty. The prior medical experience and expertise of fellows distinguish them from physicians entering into residency training. The fellow's care of patients within the subspecialty is undertaken with appropriate faculty supervision and conditional independence. Faculty members serve as role models of excellence, compassion, professionalism, and scholarship. The fellow develops deep medical knowledge, patient care skills, and expertise applicable to their focused area of practice. Fellowship is an intensive program of subspecialty clinical and didactic education that focuses on the multidisciplinary care of patients. Fellowship education 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.

In addition to clinical education, many fellowship programs advance fellows' skills as physician-scientists. While the ability to create new knowledge within medicine is not exclusive to fellowship-educated physicians, the fellowship experience expands a physician's abilities to pursue hypothesis-driven scientific inquiry that results in contributions to the medical literature and patient care. Beyond the clinical subspecialty

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expertise achieved, fellows develop mentored relationships built on an infrastructure that promotes collaborative research.

Int.B. Definition of Subspecialty

Int.B.1. ~~Endovascular surgical neuroradiology~~ Neuroendovascular intervention is a subspecialty that uses minimally invasive catheter-based technology, radiologic imaging, and clinical expertise to diagnose and treat diseases of the central nervous system, head, neck, and spine. The unique clinical and invasive nature of this subspecialty requires special training and skills.

~~Int.B.2. In this subspecialty, the objective of training is to give fellows an organized, comprehensive, supervised, and full-time educational experience in endovascular surgical neuroradiology.~~

Int.C. Length of Educational Program

~~The program shall offer one year of graduate medical education in endovascular surgical neuroradiology.~~ ~~(Core)~~* The educational program in neuroendovascular intervention must be at least 24 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 ACGME Institutional Requirements.

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

Background and Intent: Participating sites will reflect the health care needs of the community and the educational needs of the 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 group practice, federally qualified health center, or an educational foundation.

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

I.B. Participating Sites

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

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

I.B.1.a) A program in neuroendovascular intervention ~~endovascular surgical neuroradiology~~ must be jointly administered by programs in ~~neurological surgery,~~ diagnostic radiology, neurological surgery, neuroradiology, and child neurology or neurology which are accredited by the ACGME; these programs must be present within the same primary clinical site ~~institution~~. (Core)

I.B.1.a).(1) Exceptions to this requirement will be subject to the review and approval, on a case-by-case basis, by the Review Committees for Neurological Surgery, Neurology, and Radiology. ~~The endovascular surgical neuroradiology program is not intended to replace or duplicate the ACGME-accredited program in neuroradiology.~~

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 10 years; and,** (Core)

I.B.2.a).(2) **be approved by the designated institutional official (DIO).** (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, who is accountable for fellow education for that site, in collaboration with the program director.** (Core)

Background and Intent: While all fellowship programs must be sponsored by a single ACGME-accredited Sponsoring Institution, many programs will utilize other clinical settings to provide required or elective training experiences. At times it is appropriate to utilize community sites that are not owned by or affiliated with the Sponsoring Institution. Some of these sites may be remote for geographic, transportation, or communication issues. When utilizing such sites, the program must designate a faculty member responsible for ensuring the quality of the educational experience. In some circumstances, the person charged with this responsibility may not be physically present at the site, but remains responsible for fellow education occurring at the site. The requirements under I.B.3. are intended to ensure that this will be the case.

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

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

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

I.C. **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 (if present), fellows, faculty members, senior administrative staff members, and other relevant members of its academic community.** (Core)

Background and Intent: It is expected that the Sponsoring Institution has, and programs implement, policies and procedures related to recruitment and retention of minorities underrepresented in medicine and medical leadership in accordance with the Sponsoring Institution's mission and aims. The program's annual evaluation must include an assessment of the program's efforts to recruit and retain a diverse workforce, as noted in V.C.1.c).(5).(c).

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) Equipment and Facilities

I.D.1.a).(1) Modern imaging/procedure rooms and equipment must be available and ~~must~~ permit the performance of all neuroendovascular intervention ~~endovascular surgical neuroradiology~~ procedures. (Core)

I.D.1.a).(2) Rooms in which neuroendovascular intervention ~~endovascular surgical neuroradiology~~ procedures are performed must ~~should~~ be equipped with physiological monitoring and resuscitative equipment. (Core)

I.D.1.a).(2).(a) The following state-of-the-art equipment must be available:

I.D.1.a).(2).(a).(i) magnetic resonance imaging (MRI) scanner equipped with high speed gradients, and perfusion capability; (Core)

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I.D.1.a).(2).(a).(ii) computed tomography (CT) scanner (multi-detector) capable of CT angiography and CT perfusion~~,~~; (Core)

I.D.1.a).(2).(a).(iii) biplane digital subtraction angiography with roadmap and 3-dimensional imaging capability; (Core)

I.D.1.a).(2).(a).(iv) ultrasound~~,~~; and, (Core)

I.D.1.a).(2).(a).(v) radiographic-fluoroscopic room(s). (Core)

I.D.1.a).(3) Facilities for storing catheters, guidewires, contrast materials, embolic agents, and other supplies must be adjacent to or within procedure rooms. (Core)

I.D.1.a).(4) There must be adequate space and facilities for image display and interpretation, and for consultation with other clinicians. (Core)

I.D.1.a).(5) The sites where neuroendovascular intervention ~~endovascular surgical neuroradiology~~ training is conducted must include ~~appropriate~~ inpatient, outpatient, emergency, and intensive care facilities for direct fellow involvement in providing comprehensive neuroendovascular intervention ~~endovascular surgical neuroradiology~~ care. (Core)

I.D.1.a).(6) The Sponsoring Institution should provide laboratory facilities to support research projects pertinent to endovascular therapies. (Detail)†

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 fellows 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.

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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, as outlined in VI.C.1.d).(1).

I.D.2.d) **security and safety measures appropriate to the participating site; and, (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 subspecialty-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) The program must ensure ~~In order to ensure adequate training, the institution's~~ an adequate patient population with ~~must have~~ a diversity of illnesses from which fellows may obtain a broad experience in neuroendovascular intervention ~~endovascular surgical neuroradiology~~ therapy ~~can be obtained~~. (Core)

I.D.4.b) The case material should encompass a range of diseases, including: (Core)

I.D.4.b).(1) a minimum of 250 therapeutic neuroendovascular procedures per year per fellow; (Core)

I.D.4.b).(2) aneurysms; (Core)

I.D.4.b).(3) arteriovenous malformation; (Core)

I.D.4.b).(4) atherosclerotic disease of the cervical vessels; (Core)

I.D.4.b).(5) occlusive vascular disease and acute infarction; (Core)

I.D.4.b).(6) intracranial neoplasms; (Core)

I.D.4.b).(7) vascular anomalies of the head and neck; (Core)

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I.D.4.b).(8) neoplasms of the head and neck; (Core)

I.D.4.b).(9) vascular anomalies of the spine; (Core)

I.D.4.b).(10) neoplasms of the spine; and, (Core)

I.D.4.b).(11) traumatic vascular lesions of the central nervous system (CNS), head, neck, and spine. (Core)

~~I.D.4.c) The total number of fellows in the program must be commensurate with the capacity of the program to offer an adequate educational experience in endovascular surgical neuroradiology therapy. (Detail)~~

I.E. ***A fellowship program usually occurs in the context of many learners and other care providers and limited clinical resources. It should be structured to optimize education for all learners present.***

I.E.1. **Fellows should contribute to the education of residents in core programs, if present. (Core)**

Subspecialty-Specific Background and Intent: It is desirable that fellows participate in the clinical teaching of child neurology, neurological surgery, and neurology residents, radiology and vascular neurology fellows, and medical students.

