ACGME Program Requirements for Graduate Medical Education in Vascular Neurology

Common Program Requirements are in BOLD

Effective: February, 2003

I. Introduction

I.A. Definition

I.A.1. Vascular neurology is an area of medicine in which selected neurological disorders involving the central nervous system due to ischemia or hemorrhage are assessed, monitored, treated and prevented using a combination of clinical evaluation, imaging, interventional techniques, and medication. Specialists in vascular neurology are expected to

I.A.1.a) Participate in an interdisciplinary care of patients with vascular disease that Incorporates aspects of epidemiology, basic science, clinical neurology, neuroimaging, critical care, endovascular surgical neuroradiology, neurological vascular surgery, neurosurgery, neurosonology, cerebral blood flow and metabolism, neurobehavior, and neurorehabilitation

I.A.1.b) Acquire detailed knowledge of the vascular supply of the central nervous system and its alteration by disease

I.A.1.c) Manage stroke patients in outpatient and inpatient settings, including critical care units

I.A.2. Vascular neurology includes the prevention, evaluation and treatment of a wide range of diseases resulting in vascular insults to the nervous system, including:

I.A.3. Cardiogenic brain embolism

I.A.3.a) Large vessel cerebral atherosclerosis

I.A.3.b) Aortic arch cerebral and spinal embolism

I.A.3.c) Small cerebral artery occlusive disease

I.A.3.d) Hemodynamic brain ischemia

I.A.3.e) Migraine

I.A.3.f) Hereditary and acquired hypercoagulable states

I.A.3.g) Disseminated intravascular coagulation, thrombotic thrombocytopenic purpura, other hematological disorders

I.A.3.h) Antiphospholipid antibody syndromes

I.A.3.i) Substance abuse and drug toxicities

I.A.3.j) Hypertensive encephalopathy

I.A.3.k) Arterial dissection

I.A.3.l) Vasculopathies including inflammatory, infectious, Moya-moya

I.A.3.m) Cerebral venous thrombosis

I.A.3.n) Genetic and metabolic disorders

I.A.3.o) Intracerebral hemorrhage

I.A.3.p) Aneurismal subarachnoid hemorrhage (SAH)

I.A.3.q) Subdural hematomas

I.A.3.r) Spinal cord infarction

I.A.3.s) Complications of vascular disease, including raised intracranial pressure, sepsis and venous thrombosis

I.A.3.t) Vascular malformations

I.B. Duration and Scope of Training

Training in vascular neurology shall encompass a total of one year that must be preceded by the completion of a residency program in neurology or child neurology accredited by the ACGME or the Royal College of Physicians and Surgeons (Canada). Elective time must be available for residents to pursue individual interests. Training must (1) be separate and distinct from all training required for certification in neurology and child neurology, and (2) include significant didactic and clinical experience in the care of patients with stroke and/or who are at risk for stroke in both inpatient and outpatient settings as detailed in the Educational Programs section (IV). In particular, training must provide the following clinical experiences

I.B.1. Inpatient management of patients with stroke, both ischemic and hemorrhagic;

I.B.2. Critical care management of patients with stroke, both ischemic and hemorrhagic;

I.B.3. Management of patients with neurosurgical cerebrovascular disorders including aneurysms and arteriovenous malformations;

I.B.4. Emergent management of patients with stroke, including emergency department management;

I.B.5. Care of patients in different settings, including nursing homes, medical rehabilitation centers and outpatient clinics;

I.B.6. Ordering and clinical correlation of diagnostic brain and vascular imaging;

I.B.7. Ordering and interpretation of diagnostic laboratory tests in stroke;

I.B.8. Involvement in community activities, including outpatient primary and secondary prevention of stroke;

I.B.9. Participation in the delivery of educational programs about stroke and stroke prevention, including teaching medical students, ancillary health professionals, and residents;

I.B.10. Consulting with other medical professionals, including cardiologists, radiologists, neurosurgeons, vascular surgeons and physiatrists in the overall care and management of stroke patients; and,

I.B.11. Participation in research, such as epidemiological studies, clinical trials, or laboratory research

I.C. Relation to Core Program

The one-year of training in vascular neurology must take place in a center in which there is an ACGME-accredited residency program in neurology and with the written approval and support of the director of the neurology program.

