Clinical Neuromuscular Pathology Program Requirements

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Clinical Neuromuscular Pathology Program Requirements

[The common program requirements are standards required of accredited programs in all UCNS subspecialties. They are shown in **bold** typeface below. Requirements in regular typeface have been set by the Clinical Neuromuscular Pathology subspecialty and approved by the UCNS Board of Directors.]

I. Introduction

A. Clinical neuromuscular pathology is a subspecialty area of neurology defined by special competence in the interpretation of muscle and nerve pathology. It differs from neuropathology because it is highly integrated with the clinical management of neuromuscular disease. All UCNS training programs in clinical neuromuscular pathology must incorporate the evaluation of muscle and nerve in the context of clinical patient care.

B. Purpose of the Training Program

1. The purpose of the training program is to prepare the physician for independent practice in Clinical Neuromuscular Pathology. **This training must be based on supervised clinical work with increasing patient care responsibilities and transition to independent practice over the course of the training program.**

2. The program must require its fellows to obtain competencies in the six core competency areas defined by the Accreditation Council for Graduate Medical Education (ACGME). It is the responsibility of the program to provide precise definitions of specific knowledge, skills, and behaviors, as well as educational opportunities in which the fellow must demonstrate competence in those areas. The program's curricular goals and objectives must correlate to the appropriate ACGME Core Competencies and global learning objectives.

II. Institutional Support

There are three types of institutions that may comprise a program: 1) the sponsoring institution, which assumes ultimate responsibility for the program and is required of all programs, 2) the primary institution, which is the primary clinical training site and may or may not be the sponsoring institution, and 3) the participating institution, which provides required experience that cannot be obtained at the primary or sponsoring institutions.

A. Sponsoring Institution

1. The sponsoring institution must be accredited by the ACGME or Canadian Excellence in Residency Accreditation (CanERA), formerly the Royal College of Physicians and Surgeons of Canada (RCPSC), and meet the current ACGME Institutional Requirements or CanERA General Standards of Accreditation for Institutions with Residency Programs. This responsibility extends to fellow assignments at all primary and participating institutions. The sponsoring institution must be appropriately organized for the conduct of graduate medical education (GME) in a scholarly environment and must be committed to excellence in both medical education and patient care.

2. A letter demonstrating the sponsoring institution's responsibility for the program must be submitted. The letter must:

a) confirm sponsorship and oversight of the training program's GME activities,

b) state the sponsoring institution's commitment to training and education, which includes the resources provided by the sponsoring institution, the primary institution, and/or the departments that support the program

director's fulfillment of his or her duties as described in these program requirements, and

c) be signed by the designated institution official of the institution as defined by ACGME or postgraduate dean as defined by CanERA.

3. Institutional support and oversight are further demonstrated by the required designated institution official/postgraduate dean signature on all program accreditation and reaccreditation applications and annual report submissions.

B. Primary Institution

1. Assignments at the primary institution must be of sufficient duration to ensure a quality educational experience and must provide sufficient opportunity for continuity of care. The primary institution must demonstrate the ability to promote the overall program goals and support educational and peer activities.

2. A letter from the appropriate department chair(s) at the primary institution must be submitted. The letter must:

a) confirm the relationship of the primary institution to the program,

b) state the primary institution's commitment to training and education, and

c) list specific activities that will be undertaken, supported, and supervised at the primary institution.

C. Participating Institutions

1. Assignments to participating institutions must be based on a clear educational rationale, must have clearly stated learning objectives and activities, and should provide resources not otherwise available to the program. When multiple participating institutions are used, there should be assurance of the continuity of the educational experience.

2. Assignments at participating institutions must be of sufficient duration to ensure a quality educational experience and should provide sufficient opportunity for continuity of care. All participating institutions must demonstrate the ability to promote the overall program goals and support educational and peer activities.

3. If a participating institution is used, a participating institution letter must be submitted. The letter must:

a) confirm the relationship of the participating institution to the program,

b) state the participating institution's commitment to training and education,

c) list specific activities that will be undertaken, supported, and supervised at the participating institution, and

d) be signed by the appropriate official, e.g., department chair or medical director, of the participating institution.

4. The training must take place in facilities that have been approved under the Clinical Laboratory Improvement Act (CLIA) and that are supervised by physicians who meet all state licensing requirements.

5. If more than one facility is used in the program, there must be a clear educational rationale for the use of each participating institution.

III. Facilities and Resources

A. Each program must demonstrate that it possesses the facilities and resources necessary to support a quality educational experience.

1. Additional professional, technical, and administrative personnel must be provided to adequately support the fellowship training program in attaining its educational and administrative goals.