~~I.E.1.a) It is desirable that they participate in the clinical teaching of neurological surgery, and of radiology fellows and medical students. (Detail)~~

I.E.1.b) The program in neuroendovascular intervention ~~endovascular surgical neuroradiology~~ must not have an adverse impact on the educational experience of child neurology, diagnostic radiology, interventional radiology, neurocritical care, ~~neuroradiology,~~ neurological surgery, ~~or~~ neurology, neuroradiology, or vascular neurology residents and fellows in the same institution. (Core~~Detail~~)

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, and that fellows' education does not compromise core residents' education.

II. Personnel

II.A. Program Director

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II.A.1. **There must be one faculty member appointed as program director with authority and accountability for the overall program, including compliance with all applicable program requirements.** **(Core)**

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

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

Background and Intent: While the ACGME recognizes the value of input from numerous individuals in the management of a fellowship, 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 ACGME. The program director's nomination is reviewed and approved by the GMEC. Final approval of program directors resides with the Review Committee.

II.A.2. **The program director must be provided with support adequate for administration of the program based upon its size and configuration.** **(Core)**

II.A.2.a) The program director support required to devote non-clinical time to the administration of the program must be provided as follows: (Core)

Number of Approved Fellowship Positions	Minimum FTE Required
1-3 fellows	0.10 FTE
4 or more	0.15 FTE

~~II.A.2.b) The program director must have adequate support from the institution and the radiology, neurological surgery, and child neurology or neurology departments to carry out the mission of the program.~~ ~~(Core)~~

Background and Intent: Ten percent FTE is defined as one half day per week.

"Administrative time" is defined as non-clinical time spent meeting the responsibilities of the program director as detailed in requirements II.A.4.-II.A.4.a).(16).

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

II.A.3. **Qualifications of the program director:**

II.A.3.a) **must include subspecialty expertise and qualifications acceptable to the Review Committee; and,** **(Core)**

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II.A.3.a).(1) This must include special expertise in neuroendovascular interventions ~~endovascular surgical neuroradiology techniques~~; (Core)

~~II.A.3.a).(1).(a) The program director must concentrate at least 50% of his or her practice in endovascular surgical neuroradiology therapy. (Core)~~

II.A.3.b) have current certification in the specialty by the American Board of Neurological Surgery, Psychiatry and Neurology, Radiology, **or the American Osteopathic Board of** Neurological Surgery, Neurology and Psychiatry, or Radiology, **or possess qualifications judged acceptable to the Review Committee; (Core)**

[Note that while the Common Program Requirements deem certification by a member board of the American Board of Medical Specialties (ABMS) or a certifying board of the American Osteopathic Association (AOA) acceptable, there is no ABMS or AOA board that offers certification in this subspecialty]

~~II.A.3.c) must include appointment by and responsibility to the program director of the core program; and, (Core)~~

II.A.3.d) must include appointment to the faculty ~~teaching staff~~ in the departments of child neurology, neurology, neurological surgery, or radiology~~, neurological surgery, and child neurology, or neurology.~~; and, (Core)

II.A.3.e) must devote at least 50 percent of their practice to neuroendovascular intervention. (Core)

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

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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 ultimate 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 ACGME 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 residents.

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

II.A.4.a).(9) **provide applicants who are offered an interview with information related to the applicant's eligibility for the relevant subspecialty 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; and, (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.

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II.A.4.a).(16) **obtain review and approval of the Sponsoring Institution's DIO before submitting information or requests to the ACGME, as required in the Institutional Requirements and outlined in the ACGME 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. **For each participating site, there must be a sufficient number of faculty members with competence to instruct and supervise all fellows at that location.** (Core)

II.B.1.a) There must be at least one faculty member with expertise in open cerebrovascular surgery available to the program. (Core)

II.B.1.a).(1) This faculty member should have a teaching appointment in the departments of child neurology, neurological surgery, neurology, or radiology. (Detail) ~~In addition to the program director, the physician faculty must include at least one full-time member with expertise in endovascular surgical neuroradiology techniques.~~ (Core)

II.B.1.b) There must be at least two faculty members with expertise in neuroendovascular intervention or neuroendovascular surgery for each fellow in the program. (Core)

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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)**

II.B.2.h) encourage and support fellows in scholarly activities; and, (Core)

II.B.2.i) ~~The physician faculty must~~ provide didactic teaching and direct supervision of fellows' performance in clinical patient management and in the procedural, interpretive, and consultative aspects of neuroendovascular intervention ~~endovascular surgical neuroradiology therapy~~. (Core) [Moved from IV.C.7.]

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.3. **Faculty Qualifications**

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

II.B.3.b) **Subspecialty physician faculty members must:**

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II.B.3.b).(1) **have current certification in the specialty by the American Board of** Neurological Surgery, Psychiatry and Neurology, Radiology, **or the American Osteopathic Board of** Neurological Surgery, Neurology and Psychiatry, Radiology**, or possess qualifications judged acceptable to the Review Committee;** **(Core)**

[Note that while the Common Program Requirements deem certification by a member board of the American Board of Medical Specialties (ABMS) or a certifying board of the American Osteopathic Association (AOA) acceptable, there is no ABMS or AOA board that offers certification in this subspecialty]

II.B.3.b).(2) devote ~~concentrate~~ at least 50 percent of their practice ~~in~~ to neuroendovascular interventions ~~endovascular surgical neuroradiology therapy~~; (Core)

II.B.3.b).(3) ~~The physician faculty must~~ be appointed in good standing to the faculty ~~staff~~ of an institution participating in the program; and, (Core)

II.B.3.b).(4) ~~The physician faculty should~~ hold primary and/or joint appointments in the departments of child neurology or neurology, neurological surgery, and radiology~~, neurological surgery, and child neurology or neurology departments~~. (Detail)

II.B.3.c) **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 fellows 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 subspecialty or in research methodology. If the program director determines that the contribution of a non-physician individual is significant to the education of the fellow, the program director may designate the individual as a program faculty member or a program core faculty member.

II.B.3.d) **Any other specialty physician faculty members must have current certification in their specialty by the appropriate American Board of Medical Specialties (ABMS) member board or American Osteopathic Association (AOA) certifying board, or possess qualifications judged acceptable to the Review Committee.** **(Core)**

II.B.4. **Core Faculty**

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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 subspecialty. 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 ACGME 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 ACGME Faculty Survey.** (Core)

II.B.4.c) There must be at least two core faculty members, including the program director, with expertise in neuroendovascular intervention or neuroendovascular surgery. ~~The faculty-to-fellow ratio must be at least one faculty person for every fellow enrolled in the program.~~ (Core)

II.C. Program Coordinator

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

II.C.2. **The program coordinator must be provided with support adequate for administration of the program based upon its size and configuration.** (Core)

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

Each program requires a lead administrative person, frequently referred to as a program coordinator, administrator, or as 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 ACGME. Individuals serving in this role are recognized as program coordinators by the ACGME.

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 ACGME 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

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for both professional and personal growth. Programs with fewer fellows may not require a full-time coordinator; one coordinator may support more than one program.

II.D. Other Program Personnel

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

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

II.D.1. There should be nurses and technicians skilled in neuroendovascular intervention, radiological equipment, critical care instrumentation, respiratory function, and laboratory medicine available to the program. (Core)

III. Fellow Appointments

III.A. Eligibility Criteria

III.A.1. Eligibility Requirements – Fellowship Programs

Neurology or Radiology: All required clinical education for entry into ACGME-accredited fellowship programs must be completed in an ACGME-accredited residency program, an AOA-approved residency program, a program with ACGME International (ACGME-I) Advanced Specialty Accreditation, or a Royal College of Physicians and Surgeons of Canada (RCPSC)-accredited or College of Family Physicians of Canada (CFPC)-accredited residency program located in Canada. (Core)

Neurological Surgery: All required clinical education for entry into ACGME-accredited fellowship programs must be completed in an ACGME-accredited residency program or an AOA-approved residency program. (Core)

Background and Intent: Eligibility for ABMS or AOA Board certification may not be satisfied by fellowship training. Applicants must be notified of this at the time of application, as required in II.A.4.a).(9).