II. Institutions

II.A. Sponsoring Institution

One sponsoring institution must assume ultimate responsibility for the program, as described in the Institutional Requirements, and this responsibility extends to resident assignments at all participating institutions.

II.B. Participating Institutions

II.B.1. Assignment to an institution must be based on a clear educational rationale, integral to the program curriculum, with clearly-stated activities and objectives. When multiple participating institutions are used, there should be assurance of the continuity of the educational experience.

II.B.2. Assignment to a participating institution requires a letter of agreement with the sponsoring institution. Such a letter of agreement should:

II.B.2.a) identify the faculty who will assume both educational and supervisory responsibilities for residents;

II.B.2.b) **specify their responsibilities for teaching, supervision, and formal evaluation of residents, as specified later in this document;**

II.B.2.c) **specify the duration and content of the educational experience; and**

II.B.2.d) **state the policies and procedures that will govern resident education during the assignment.**

III. Program Personnel and Resources

III.A. Program Director

III.A.1. **There must be a single program director responsible for the program. The person designated with this authority is accountable for the operation of the program. In the event of a change of either program director or department chair, the program director should promptly notify the executive director of the Residency Review Committee (RRC) through the Web Accreditation Data System of the Accreditation Council for Graduate Medical Education (ACGME).**

III.A.2. **The program director, together with the faculty, is responsible for the general administration of the program, and for the establishment and maintenance of a stable educational environment. Adequate lengths of appointment for both the program director and faculty are essential to maintaining such an appropriate continuity of leadership.**

III.A.2.a) The program director, together with the faculty, is responsible in those activities related to the recruitment, selection, instruction, supervision, counseling, evaluation, and advancement of residents and the maintenance of records related to program accreditation,

III.A.2.b) The director and teaching staff of a program must prepare and comply with written educational goals for the program.

III.A.3. **Qualifications of the program director are as follows:**

III.A.3.a) **The program director must possess the requisite specialty expertise, as well as documented educational and administrative abilities.**

III.A.3.b) **The program director must be certified in the specialty by the** ABPN in Neurology and Vascular Neurology, **or possess qualifications judged to be acceptable by the RRC.**

III.A.3.c) **The program director must be appointed in good standing and based at the primary teaching site.**

III.A.3.d) Completion of at least one additional year of stroke or vascular neurology training. At least 50% of the program director's practice should be devoted to care of stroke patients.

III.A.3.e) Licensure to practice medicine in the state where the institution that sponsors the program is located (Certain federal programs are exempted.)

III.A.4. Responsibilities of the program director are as follows:

III.A.4.a) The program director must oversee and organize the activities of the educational program in all institutions that participate in the program. This includes selecting and supervising the faculty and other program personnel at each participating institution, appointing a local site director, and monitoring appropriate resident supervision at all participating institutions.

III.A.4.b) The program director is responsible for preparing an accurate statistical and narrative description of the program as requested by the RRC, as well as updating annually both program and resident records through the ACGME's Accreditation Data System.

III.A.4.c) The program director must ensure the implementation of fair policies, grievance procedures, and due process, as established by the sponsoring institution and in compliance with the Institutional Requirements.

III.A.4.d) The program director must seek the prior approval of the RRC for any changes in the program that may significantly alter the educational experience of the residents. Such changes, for example, include:

III.A.4.d).(1) the addition or deletion of a participating institution;

III.A.4.d).(2) a change in the format of the educational program;

III.A.4.d).(3) a change in the approved resident complement for those specialties that approve resident complement.