III.A.1.a) Neurology or Radiology:
Fellowship programs must receive verification of each entering fellow's level of competence in the required field, upon matriculation, using ACGME, ACGME-I, or CanMEDS Milestones evaluations from the core residency program. (Core)

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Neurological Surgery:
Fellowship programs must receive verification of each entering fellow's level of competence in the required field, upon matriculation, using ACGME Milestones evaluations from the core residency program. (Core)

III.A.1.b) ~~The preliminary year in neuroradiology may be performed in the same institution as the endovascular surgical neuroradiology fellowship or in another institution with ACGME-accredited residencies in radiology, neuroradiology, neurological surgery, and neurology. For fellows who obtain preparatory training in another institution, documentation of completion of training must be provided by the neuroradiology program director for that institution. The endovascular surgical neuroradiology program director has the responsibility and authority to assess the adequacy of the preparatory training and to verify that all preliminary training requirements have been fulfilled.~~ (Detail)

Prerequisite Postgraduate Education

III.A.1.b).(1) Radiology Pathway 1: Fellows entering from diagnostic radiology must ~~should~~ have~~:~~

III.A.1.b).(1).(a) completed an ACGME-, AOA-, or ACGME-I-accredited residency in diagnostic radiology or an RCPSC-accredited residency in diagnostic radiology located in Canada; and, (Core)

III.A.1.b).(1).(b) completed an ACGME-, AOA-, or ACGME-I-accredited fellowship (subspecialty residency) in neuroradiology or an RCPSC-accredited fellowship in neuroradiology located in Canada.~~; or~~ (Core)

III.A.1.b).(2) Radiology Pathway 2: Fellows entering from diagnostic radiology programs are eligible to be considered for advanced placement in the second year of the neuroendovascular intervention program and:

III.A.1.b).(2).(a) must have completed an ACGME-, AOA-, or ACGME-I-accredited residency in diagnostic radiology or an RCPSC-accredited residency in diagnostic radiology located in Canada; and, (Core)

III.A.1.b).(2).(b) must have completed an ACGME-, AOA-, or ACGME-I-accredited fellowship in neuroradiology or an RCPSC-accredited fellowship in neuroradiology located in Canada; and, (Core)

III.A.1.b).(2).(c) during the PGY-5 of diagnostic radiology residency and the PGY-6 of neuroradiology fellowship, must complete six months of clinical rotations and

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training in neurological surgery, vascular neurology, or neurointensive care with emphasis on becoming competent in the outpatient evaluation and care of pre- and post-procedure endovascular patients, as well as in the management of patients in the neurointensive care environment; and, (Core)

III.A.1.b).(2).(d) during the PGY-5 of diagnostic radiology residency and the PGY-6 of neuroradiology fellowship, must complete at least 200 neuroangiograms under the supervision of a qualified physician (an ABR/AOBR-certified radiologist or interventional neuroradiologist, an ABNS/AOBS-certified endovascular neurosurgeon, or an ABNP/AOBNP-certified interventional neurologist with appropriate training). (Core)

III.A.1.b).(3) Radiology Pathway 3: Fellows entering from interventional radiology must have:

III.A.1.b).(3).(a) completed an ACGME-, AOA-, or ACGME-I-accredited residency in interventional radiology or an RCPSC-accredited residency in interventional radiology located in Canada. (Core)

III.A.1.b).(4) Radiology Pathway 4: Fellows entering from interventional radiology are eligible to be considered for advanced placement in the second year of the neuroendovascular intervention program and:

III.A.1.b).(4).(a) must have completed an ACGME-, AOA-, or ACGME-I-accredited residency in interventional radiology or an RCPSC-accredited residency in interventional radiology located in Canada; and, (Core)

III.A.1.b).(4).(b) must have completed an ACGME-, AOA-, or ACGME-I-accredited fellowship in neuroradiology or an RCPSC-accredited fellowship in neuroradiology located in Canada; and, (Core)

III.A.1.b).(4).(c) during the PGY-5 and -6 of interventional radiology residency and the PGY-7 of neuroradiology fellowship, must complete six months of clinical rotations and training in neurological surgery, vascular neurology, or neurointensive care with emphasis on becoming competent in the outpatient evaluation and care of pre- and post-procedure endovascular patients, as well as in the management of patients in the neurointensive care environment; and, (Core)

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III.A.1.b).(4).(d) during the PGY-5 and -6 of interventional radiology residency and the PGY-7 of neuroradiology fellowship, must complete at least 200 neuroangiograms under the supervision of a qualified physician (an ABR/AOBR-certified radiologist or interventional neuroradiologist, an ABNS/AOBS-certified endovascular neurosurgeon, or an ABNP/AOBNP-certified interventional neurologist with appropriate training). (Core)

~~III.A.1.b).(4).(d).(i) performed and interpreted a minimum of 100 diagnostic neuroangiograms under the supervision of a qualified physician (a board-certified radiologist, interventional neuroradiologist, endovascular neurosurgeon or interventional neurologist with appropriate training); and, (Core)~~

~~III.A.1.b).(4).(d).(ii) completed six months' training in neurologic surgery, vascular neurology, and neurointensive care, during which the fellow will become proficient in the outpatient evaluation and care of pre-and post-procedure endovascular patients, as well as in the management of patients in the neurointensive care environment. (Core)~~

~~III.A.1.b).(4).(d).(ii).(a) This may be completed during the radiology residency. (Detail)~~

III.A.1.b).(5) Fellows entering from neurological surgery are eligible to be considered for advanced placement in the second year of the neuroendovascular intervention fellowship and must ~~should~~ have:

III.A.1.b).(5).(a) completed an ACGME- or AOA-accredited residency in neurological surgery, and, (Core)

III.A.1.b).(5).(b) completed a preparatory year of neuroradiology training ~~which~~ that provides education and clinical experience~~. The preparatory year~~ may occur during the neurological surgery residency, and should include: (Core)

III.A.1.b).(5).(b).(i) a course in basic radiographic skills, including radiation physics, radiation biology, and radiation protection; and the pharmacology of radiographic contrast materials acceptable to the program director

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where the neuroradiology training will occur; (Core)

III.A.1.b).(5).(b).(ii) performing and interpreting a minimum of ~~100~~ 200 diagnostic neuroangiograms under the supervision of a qualified physician (an ABR/AOBR-certified radiologist or interventional neuroradiologist, an ABNS/AOBS-certified endovascular neurosurgeon, or an ABNP/AOBNP-certified interventional neurologist with appropriate training~~(a Board-certified radiologist, interventional neuroradiologist, endovascular neurosurgeon, or interventional neurologist with appropriate training)~~; (Core)

III.A.1.b).(5).(b).(iii) the use of needles, catheters, guidewires, and angiographic devices and materials; (Core)

III.A.1.b).(5).(b).(iv) recognition and management of complication of angiographic procedures; and, (Core)

III.A.1.b).(5).(b).(v) understanding the fundamentals of non-invasive neurovascular imaging studies pertinent to the practice of neuroendovascular intervention ~~endovascular surgical neuroradiology~~, including CT/CTA, MR/MRA, and sonography of neurovascular diseases. (Core)

Subspecialty-Specific Background and Intent: Fellows entering from neurological surgery who have not met all of the above criteria for advanced placement may be subject to additional fellowship time up to the full 24-month curriculum at the discretion of the neuroendovascular intervention program director.