On review of a proposal for any such major change in a program, the RRC may determine that a site visit is necessary.

III.A.4.e) Full commitment to the residency program and devotion of sufficient time to provide leadership to the program and supervision of the residents in the program

III.A.4.f) Monitoring the content and ensuring the quality of the program.

III.A.4.g) Selection of residents for appointment to the program in accordance with institutional and departmental policies and procedures

III.A.4.h) Supervision of residents through explicit written descriptions of supervisory lines of responsibility for the care of patients. Such guidelines must be communicated to all members of the program staff. Residents must be provided with prompt, reliable systems for communication and interaction with supervisory physicians

III.A.4.i) Regular evaluation of residents' knowledge, skills, and overall performance, including the development of professional attitudes consistent with being a physician. The program director, with participation of members of the teaching staff, shall

III.A.4.i).(1) At least semiannually evaluate the knowledge, skills, and professional growth of the residents, using appropriate criteria and procedures

III.A.4.i).(2) Communicate each evaluation to the resident in a timely manner

III.A.4.i).(3) Advance residents to positions of higher responsibility only on the basis of evidence of their satisfactory progressive scholarship and professional growth

III.A.4.i).(4) Maintain a permanent record of evaluation for each resident and have it accessible to the resident and other authorized personnel.

III.A.4.j) Implementation of fair procedures as established by the sponsoring institution regarding academic discipline and resident complaints or grievances

III.A.4.k) Monitoring resident stress, including mental or emotional conditions inhibiting performance or learning and drug- or alcohol-related dysfunction. Program directors and teaching staff should be sensitive to the need for timely provision of confidential counseling and psychological support services to residents. Training situations that consistently produce undesirable stress on residents must be evaluated and modified

III.B. Faculty

III.B.1. At each participating institution, there must be a sufficient number of faculty with documented qualifications to instruct and supervise adequately all residents in the program.

III.B.1.a) The program providing training in vascular neurology must have at least two faculty neurologists, including the director, who have

completed training in this subspecialty. It is desirable that they be full-time members of the Department of Neurology.

III.B.2. **The faculty, furthermore, must devote sufficient time to the educational program to fulfill their supervisory and teaching responsibilities. They must demonstrate a strong interest in the education of residents, and must support the goals and objectives of the educational program of which they are a member.**

III.B.2.a) The faculty must demonstrate sound clinical and teaching abilities, a commitment to their own continuing medical education, and participation in scholarly activities.

III.B.3. **Qualifications of the physician faculty are as follows:**

III.B.3.a) **The physician faculty must possess the requisite specialty expertise and competence in clinical care and teaching abilities, as well as documented educational and administrative abilities and experience in their field.**

III.B.3.b) **The physician faculty must be certified in the specialty by the** ABPN in Neurology and Vascular Neurology, **or possess** appropriate educational **qualifications judged to be acceptable by the RRC.**

III.B.3.c) **The physician faculty must be appointed in good standing to the staff of an institution participating in the program.**

III.B.4. **The responsibility for establishing and maintaining an environment of inquiry and scholarship rests with the faculty, and an active research component must be included in each program. *Scholarship* is defined as the following:**

III.B.4.a) **the scholarship of *discovery*, as evidenced by peer-reviewed funding or by publication of original research in a peer-reviewed journal;**

III.B.4.b) **the scholarship of *dissemination*, as evidenced by review articles or chapters in textbooks;**

III.B.4.c) **the scholarship of *application*, as evidenced by the publication or presentation of, for example, case reports or clinical series at local, regional, or national professional and scientific society meetings.**

Complementary to the above scholarship is the regular participation of the teaching staff in clinical discussions, rounds, journal clubs, and research conferences in a manner that promotes a spirit of inquiry and scholarship (e.g., the offering of guidance and technical support for residents involved in research such as research design and statistical analysis); and the provision of support for residents'

participation, as appropriate, in scholarly activities.

III.B.4.d) Scholarship implies an in-depth understanding of basic mechanisms of normal and abnormal states and the application of current knowledge to practice.

III.B.4.e) While not all members of a teaching staff must be investigators, the staff as a whole must demonstrate broad involvement in scholarly activity, and vascular neurology training must be conducted in centers where there is research in vascular neurology.

III.B.4.f) The program must include opportunities for the resident to participate in research projects and scholarly work relating to the field of vascular neurology**.**

III.B.5. Qualifications of the nonphysician faculty are as follows:

III.B.5.a) Nonphysician faculty must be appropriately qualified in their field.

III.B.5.b) Nonphysician faculty must possess appropriate institutional appointments.

III.B.6. Appropriate expertise in the areas defined in Section I.B., above, must be present among the director and the faculty. The RRC recognizes that expertise in stroke is available from physicians board certified in many medical specialties, particularly in Physical Medicine and Rehabilitation, Cardiology, Neurosurgery, Vascular Surgery and Psychiatry, and actively encourages multidisciplinary cooperation in the training of residents.

III.B.7. The faculty shall devote sufficient time to the training program to ensure adequate clinical training of the resident in vascular neurology and will be primarily involved in direction of the resident during the one year training.

III.B.8. A member of the teaching staff of each participating institution must be designated by the program director to assume responsibility for the day-to-day activities of the program at that institution, with overall coordination by the program director.

III.B.9. The teaching staff must be organized and have regular documented meetings to review program goals and objectives as well as program effectiveness in achieving them. At least one resident representative must participate in these reviews.

III.B.10. The teaching staff must periodically evaluate the utilization of the resources available to the program, the contribution of each institution participating in the program, the financial and administrative support of the program, the volume and variety of patients available to the program for educational purposes, the performance of members of the teaching staff, and the quality of supervision of residents.

III.C. Other Program Personnel

Additional necessary professional, technical, and clerical personnel must be provided to support the program.

III.C.1. This must include personnel to support the administration and educational conduct of the program.

III.D. Resources

The program must ensure that adequate resources (e.g., sufficient laboratory space and equipment, computer and statistical consultation services) are available.

III.D.1. Patient Population

There must be an adequate number and variety of patients in both inpatient and outpatient settings to expose residents to the broad spectrum of vascular diseases of the brain. Inpatient experience should include evaluation of a substantial number of stroke patients. No more than 50% of these should be hemorrhagic strokes. Outpatient experience should include management of at least 50 patients for whom the resident is the primary physician under supervision of a faculty member.

III.D.2. Facilities

Vascular neurology shall be within the Department or Division of Neurology and have facilities adequate for the educational program. There must be adequate space and equipment for the educational program, including meeting rooms, classrooms with audiovisual and other educational aids, office space for staff and residents, pertinent library materials, and diagnostic, therapeutic and research facilities.

III.D.3. Library

III.D.3.a) Residents must have ready access to a major medical library, either at the institution where the residents are located or through arrangement with convenient nearby institutions.

III.D.3.b) Library services should include the electronic retrieval of information from medical databases.

III.D.3.c) There must be access to an on-site library or to a collection of appropriate texts and journals in each institution participating in a residency program. On-site libraries and/or collections of texts and journals must be readily available during nights and weekends.

III.E. Other Teaching Staff

Faculty with suitable training and experience from other disciplines should be included in the teaching program.

IV. Resident Appointments

IV.A. Eligibility Criteria

The program must comply with the criteria for resident eligibility as specified in the Institutional Requirements.

IV.B. Number of Residents

The RRC will approve the number of residents based upon established written criteria that include the adequacy of resources for resident education (e.g., the quality and volume of patients and related clinical material available for education), faculty-resident ratio, institutional funding, and the quality of faculty teaching.

IV.C. Resident Transfers

To determine the appropriate level of education for residents who are transferring from another residency program, the program director must receive written verification of previous educational experiences and a statement regarding the performance evaluation of the transferring resident prior to their acceptance into the program. A program director is required to provide verification of residency education for residents who may leave the program prior to completion of their education.