III.A.1.b).(6) Fellows entering from neurology are eligible to be considered for advanced placement in the second year of the neuroendovascular intervention fellowship and must ~~should~~ have:

III.A.1.b).(6).(a) completed an ACGME-, AOA-, or ACGME-I-accredited residency in child neurology or neurology or an RCPSC-accredited residency in child neurology or neurology located in Canada; and, (Core)

III.A.1.b).(6).(b) completed an ACGME-, AOA-, or ACGME-I-accredited ~~one-year~~ vascular~~/stroke~~ neurology or

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neurocritical care program or an RCPSC-accredited one-year vascular/stroke neurology program located in Canada that includes at least three months of neuro-intensive care; and, (Core)

~~III.A.1.b).(6).(c)~~ ~~completed three months of clinical experience within an ACGME-, AOA-, ACGME-I-accredited neurological surgery program or an RCPSC-accredited neurological surgery program located in Canada;~~ ~~(Core)~~

III.A.1.b).(6).(d) completed a preparatory year of neuroradiology training~~, which~~ that provides education and clinical experience that includes: (Core)

III.A.1.b).(6).(d).(i) a course in basic radiographic skills, including radiation physics, radiation biology, and radiation protection; and the pharmacology of radiographic contrast materials acceptable to the program director where the neuroradiology training will occur; (Core)

III.A.1.b).(6).(d).(ii) performing and interpreting a minimum of ~~100~~ 200 diagnostic neuroangiograms under the supervision of a qualified physician (an ABR/AOBR-certified radiologist or interventional neuroradiologist, an ABNS/AOBS-certified endovascular neurosurgeon, or an ABNP/AOBNP-certified interventional neurologist with appropriate training)~~(Board-certified neuroradiologist, interventional neuroradiologist, endovascular neurosurgeon, or intervening neurologist with appropriate training)~~; (Core)

III.A.1.b).(6).(d).(iii) instruction in the use of needles, catheters, guidewires, and angiographic devices and materials; (Core)

III.A.1.b).(6).(d).(iv) recognition and management of complication of angiographic procedures; and, (Core)

III.A.1.b).(6).(d).(v) understanding the fundamentals of non-invasive neurovascular imaging studies pertinent to the practice of neuroendovascular intervention ~~endovascular surgical neuroradiology~~, including CT/CTA, MR/MRA and sonography of neurovascular diseases. (Core)

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Subspecialty-Specific Background and Intent: Fellows entering from neurology who have not met all of the above criteria for advanced placement may be subject to additional fellowship time up to the full 24-month curriculum at the discretion of the neuroendovascular intervention program director.

III.A.1.c) Fellow Eligibility Exception

The Review Committee for Radiology **will allow the following exception to the fellowship eligibility requirements:**

III.A.1.c).(1) **An ACGME-accredited fellowship program may accept an exceptionally qualified international graduate applicant who does not satisfy the eligibility requirements listed in III.A.1., but who does meet all of the following additional qualifications and conditions: (Core)**

III.A.1.c).(1).(a) **evaluation by the program director and fellowship selection committee of the applicant's suitability to enter the program, based on prior training and review of the summative evaluations of training in the core specialty; and, (Core)**

III.A.1.c).(1).(b) **review and approval of the applicant's exceptional qualifications by the GMEC; and, (Core)**

III.A.1.c).(1).(c) **verification of Educational Commission for Foreign Medical Graduates (ECFMG) certification. (Core)**

III.A.1.c).(2) **Applicants accepted through this exception must have an evaluation of their performance by the Clinical Competency Committee within 12 weeks of matriculation. (Core)**

Background and Intent: An exceptionally qualified international graduate applicant has (1) completed a residency program in the core specialty outside the continental United States that was not accredited by the ACGME, AOA, ACGME-I, RCPSC or CFPC, and (2) demonstrated clinical excellence, in comparison to peers, throughout training. Additional evidence of exceptional qualifications is required, which may include one of the following: (a) participation in additional clinical or research training in the specialty or subspecialty; (b) demonstrated scholarship in the specialty or subspecialty; and/or (c) demonstrated leadership during or after residency. Applicants being considered for these positions must be informed of the fact that their training may not lead to certification by ABMS member boards or AOA certifying boards.

In recognition of the diversity of medical education and training around the world, this early evaluation of clinical competence required for these applicants ensures they can

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provide quality and safe patient care. Any gaps in competence should be addressed as per policies for fellows already established by the program in partnership with the Sponsoring Institution.

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

III.B.1. All complement increases must be approved by the Review Committee. (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 fellow, and Milestones evaluations upon matriculation. (Core)

IV. Educational Program

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

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

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 subspecialty-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. 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 in their subspecialty. These must be distributed, reviewed, and available to fellows and faculty members; (Core)

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IV.A.3. **delineation of fellow responsibilities for patient care, progressive responsibility for patient management, and graded supervision in their subspecialty; (Core)**

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

IV.A.4. **structured educational activities beyond direct patient care; and, (Core)**

Background and Intent: Patient care-related educational activities, such as morbidity and mortality conferences, tumor boards, surgical planning conferences, case discussions, etc., allow fellows to gain medical knowledge directly applicable to the patients they serve. Programs should define those educational activities in which fellows are expected to participate and for which time is protected. Further specification can be found in IV.C.

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

IV.B. **ACGME Competencies**

Background and Intent: The Competencies provide a conceptual framework describing the required domains for a trusted physician to enter autonomous practice. These Competencies are core to the practice of all physicians, although the specifics are further defined by each subspecialty. The developmental trajectories in each of the Competencies are articulated through the Milestones for each subspecialty. The focus in fellowship is on subspecialty-specific patient care and medical knowledge, as well as refining the other competencies acquired in residency.

IV.B.1. **The program must integrate the following ACGME 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.b) **Patient Care and Procedural Skills**

Background and Intent: Quality patient care is safe, effective, timely, efficient, patient-centered, equitable, and designed to improve population health, while reducing per capita costs. (See the Institute of Medicine [IOM]'s *Crossing the Quality Chasm: A New Health System for the 21st Century*, 2001 and Berwick D, Nolan T, Whittington J. *The Triple Aim: care, cost, and quality. Health Affairs.* 2008; 27(3):759-769.). In addition, there

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should be a focus on improving the clinician's well-being as a means to improve patient care and reduce burnout among residents, fellows, and practicing physicians.

These organizing principles inform the Common Program Requirements across all Competency domains. Specific content is determined by the Review Committees with input from the appropriate professional societies, certifying boards, and the community.

IV.B.1.b).(1) **Fellows must be able to provide patient care that is compassionate, 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 as consultants under the supervision of ~~staff~~ neuroendovascular intervention ~~endovascular surgical neuroradiology~~ practitioners. (Core)

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

IV.B.1.b).(1).(b).(i) recognizing the signs and symptoms of disorders amenable to diagnosis and treatment by neuroendovascular intervention techniques; (Core)

IV.B.1.b).(1).(b).(ii) the recognition and management of indications and contraindications to neuroendovascular intervention procedures; (Core)

IV.B.1.b).(1).(b).(iii) managing the pre- and post-operative care of endovascular patients; and, (Core)

IV.B.1.b).(1).(b).(iv) managing patients requiring neurointensive care. (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 participate in and demonstrate competence in:

IV.B.1.b).(2).(a).(i) personally performing and analyzing a broad spectrum of endovascular procedures; (Core)

~~IV.B.1.b).(2).(a).(i).(a)~~ ~~Fellows must perform a minimum of 100 therapeutic endovascular procedures;~~ ~~(Core)~~

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IV.B.1.b).(2).(a).(ii) the management of patients with neurological disease, the performance of neuroendovascular intervention ~~endovascular surgical neuroradiology~~ procedures, and the integration of neuroendovascular intervention ~~endovascular surgical neuroradiology~~ therapy into the clinical management of patients; (Core)

IV.B.1.b).(2).(a).(iii) performing clinical pre-procedure evaluations of patients and their preliminary diagnostic studies, and consulting with clinicians on other services; (Core)

IV.B.1.b).(2).(a).(iv) performing diagnostic and therapeutic neuroendovascular intervention ~~endovascular surgical neuroradiology~~ procedures; (Core)

IV.B.1.b).(2).(a).(v) performing physical examinations to evaluate patients with neurological disorders; (Core)

IV.B.1.b).(2).(a).(vi) performing neurological examinations to evaluate patients with neurological disorders; (Core)

IV.B.1.b).(2).(a).(vii) generating procedural reports; and, (Core)

IV.B.1.b).(2).(a).(viii) providing short-~~term~~ and long-term post-procedure follow-up care, including neurointensive care. (Core)

IV.B.1.b).(2).(a).(viii).(a) The continuity of care must be of sufficient duration to ensure ~~that~~ the fellow is familiar with the outcome of all neuroendovascular intervention ~~endovascular surgical neuroradiology~~ procedures. (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 knowledge of the:

IV.B.1.c).(1).(a) clinical and technical aspects of neuroendovascular

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intervention procedures; (Core)

IV.B.1.c).(1).(b) fundamentals of imaging physics and radiation biology; (Core)

IV.B.1.c).(1).(c) interpretation of neuroangiographic studies pertinent to the practice; (Core)

IV.B.1.c).(1).(d) medical and surgical alternatives to neuroendovascular intervention procedures; and, (Core)

IV.B.1.c).(1).(e) pathophysiology and natural history of neurological disorders. (Core)

IV.B.1.c).(2) Fellows must demonstrate ~~competence in their~~ knowledge of the following didactic component areas:

IV.B.1.c).(2).(a) anatomical and physiologic basic knowledge, including: (Core)

IV.B.1.c).(2).(a).(i) arterial and venous angiographic anatomy of the brain, spine, spinal cord, and head and neck, to include~~ing~~: (Core) [Section alphabetized]

IV.B.1.c).(2).(a).(i).(a) autoregulation; (Core)

IV.B.1.c).(2).(a).(i).(b) cerebral blood flow; (Core)

IV.B.1.c).(2).(a).(i).(c) collateral circulation; (Core)

IV.B.1.c).(2).(a).(i).(d) dangerous anastomosis; (Core)

IV.B.1.c).(2).(a).(i).(e) variants of anatomy; and, (Core)

IV.B.1.c).(2).(a).(i).(f) vascular distributions and supply/drainage. (Core)

IV.B.1.c).(2).(a).(ii) related bony and soft tissue anatomy and physiology, to include~~ing~~: (Core) [Section alphabetized]

IV.B.1.c).(2).(a).(ii).(a) brain, neck, face, and spine soft tissue anatomy and physiology; (Core)

IV.B.1.c).(2).(a).(ii).(b) ligamentous, articular and muscular anatomy; and, (Core)

IV.B.1.c).(2).(a).(ii).(c) vertebral, face, and skull bony anatomy; (Core)

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IV.B.1.c).(2).(b)	pharmacology of the CNS and vasculature and relevant brain physiology, including: (Core)
IV.B.1.c).(2).(b).(i)	agents used in provocative testing; (Core)
IV.B.1.c).(2).(b).(ii)	coagulation cascade; (Core)
IV.B.1.c).(2).(b).(ii).(a)	antiaggregants; (Core)
IV.B.1.c).(2).(b).(ii).(b)	anticoagulants; and, (Core)
IV.B.1.c).(2).(b).(ii).(c)	thrombolytics. (Core)
IV.B.1.c).(2).(b).(iii)	contrast agents; (Core)
IV.B.1.c).(2).(b).(iv)	vasodilators and constrictors; (Core)
IV.B.1.c).(2).(c)	embolic, sclerosing, ablative, and bone stabilization agents, including: (Core) [Section alphabetized]
IV.B.1.c).(2).(c).(i)	allergic reaction control; (Core)
IV.B.1.c).(2).(c).(ii)	blood pressure control; (Core)
IV.B.1.c).(2).(c).(iii)	heart rate control; (Core)
IV.B.1.c).(2).(c).(iv)	infection; and, (Core)
IV.B.1.c).(2).(c).(v)	stroke risk reduction. (Core)
IV.B.1.c).(2).(d)	technical aspects of neuroendovascular intervention ~~endovascular surgical neuroradiology~~, including: (Core) [Section alphabetized]
IV.B.1.c).(2).(d).(i)	catheter and delivery systems; (Core)
IV.B.1.c).(2).(d).(ii)	collateral network manipulations and~~,~~ flow diversion; (Core)
IV.B.1.c).(2).(d).(iii)	complications of angiography and embolization; (Core)
IV.B.1.c).(2).(d).(iv)	direct access/therapeutic injection techniques, to include~~ing~~ biopsy and aspiration; (Core)
IV.B.1.c).(2).(d).(v)	electrophysiology; (Core)

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IV.B.1.c).(2).(d).(vi) embolic, sclerosing, and stabilizing agents in cerebral, spinal, and head and neck embolization; (Core)

IV.B.1.c).(2).(d).(vii) flow-controlled navigations and embolization; (Core)

IV.B.1.c).(2).(d).(viii) imaging of the vascular system; (Core)

IV.B.1.c).(2).(d).(ix) provocative testing; and, (Core)

IV.B.1.c).(2).(d).(x) stents, balloons, and revascularization devices. (Core)

IV.B.1.c).(3) Fellows must demonstrate knowledge of the classification, clinical presentation, imaging appearance, natural history, epidemiology, hemodynamic and physiologic basis for disease and treatment, indications and techniques for treatment, contraindications for treatment, treatment alternatives, combined therapies, risks of treatment, and complication management for all the disease states listed below: (Core) [Section alphabetized]

IV.B.1.c).(3).(a) arteriopathies; (Core)

IV.B.1.c).(3).(b) arteriovenous malformations and fistulae; (Core)

IV.B.1.c).(3).(c) hemorrhage and epistaxis; (Core)

IV.B.1.c).(3).(d) other vascular malformations and lesions; (Core)

IV.B.1.c).(3).(e) stroke and cerebral ischemia; (Core)

IV.B.1.c).(3).(f) tumors; (Core)

IV.B.1.c).(3).(g) vascular trauma; and, (Core)

IV.B.1.c).(3).(h) vertebral fracture and degeneration. (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)

Background and Intent: Practice-based learning and improvement is one of the defining characteristics of being a physician. It is the ability to investigate and evaluate the care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and lifelong learning.

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The intention of this Competency is to help a fellow refine the habits of mind required to continuously pursue quality improvement, well past the completion of fellowship.

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.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.C. Curriculum Organization and Fellow 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) The assignment of educational experiences should be structured to minimize the frequency of transitions. (Detail)

IV.C.1.b) Educational experiences should be of sufficient length to provide a quality educational experience defined by ongoing supervision, longitudinal relationships with faculty members, and high-quality assessment and feedback. (Detail)

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

IV.C.3. The curriculum must include:

IV.C.3.a) 24 continuous months of neuroendovascular intervention clinical training ~~must 12 continuous months in endovascular surgical neuroradiology~~ under close supervision; (Core)

IV.C.3.b) didactic and clinical experiences that encompass the full clinical spectrum of neuroendovascular intervention therapy; (Core)

IV.C.3.c) education and experience in invasive functional testing; and, (Detail)

IV.C.3.d) training in neuroendovascular intervention ~~endovascular surgical neuroradiology must be conducted~~ in an environment conducive to investigative studies of a clinical or basic science nature. (Core)

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IV.C.4. Didactics

IV.C.4.a) Formal teaching conferences specifically developed for the fellows must be provided. (Core)

IV.C.4.a).(1) Teaching conferences must be organized by the program faculty members and held at least once a week. ~~to allow discussion of topics selected to broaden knowledge in the field of endovascular surgical neuroradiology.~~ (Core~~Detail~~)