IV.D. Appointment of Fellows and Other Students

The appointment of fellows and other specialty residents or students must not dilute or detract from the educational opportunities available to regularly appointed residents.

V. Program Curriculum

V.A. Program Design

V.A.1. Format

The program design and sequencing of educational experiences will be approved by the RRC as part of the review process.

V.A.1.a) All educational components of a residency program should be related to program goals.

V.A.1.b) Participation by any institution providing 2 months or more of training in a program must be approved by the RRC.

V.A.2. **Goals and Objectives**

The program must possess a written statement that outlines its educational goals with respect to the knowledge, skills, and other attributes of residents for each major assignment and for each level of the program. This statement must be distributed to residents and faculty, and must be reviewed with residents prior to their assignments.

V.A.2.a) It should be readily available for review.

V.B. **Specialty Curriculum**

The program must possess a well-organized and effective curriculum, both didactic and clinical. The curriculum must also provide residents with direct experience in progressive responsibility for patient management.

V.C. **Residents Scholarly Activities**

Each program must provide an opportunity for residents to participate in research or other scholarly activities, and residents must participate actively in such scholarly activities.

V.D. **ACGME Competencies**

(N.B.: Section V. D. does not apply to certain subspecialties)

V.E. Curriculum

The training program is largely a clinical experience in which the resident develops and executes a plan of evaluation and treatment for patients with various cerebrovascular disorders. In addition to teaching the appropriate technical skills, the curriculum must include instruction in the following:

V.E.1. Fundamental Mechanisms of Stroke and Other Nervous System Vascular Disorders

V.E.2. Etiopathogenic Characterization of Stroke and Other Nervous System Vascular Disorders

V.E.3. Clinical Manifestations of Stroke and Other Nervous System Vascular Disorders

V.E.4. Diagnostic Strategies in Stroke and Other Nervous System Vascular Disorders

V.E.5. Treatment Strategies in Stroke and Other Nervous System Vascular Disorders

V.E.6. Epidemiologic issues

V.F. Seminars and Conferences

The section of vascular neurology must conduct seminars and conferences that include:

V.F.1. Formal lectures and teaching conferences in Vascular Neurology on a schedule that will allow the training program to cover all of the topics listed under I.A.2.

V.F.2. A monthly didactic teaching conference organized by the faculty on topics that cover the scope of vascular neurology as outlined in Section I of these Program Requirements.

V.F.3. The monthly conference should be supplemented by journal clubs, pathology meetings, neuroanatomy courses, neuroscience grand rounds related to vascular neurology and multidisciplinary conferences with neuroradiology, neurosurgery, and neuropathology.

V.F.4. Trainees should make regular patient management rounds with the attending faculty and these should be supplemented with weekly or bi-weekly teaching rounds during which specific vascular neurology patient management issues are discussed in depth by the faculty.

V.G. Teaching and Supervision

V.G.1. Supervisory faculty and staff must be available on a full-time basis. There must be a 1:1 faculty and resident ratio.

V.G.2. The resident must be given an active role in the teaching and training of neurology residents in which the section resides.

V.G.3. Clinical and Basic Science Teaching

V.G.3.a) Clinical Science

The resident must have instruction and practical experience to foster the development of diagnostic, procedural, technical, and interventional skills essential to the practice of vascular neurology, including

V.G.3.a).(1) Opportunities to observe, evaluate, and manage patients of all ages with a wide variety of disorders of the cerebrovascular and nervous systems

V.G.3.a).(2) Learning about the effectiveness of procedures to manage stroke

V.G.3.a).(3) Participating in clinical experiences that provide for basic and advanced training and education, as well as professional development

V.G.3.a).(4) Acquiring systems-based skills that include working in outpatient and inpatient settings and effectively utilizing health care resources, including pathology and radiology services