~~IV.C.4.a).(1).(a) Specifically, teaching conferences should embrace the scope of endovascular surgical neuroradiology as outlined in the Introduction and IV (Educational Program) of these Program Requirements;~~ ~~(Core)~~

~~IV.C.4.a).(2) The program must ensure protected didactic and interactive conference time, including interdepartmental meetings with neurosurgeons, neuroradiologists, and neurologists;~~ ~~(Core)~~

IV.C.4.a).(3) Conferences must include ~~the program must ensure that~~ journal clubs, pathology meetings, and neuroanatomy dissection, simulation, and flow-model courses; ~~should meet on a regular basis to discuss innovations in endovascular surgical neuroradiology; and,~~ (Core)

IV.C.4.a).(4) Journal club must be held on a quarterly basis. (Core)

IV.C.4.a).(5) Morbidity and mortality review conferences related to the performance of neuroendovascular intervention procedures must be held at least monthly. (Core)

IV.C.4.a).(5).(a) Fellows must actively participate in these reviews. (Core)

IV.C.4.a).(6) Teaching conferences must cover the full extent of neuroendovascular intervention, including the use of minimally invasive catheter-based technology, radiologic imaging, and clinical expertise to diagnose and treat diseases of the CNS, head, neck, and spine. (Core)

IV.C.4.a).(7) Conference formats should allow for interactive discussion of the selected topics. (Detail)

IV.C.4.b) Fellows must attend and participate in conferences. (Core)

IV.C.4.b).(1) Protected didactic and interactive conference time must be provided, including for interdepartmental meetings with neurosurgeons, neuroradiologists, and neurologists. (Core)

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IV.C.4.b).(2) Each fellow should attend and actively participate in interdepartmental meetings and conferences with child neurology or neurology, neurological surgery, neuropathology, and neuroradiology~~, neurological surgery~~, ~~child neurology or neurology, and neuropathology~~. (Detail)

~~IV.C.4.b).(2).(a) The program must ensure that regular review of all mortality and morbidity related to the performance of endovascular surgical neuroradiology procedures are documented. Fellows must participate actively in these reviews, which should be held at least monthly.~~ (Core)

~~IV.C.4.b).(2).(b) Fellows should be encouraged to attend and participate in local extramural conferences and should attend at least one national meeting or postgraduate course in endovascular surgical neuroradiology therapy while in training.~~ (Detail)

Subspecialty-Specific Background and Intent: The Review Committee values the contributions of extramural education towards enhancing the fellows' overall educational experience. Fellow attendance and participation in local extramural conferences, national meetings, or post-graduate coursework in neuroendovascular intervention therapy during the program is encouraged.

IV.C.5. ~~The program must include training and experience in the following:~~

IV.C.5.a) ~~signs and symptoms of disorders amenable to diagnosis and treatment by endovascular surgical neuroradiology techniques;~~ (Core)

IV.C.5.b) ~~physical examinations to evaluate patients with neurological disorders;~~ (Core)

IV.C.5.c) ~~pathophysiology and natural history of these disorders;~~ (Core)

IV.C.5.d) ~~indications for and contraindications to endovascular surgical neuroradiology procedures;~~ (Core)

IV.C.5.e) ~~clinical and technical aspects of endovascular surgical neuroradiology procedures;~~ (Core)

IV.C.5.f) ~~medical and surgical alternatives;~~ (Core)

IV.C.5.g) ~~preoperative and postoperative management of endovascular patients;~~ (Core)

IV.C.5.h) ~~neurointensive care management;~~ (Core)

IV.C.5.i) ~~fundamentals of imaging physics and radiation biology; and,~~ (Core)

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~~IV.C.5.j) interpretation of neuroangiographic studies pertinent to the practice. (Core)~~

~~IV.C.6. The physician faculty must provide didactic teaching and direct supervision of fellows' performance in clinical patient management and in the procedural, interpretive, and consultative aspects of endovascular surgical neuroradiology therapy. (Core)~~

~~IV.C.6.a) Fellows must attend and participate in clinical conferences. (Core)~~

~~IV.C.6.b) Fellows must have experience in didactic and clinical experiences that encompass the full clinical spectrum of endovascular surgical neuroradiology therapy. (Core)~~

IV.C.7. Fellow Experiences

IV.C.7.a) Each fellow must complete a minimum of 250 interventional procedures, which must include: (Core)

IV.C.7.a).(1) 40 aneurysm treatments, including 10 ruptured aneurysms; (Core)

IV.C.7.a).(2) 20 intracranial embolizations (AVM, AVF, tumor); (Core)

IV.C.7.a).(3) 20 intracranial or extracranial stent placements (at least five in each category); (Core)

IV.C.7.a).(4) 40 acute ischemic stroke treatments; (Core)

IV.C.7.a).(5) 15 head and neck embolizations; and, (Core)

IV.C.7.a).(6) five spinal angiograms and/or embolizations. (Core)

IV.C.7.b) Each fellow must maintain a personal case log of their clinical experiences, which must be verified by the program director at the completion of the program. (Core)

IV.C.7.c) Fellows must participate in ~~make~~ daily rounds with the neuroendovascular intervention ~~endovascular surgical neuroradiology~~ faculty members during which patient management decisions are discussed and made. (Core)

~~IV.C.7.d) Fellows must have adequate training and experience in invasive functional testing. (Detail)~~

IV.C.7.e) Direct supervision ~~interactions~~ of fellow~~s~~ interactions with patients must be ~~closely observed to~~ ensured so that appropriate standards of care and concern for patient welfare are strictly maintained. (Core)

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IV.C.7.e).(1) Fellow communication, consultation, and coordination of care with the referring clinical staff members and clinical services must be maintained and documented with appropriate notes in the medical record. (Detail)

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 as defined in the subspecialty-specific Program Requirements. Scholarly activities may include discovery, integration, application, and teaching.

The ACGME recognizes the diversity of fellowships 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 sponsoring institution and program should allocate adequate educational resources to facilitate fellow involvement in scholarly activities.~~ (Detail)

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**

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- **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:**

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

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) The curriculum must advance fellows' knowledge of the basic principles of research, including how research is conducted, evaluated, explained to patients, and applied to patient care. (Core)

IV.D.3.b) Fellows should participate in scholarly activity. (Detail)

IV.D.3.c) Fellows should ~~be encouraged to~~ participate in research activities with residents and staff members in other related specialties. (Detail)

V. Evaluation

V.A. Fellow Evaluation

V.A.1. Feedback and Evaluation

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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 new specialist to one with growing subspecialty 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.a).(1) Assessment should include regular evaluation of fellows' knowledge, skills, and overall performance, including the development of professional attitudes consistent with being a physician. (Core)

V.A.1.a).(1).(a) The assessment must include cognitive, motor, and interpersonal skills, as well as judgment. (Core)

V.A.1.a).(2) The program ~~director will meet~~ must provide the fellows with quarterly feedback ~~with the fellows~~ to communicate ~~each~~ performance evaluations and discuss their procedure logs. ~~At this time, procedure logs and performance will be reviewed and each fellow will be provided with feedback.~~ (Core)

~~V.A.1.a).(2).(a) Fellows will be advanced to positions of higher responsibility only on evidence of their satisfactory progressive scholarship and professional growth. (Detail)~~

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~~V.A.1.a).(2).(b)~~ ~~The program will maintain a permanent record of evaluation for each fellow and have it accessible to the fellow and other authorized personnel.~~ ~~(Core)~~

V.A.1.a).(2).(c) At the completion of ~~training~~ the educational program, the program director must submit the entire clinical experience of the neuroendovascular intervention ~~endovascular surgical neuroradiology~~ program and the fellows. ~~in the format prescribed by the Review Committee. The list of procedures and the logs must be made available to the Review Committee at the time of its review of the core program and the endovascular surgical neuroradiology program;~~ (Core)

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

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

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

V.A.1.b).(2) **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 subspecialty-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); and, (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)**

Background and Intent: The trajectory to autonomous practice in a subspecialty is documented by the subspecialty-specific Milestones evaluation during fellowship. These Milestones detail the progress of a fellow in attaining skill in each competency

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domain. It is expected that the most growth in fellowship education occurs in patient care and medical knowledge, while the other four domains of competency must be ensured in the context of the subspecialty. They are developed by a subspecialty group and allow evaluation based on observable behaviors. The 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.