V.G.3.a).(5) Participating in problem based learning that includes experience in the areas critical to vascular neurology as outlined in Section I.A.2

V.G.3.a).(6) Developing and executing plans for evaluation and treatment, including the appropriate

V.G.3.a).(7) Technical skills for the non-invasive management of stroke patients. These skills must include familiarity with the indications for intubation, extubation/weaning and the general principles of respirator management and the placement of catheters for the supportive care and pharmacological treatment of strokes

V.G.3.a).(8) Opportunities to formulate a clinical diagnosis and to order and use laboratory data to clinically evaluate a patient's condition and to support outpatient and inpatient diagnostic evaluations

V.G.3.a).(9) Progressive experience for training as outlined in Section I.B that includes caring for a sufficient number of stroke patients to achieve competence in the assessment of patients with a wide range of vascular neurology disorders

V.G.3.b) Basic Science

Residents must be provided with an advanced and extensive background in those basic sciences on which vascular neurology is founded. In particular, the basic science program must include neuroepidemiology, neuroanatomy, neuropharmacology, neuropathology, and neurobiology, as well as mechanisms of atherosclerosis and coagulation. Didactic lectures and seminars must include the basic neurological sciences as they pertain to stroke.

V.G.4. Resident/Patient Ratio

The program director must ensure an adequate number and variety of patients to provide a sound educational program. Particular attention should be given to achieving a balance in the age and gender of patients, in patients with short-term and long-term neurological problems, as well as in the number of inpatients and outpatients.

V.G.5. Faculty/Resident Ratio

There must be a ratio of at least one vascular neurology faculty for each vascular neurology resident. Faculty must demonstrate diverse interests and skills to contribute to the depth and breadth of training necessary to fulfill the program requirements for residency education in vascular neurology, to ensure adequate clinical experience for residents, and to provide for an educational environment that supports seminars, conferences and reliable supervision of residents.

V.H. Diagnostic Skills

The residents must learn how to integrate information obtained from patient history, physical examination, imaging study results, and biochemical and molecular tests results to arrive at an accurate and timely diagnosis and treatment plan. The resident is required to learn about the indications for and potential limitations of diagnostic tests and to interpret the results in the context of the clinical situation. These diagnostic tests must include the following imaging studies: cranial and spinal MRIs and CTs, magnetic resonance imaging, cerebral angiography, carotid and cranial doppler studies, single photon emission tomography (SPECT), photon emission tomography (PET). The resident must also learn the appropriate biochemical and molecular testing for strokes in patients of different age groups. The resident should also learn the temporal profile of the clinical, biochemical and radiological changes that accompany vascular insults of the nervous system. The acquisition of the diagnostic skill must be provided by clinical assignments that provide a progressive increase in responsibility for patient care with direct supervision by a faculty member or staff; appropriate faculty supervision is essential throughout the program.

V.H.1. Subspecialty Experience

While a wide range of clinical experience is mandatory, each resident should have extensive experience in one or more areas of vascular neurology. Clinical assignments need not be identical for each resident. Subspecialty experience should accommodate individual interests.

V.H.2. Resident Responsibility for Teaching

The resident's education in vascular neurology is reinforced by teaching the discipline to other residents in neurology and other disciplines and to medical students, nurses, and other health care personnel. Residents must be given this opportunity.

VI. Resident Duty Hours and the Working Environment

Providing residents with a sound didactic and clinical education must be carefully planned and balanced with concerns for patient safety and resident well-being. Each program must ensure that the learning objectives of the program are not compromised by excessive reliance on residents to fulfill service obligations. Didactic and clinical education must have priority in the allotment of residents' time and energy. Duty hour assignments must recognize that faculty and

residents collectively have responsibility for the safety and welfare of patients.

VI.A. Supervision of Residents

VI.A.1. All patient care must be supervised by qualified faculty. The program director must ensure, direct, and document adequate supervision of residents at all times. Residents must be provided with rapid, reliable systems for communicating with supervising faculty.