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 subspecialty-specific Milestones.** (Core)

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

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

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

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

V.A.1.e) **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, if applicable.** (Core)

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

V.A.2. **Final Evaluation**

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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 subspecialty-specific Milestones, and when applicable the subspecialty-specific Case Logs, must be used as tools to ensure fellows are able to engage in autonomous practice upon completion of the program. (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 fellow in accordance with institutional policy; (Core)

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

V.A.2.a).(2).(c) consider recommendations from the Clinical Competency Committee; and, (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, at least one of whom is a core faculty member. 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.b) The Clinical Competency Committee must:

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

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

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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)

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

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, confidential evaluations by the fellows.** (Core)

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

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

Background and Intent: The quality of the faculty's teaching and clinical care is a determinant of the quality of the program and the quality of the fellows' future clinical care. Therefore, the program has the responsibility to evaluate and improve the program faculty members' teaching, scholarship, professionalism, and quality care. This section mandates annual review of the program's faculty members for this purpose, and can be used as input into the Annual Program Evaluation.

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**

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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; and,** (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)

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

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) **ACGME letters of notification, including citations, Areas for Improvement, and comments;** (Core)

V.C.1.c).(4) **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)

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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) ACGME Resident/Fellow and Faculty Surveys (where applicable); and, (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 examinations (where applicable); (Core)

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

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

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

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

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

V.C.2. The program must participate in a Self-Study prior to its 10-Year Accreditation Site Visit. (Core)

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

Background and Intent: Outcomes of the documented Annual Program Evaluation can be integrated into the 10-year Self-Study process. The Self-Study is an objective, comprehensive evaluation of the fellowship program, with the aim of improving it. Underlying the Self-Study is this longitudinal evaluation of the program and its learning environment, facilitated through sequential Annual Program Evaluations that focus on the required components, with an emphasis on program strengths and self-identified areas for improvement. Details regarding the timing and expectations for the

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Self-Study and the 10-Year Accreditation Site Visit are provided in the *ACGME Manual of Policies and Procedures*. Additionally, a description of the Self-Study process, as well as information on how to prepare for the 10-Year Accreditation Site Visit, is available on the ACGME website.

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

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

V.C.3.a) ~~**For subspecialties in which the ABMS member board and/or AOA certifying board offer(s) an annual written exam, in the preceding three years, the program's aggregate pass rate of those taking the examination for the first time must be higher than the bottom fifth percentile of programs in that subspecialty.** (Outcome)~~

V.C.3.b) ~~**For subspecialties in which the ABMS member board and/or AOA certifying board offer(s) a biennial written exam, in the preceding six years, the program's aggregate pass rate of those taking the examination for the first time must be higher than the bottom fifth percentile of programs in that subspecialty.** (Outcome)~~

V.C.3.c) ~~**For subspecialties in which the ABMS member board and/or AOA certifying board offer(s) an annual oral exam, in the preceding three years, the program's aggregate pass rate of those taking the examination for the first time must be higher than the bottom fifth percentile of programs in that subspecialty.** (Outcome)~~

V.C.3.d) ~~**For subspecialties in which the ABMS member board and/or AOA certifying board offer(s) a biennial oral exam, in the preceding six years, the program's aggregate pass rate of those taking the examination for the first time must be higher than the bottom fifth percentile of programs in that subspecialty.** (Outcome)~~

V.C.3.e) ~~**For each of the exams referenced in V.C.3.a)-d), any program whose graduates over the time period specified in the requirement have achieved an 80 percent pass rate will have met this requirement, no matter the percentile rank of the program for pass rate in that subspecialty.** (Outcome)~~

~~**Background and Intent: Setting a single standard for pass rate that works across subspecialties is not supportable based on the heterogeneity of the psychometrics of**~~

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~~different examinations. By using a percentile rank, the performance of the lower five percent (fifth percentile) of programs can be identified and set on a path to curricular and test preparation reform.~~

~~There are subspecialties where there is a very high board pass rate that could leave successful programs in the bottom five percent (fifth percentile) despite admirable performance. These high-performing programs should not be cited, and V.C.3.e) is designed to address this.~~

V.C.3.f) ~~Programs must report, in ADS, 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 ACGME will calculate a rolling three-year average of the ultimate board certification rate at seven years post-graduation, and the Review Committees will monitor it.~~

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

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

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, residents, fellows, faculty members, and all members of the health care team***

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Background and Intent: The revised requirements are intended to provide greater flexibility within an established framework, allowing programs and fellows more discretion to structure clinical education in a way that best supports the above principles of professional development. With this increased flexibility comes the responsibility for programs and fellows to adhere to the 80-hour maximum weekly limit (unless a rotation-specific exception is granted by a Review Committee), and to utilize flexibility in a manner that optimizes patient safety, fellow education, and fellow well-being. The requirements are intended to support the development of a sense of professionalism by encouraging fellows to make decisions based on patient needs and their own well-being, without fear of jeopardizing their program's accreditation status. In addition, the proposed requirements eliminate the burdensome documentation requirement for fellows to justify clinical and educational work hour variations.

Clinical and educational work hours represent only one part of the larger issue of conditions of the learning and working environment, and Section VI has now been expanded to include greater attention to patient safety and fellow and faculty member well-being. The requirements are intended to support programs and fellows as they strive for excellence, while also ensuring ethical, humanistic training. Ensuring that flexibility is used in an appropriate manner is a shared responsibility of the program and fellows. With this flexibility comes a responsibility for fellows and faculty members to recognize the need to hand off care of a patient to another provider when a fellow is too fatigued to provide safe, high quality care and for programs to ensure that fellows remain within the 80-hour maximum weekly limit.

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

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

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

VI.A.1.a).(1).(b) **The program must have a structure that promotes safe, 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 interprofessional learning and working environment.

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

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

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

VI.A.1.a).(3).(a).(i) **know their responsibilities in reporting patient safety events at the clinical site;** **(Core)**

VI.A.1.a).(3).(a).(ii) **know how to report patient safety events, including near misses, at the clinical site; and,** **(Core)**

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VI.A.1.a).(3).(a).(iii) 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) Education in Quality Improvement

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

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

VI.A.1.b).(2).(a) Fellows and faculty members must receive data on quality metrics and benchmarks related to their patient populations. (Core)

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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.

VI.A.1.b).(3).(a) **Fellows must have the opportunity to participate in interprofessional quality improvement activities.** (Core)

VI.A.1.b).(3).(a).(i) **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 Review Committee) who is responsible and accountable for the patient's care.** (Core)

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

VI.A.2.a).(1).(b) **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 or fellow, either on site or by means of telecommunication***

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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 gains 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:**

VI.A.2.c).(1).(a) **the supervising physician is physically present with the fellow during the key portions of the patient interaction; or,** (Core)

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

VI.A.2.c).(1).(b).(i).(a) These guidelines should stipulate that indirect supervision using telecommunication technology

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should be limited to patient evaluation for treatment and/or patient follow-up visits and should not be used in the performance of neuroendovascular intervention procedures. (Core)

VI.A.2.c).(1).(b).(ii) The program director must ensure that clear expectations exist and are communicated to the fellows, and that these expectations outline specific situations in which a fellow still requires direct supervision. (Core)

VI.A.2.c).(2) Indirect Supervision: the supervising physician is not providing physical or concurrent visual or audio supervision but is immediately available to the 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 fellow 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 fellows based on the needs of the patient and the skills of each fellow. (Core)

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

VI.A.2.e) Programs must set guidelines for circumstances and events in which 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)‡

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

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; and,** (Core)

Background and Intent: Routine reliance on fellows to fulfill non-physician obligations increases work compression for fellows 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 fellows may be expected to do any of these things on occasion when the need arises, these activities should not be performed by fellows routinely and must be kept to a minimum to optimize fellow education.

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

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

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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; and,** (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; and,** (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**

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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 resident competence. Physicians and all members of the health care team share responsibility for the well-being of each other. For example, a culture which encourages covering for colleagues after an illness without the expectation of reciprocity reflects the ideal of professionalism. A positive culture in a clinical learning environment models constructive behaviors, and prepares fellows with the skills and attitudes needed to thrive throughout their careers.

Background and Intent: The ACGME 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. The ACGME is leveraging its resources in four key areas to support the ongoing focus on physician well-being: education, influence, research, and collaboration. Information regarding the ACGME's ongoing efforts in this area is available on the ACGME website.

As these efforts evolve, information will be shared with programs seeking to develop and/or strengthen their own well-being initiatives. In addition, there are many activities that programs can utilize now to assess and support physician well-being. These include culture of safety surveys, ensuring the availability of counseling services, and attention to the safety of the entire health care team.

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,**

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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)

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

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

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

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 have the opportunity to 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 abuse. The program, in partnership with its Sponsoring Institution, must educate faculty members and fellows in identification of the symptoms of burnout, depression, and substance abuse, 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 in order to create systems for identification of burnout, depression, and substance abuse. Materials and more information are available on the Physician Well-

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being section of the ACGME website (http://www.acgme.org/What-We-Do/Initiatives/Physician-Well-Being).

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 fellow, resident, or faculty member may be displaying signs of burnout, depression, substance abuse, suicidal ideation, or potential for violence; (Core)**

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

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

VI.C.1.e).(3) **provide access to confidential, affordable mental health assessment, counseling, and treatment, including access to urgent and emergent care 24 hours a day, seven days a week. (Core)**

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

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

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)**

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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; and,** (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)

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

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

VI.D.2. **Each program must ensure continuity of patient care, consistent with the program's policies and procedures referenced in VI.C.2–VI.C.2.b), in the event that 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)

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

VI.E.1. Clinical Responsibilities

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

Background and Intent: The changing clinical care environment of medicine has meant that work compression due to high complexity has increased stress on fellows. Faculty members and program directors need to make sure fellows function in an environment that has safe patient care and a sense of fellow well-being. Some Review Committees have addressed this by setting limits on patient admissions, and it is an essential responsibility of the program director to monitor fellow workload. Workload should be distributed among the fellow team and interdisciplinary teams to minimize work compression.

VI.E.2. Teamwork

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 subspecialty and larger health system. (Core)

VI.E.3. Transitions of Care

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

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

VI.E.3.c) Programs must ensure that 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 referenced in VI.C.2-VI.C.2.b), 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

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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.

Background and Intent: In the new requirements, the terms "clinical experience and education," "clinical and educational work," and "clinical and educational work hours" replace the terms "duty hours," "duty periods," and "duty." These changes have been made in response to concerns that the previous use of the term "duty" in reference to number of hours worked may have led some to conclude that fellows' duty to "clock out" on time superseded their duty to their patients.

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)

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

Scheduling

While the ACGME acknowledges that, on rare occasions, a fellow may work in excess of 80 hours in a given week, all programs and fellows utilizing this flexibility will be required to adhere to the 80-hour maximum weekly limit when averaged over a four-week period. Programs that regularly schedule fellows to work 80 hours per week and still permit fellows to remain beyond their scheduled work period are likely to exceed the 80-hour maximum, which would not be in substantial compliance with the requirement. These programs should adjust schedules so that fellows are scheduled to work fewer than 80 hours per week, which would allow fellows to remain beyond their scheduled work period when needed without violating the 80-hour requirement. Programs may wish to consider using night float and/or making adjustments to the frequency of in-house call to ensure compliance with the 80-hour maximum weekly limit.

Oversight

With increased flexibility introduced into the Requirements, programs permitting this flexibility will need to account for the potential for fellows to remain beyond their assigned work periods when developing schedules, to avoid exceeding the 80-hour maximum weekly limit, averaged over four weeks. The ACGME Review Committees will strictly monitor and enforce compliance with the 80-hour requirement. Where violations of the 80-hour requirement are identified, programs will be subject to citation and at risk for an adverse accreditation action.

Work from Home

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

During the public comment period many individuals raised questions and concerns related to this change. Some questioned whether minute by minute tracking would be required; in other words, if a fellow spends three minutes on a phone call and then a few hours later spends two minutes on another call, will the fellow need to report that time. Others raised concerns related to the ability of programs and institutions to verify the accuracy of the information reported by fellows. The new requirements are not an attempt to micromanage this process. Fellows are to track the time they spend on clinical work from home and to report that time to the program. Decisions regarding whether to report infrequent phone calls of very short duration will be left to the individual fellow. Programs will need to factor in time fellows are spending on clinical work at home when schedules are developed to ensure that fellows are not working in excess of 80 hours per week, averaged over four weeks. There is no requirement that programs assume responsibility for documenting this time. Rather, the program's responsibility is ensuring that fellows report their time from home and that schedules are structured to ensure that fellows are not working in excess of 80 hours per week, averaged over four weeks.

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)

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

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)

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

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

VI.F.3.a) **Clinical and educational work periods for fellows 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 fellow during this time.** (Core)

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Background and Intent: The additional time referenced in VI.F.3.a).(1) should not be used for the care of new patients. It is essential that the fellow continue to function as a member of the team in an environment where other members of the team can assess fellow fatigue, and that supervision for post-call fellows is provided. This 24 hours and up to an additional four hours must occur within the context of 80-hour weekly limit, averaged over four weeks.

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; or, (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)

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

VI.F.4.c) A Review Committee may grant rotation-specific exceptions for up to 10 percent or a maximum of 88 clinical and educational work hours to individual programs based on a sound educational rationale.

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

VI.F.4.c).(1) In preparing a request for an exception, the program director must follow the clinical and educational work hour exception policy from the *ACGME Manual of Policies and Procedures*. (Core)

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VI.F.4.c).(2) **Prior to submitting the request to the Review Committee, the program director must obtain approval from the Sponsoring Institution's GMEC and DIO.** (Core)

Background and Intent: The provision for exceptions for up to 88 hours per week has been modified to specify that exceptions may be granted for specific rotations if the program can justify the increase based on criteria specified by the Review Committee. As in the past, Review Committees may opt not to permit exceptions. The underlying philosophy for this requirement is that while it is expected that all fellows should be able to train within an 80-hour work week, it is recognized that some programs may include rotations with alternate structures based on the nature of the specialty. DIO/GMEC approval is required before the request will be considered by the Review Committee.

VI.F.5. Moonlighting

VI.F.5.a) **Moonlighting must not interfere with the ability of the fellow to achieve the goals and objectives of the educational program, and must not interfere with the fellow's fitness for work nor compromise patient safety.** (Core)

VI.F.5.b) **Time spent by fellows in internal and external moonlighting (as defined in the ACGME Glossary of Terms) must be counted toward the 80-hour maximum weekly limit.** (Core)

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

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.6.a) Fellows must have no more than six consecutive weeks of night float rotations, and no more than four months of night float rotations in total per year. (Detail)

Background and Intent: The requirement for no more than six consecutive nights of night float was removed to provide programs with increased flexibility in scheduling.

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.**

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

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

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

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

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

Osteopathic Recognition

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

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