VI.A.2. Faculty schedules must be structured to provide residents with continuous supervision and consultation.

VI.A.3. Faculty and residents must be educated to recognize the signs of fatigue, and adopt and apply policies to prevent and counteract its potential negative effects.

VI.B. Duty Hours

VI.B.1. Duty hours are defined as all clinical and academic activities related to the residency program; i.e., patient care (both inpatient and outpatient), administrative duties relative to patient care, the provision for transfer of patient care, time spent in-house during call activities, and scheduled activities such as conferences. Duty hours do *not* include reading and preparation time spent away from the duty site.

VI.B.2. Duty hours must be limited to 80 hours per week, averaged over a four-week period, inclusive of all in-house call activities.

VI.B.3. Residents must be provided with 1 day in 7 free from all educational and clinical responsibilities, averaged over a 4-week period, inclusive of call. *One day* is defined as 1 continuous 24-hour period free from all clinical, educational, and administrative duties.

VI.B.4. Adequate time for rest and personal activities must be provided. This should consist of a 10-hour time period provided between all daily duty periods and after in-house call.

VI.C. On-call Activities

The objective of on-call activities is to provide residents with continuity of patient care experiences throughout a 24-hour period. *In-house call* is defined as those duty hours beyond the normal work day, when residents are required to be immediately available in the assigned institution.

VI.C.1. In-house call must occur no more frequently than every third night, averaged over a 4-week period.

VI.C.2. Continuous on-site duty, including in-house call, must not exceed 24 consecutive hours. Residents may remain on duty for up to 6

additional hours to participate in didactic activities, transfer care of patients, conduct outpatient clinics, and maintain continuity of medical and surgical care.

VI.C.3. **No new patients may be accepted after 24 hours of continuous duty.**

VI.C.4. ***At-home call* (or *pager call*) is defined as a call taken from outside the assigned institution.**

VI.C.4.a) **The frequency of at-home call is not subject to the every-third- night limitation. At-home call, however, must not be so frequent as to preclude rest and reasonable personal time for each resident. Residents taking at-home call must be provided with 1 day in 7 completely free from all educational and clinical responsibilities, averaged over a 4-week period.**

VI.C.4.b) **When residents are called into the hospital from home, the hours residents spend in-house are counted toward the 80-hour limit.**

VI.C.4.c) **The program director and the faculty must monitor the demands of at-home call in their programs, and make scheduling adjustments as necessary to mitigate excessive service demands and/or fatigue.**

VI.C.5. There should be adequate physician coverage if unexpected patient care needs create resident fatigue sufficient to jeopardize patient care during or following on-call periods.

VI.D. Moonlighting

VI.D.1. **Because residency education is a full-time endeavor, the program director must ensure that moonlighting does not interfere with the ability of the resident to achieve the goals and objectives of the educational program.**

VI.D.2. **The program director must comply with the sponsoring institution's written policies and procedures regarding moonlighting, in compliance with the ACGME Institutional Requirements.**

VI.D.3. **Any hours a resident works for compensation at the sponsoring institution or any of the sponsor's primary clinical sites must be considered part of the 80-hour weekly limit on duty hours. This refers to the practice of *internal moonlighting*.**

VI.E. Oversight

VI.E.1. **Each program must have written policies and procedures consistent with the Institutional and Program Requirements for resident duty hours and the working environment. These policies must be distributed to the residents and the faculty. Duty hours must be**

monitored with a frequency sufficient to ensure an appropriate balance between education and service.

VI.E.2. **Back-up support systems must be provided when patient care responsibilities are unusually difficult or prolonged, or if unexpected circumstances create resident fatigue sufficient to jeopardize patient care.**

VI.F. Duty Hours Exceptions

An RRC may grant exceptions for up to 10% of the 80-hour limit to individual programs based on a sound educational rationale. Prior permission of the institution's GMEC, however, is required.

VII. Evaluation

VII.A. Resident

VII.A.1. Formative Evaluation

The faculty must evaluate in a timely manner the residents whom they supervise. In addition, the residency program must demonstrate that it has an effective mechanism for assessing resident performance throughout the program, and for utilizing the results to improve resident performance.

VII.A.1.a) **Assessment should include the use of methods that produce an accurate assessment of residents' competence in patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice.**

VII.A.1.b) **Assessment should include the regular and timely performance feedback to residents that includes at least semiannual written evaluations. Such evaluations are to be communicated to each resident in a timely manner, and maintained in a record that is accessible to each resident.**

VII.A.1.c) **Assessment should include the use of assessment results, including evaluation by faculty, patients, peers, self, and other professional staff, to achieve progressive improvements in residents' competence and performance.**

VII.A.2. Final Evaluation

The program director must provide a final evaluation for each resident who completes the program. This evaluation must include a review of the resident's performance during the final period of education, and should verify that the resident has demonstrated sufficient professional ability to practice competently and independently. The final evaluation must be part of the resident's

permanent record maintained by the institution.

VII.A.3. Resident evaluation by staff must be made at regular intervals so that areas of weakness and strength can be communicated to the resident. Records shall be maintained documenting resident experience and performance. Periodic review of the resident's performance is essential for planning his or her subsequent educational program. The evaluation will include judging the fund of knowledge, basic clinical competence, general skills in the primary specialty, and the specific technical skills required for vascular neurology. The summary and final evaluation of the resident in vascular neurology must be prepared by the program director of the vascular neurology training program and should reflect the periodic evaluation of the entire faculty.

VII.B. Faculty

The performance of the faculty must be evaluated by the program no less frequently than at the midpoint of the accreditation cycle, and again prior to the next site visit. The evaluations should include a review of their teaching abilities, commitment to the educational program, clinical knowledge, and scholarly activities. This evaluation must include annual written confidential evaluations by residents.

VII.C. Program

The educational effectiveness of a program must be evaluated at least annually in a systematic manner.

VII.C.1. Representative program personnel (i.e., at least the program director, representative faculty, and one resident) must be organized to review program goals and objectives, and the effectiveness with which they are achieved. This group must conduct a formal documented meeting at least annually for this purpose. In the evaluation process, the group must take into consideration written comments from the faculty, the most recent report of the GMEC of the sponsoring institution, and the residents' confidential written evaluations. If deficiencies are found, the group should prepare an explicit plan of action, which should be approved by the faculty and documented in the minutes of the meeting.

VII.C.2. The program should use resident performance and outcome assessment in its evaluation of the educational effectiveness of the residency program. Performance of program graduates on the certification examination should be used as one measure of evaluating program effectiveness. The program should maintain a process for using assessment results together with other program evaluation results to improve the residency program.

VII.C.3. In particular, the quality of the curriculum and the extent to which the educational goals have been met by residents must be assessed.

VII.C.4. Written confidential evaluations by residents must be utilized in this process.

VIII. Experimentation and Innovation

Since responsible innovation and experimentation are essential to improving professional education, experimental projects along sound educational principles are encouraged. Requests for experimentation or innovative projects that may deviate from the program requirements must be approved in advance by the RRC, and must include the educational rationale and method of evaluation. The sponsoring institution and program are jointly responsible for the quality of education offered to residents for the duration of such a project.

IX. Certification

Residents who plan to seek certification by the ABPN in Neurology and Vascular Neurology **should communicate with the office of the board regarding the full requirements for certification.**

X. Other

X.A. Use of Board Examinations

One measure of the quality of a training program is the proportion of its graduates who take the examination in vascular neurology provided by the American Board of Psychiatry and Neurology, as well as their performance on those examinations.

X.B. Review of the Program

The provisions of the Institutional Requirements for residency training of the ACGME must also be met for approval of training in vascular neurology.

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