2. **In programs not situated in a department of neurology, evidence must be provided that demonstrates fellows have access to neurological services.**
3. The core neurology program must be a part of, or affiliated with, clinical care facilities that have a full range of patient services.
4. There must be adequate equipment, laboratory space, office facilities, computers, meeting rooms, classrooms, and research space to support service, teaching, and educational responsibilities.
5. The Clinical Neuromuscular Pathology program should be integrated into a full-service clinical neuromuscular medicine program. ~~providing evaluation of the patient~~.
6. The Clinical Neuromuscular Pathology program must provide the fellow a sufficient variety and volume of pathological material. ~~This shall be comprised of at least 100 new biopsy cases of nerve and muscle acquired in the course of the training period, including a minimum of 30 specimens of nerve and 30 specimens of muscle.~~
7. ~~Fellows must have access to computers.~~

IV. Faculty

The faculty of accredited programs consists of: 1) the program director, 2) core faculty, and 3) other faculty. Core faculty are physicians who oversee clinical training in the subspecialty. The program director is considered a core faculty member when determining the fellow complement. Other faculty are physicians and other professionals determined by the Subspecialty to be necessary to deliver the program curriculum. The program director and faculty are responsible for the general administration of the program and for the establishment and maintenance of a stable educational environment. Adequate durations of appointments for the program director and core faculty members are essential for maintaining such an environment. The duration of appointment for the program director must provide for continuity of leadership.

A. Program Director Qualifications

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 and he or she should be a member of the faculty or medical staff of the primary institution.** At institutions where the nerve and muscle biopsies are handled in two different laboratories under two different directors, ~~directors of the two laboratories~~they can be co-directors of the program. However, there must be a single administrative program director designated responsible for the program and communication with UCNS.
2. **The program director must:**
   a. **possess requisite specialty expertise as well as documented educational and administrative abilities and experience in his or her field,**
   b. **be certified by the American Board of Medical Specialties (ABMS), RCPSC,** American Osteopathic Association (AOA) **or College of Family Physicians of Canada (CFPC) in** neurology or child neurology~~or other neurologic area~~,
   c. **possess a current, valid, unrestricted, and unqualified license to practice medicine in the state or province of the program, and**
   d. **be certified, and maintain certification, in** Clinical Neuromuscular Pathology **by the UCNS.**
      i. **New programs without a certified program director may apply for accreditation, as long as the application contains an attestation that the program director will become certified at the next available opportunity,**

which includes certification through the UCNS faculty diplomate pathway. The attestation must contain a statement that the program understands that should the program director fail to achieve certification, the program must immediately submit a program change request appointing an appropriately qualified program director.

3. The program director should be an experienced, active clinician, and must devote sufficient time to the program to ensure achievement of the educational goals and objectives.

B. Program Director Responsibilities

1. The program director must:

a. oversee and organize the activities of the educational program in all institutions participating in the program including selecting and supervising the faculty and other program personnel at each institution, and monitoring appropriate fellow supervision and evaluation at all institutions used by the program,

b. prepare accurate statistical and narrative descriptions of the program as requested by the UCNS as well as update the program and fellow records annually,

c. ensure the implementation of fair policies and procedures, as established by the sponsoring institution, to address fellow grievances and due process in compliance with the ACGME's or CanERA's institutional requirements,

d. monitor fellow stress, including mental or emotional conditions inhibiting performance or learning, and drug- or alcohol-related dysfunction, and

e. obtain prior approval of the UCNS for changes in the program that may significantly alter the educational experience of the fellows. Upon review of a proposal for a program change, the UCNS may determine that additional oversight or a site visit is necessary. Examples of changes that must be reported include:

1) change in the program director,

2) the addition or deletion of sponsoring, primary, or participating institution(s),

3) change in the number of approved fellows, and

4) change in the format of the educational program

f. Supervise the recruitment and appointment process for applicants, including compliance with appropriate credentialing policies and procedures.

g. Ensure and document proper, direct, supervision of all fellows at all times by appropriately qualified faculty. Such supervision must be appropriate to the level and experience of the fellow.

h. Monitor the progress of each Clinical Neuromuscular Pathology fellow, including the maintenance of a training record that documents completion of all required components of the program, as well as the evaluations of performance by supervisors and teachers.

i. Monitor the quality of didactic and clinical experiences, including the collection and review of periodic written evaluations by the trainee of all such supervision and experiences.

j. Maintain all training records, including those related to appointment, departmental processes regarding due process, sickness and other leaves, call responsibilities, and vacation time.

k. Place a statement in the training record of each fellow upon the completion of the program that documents the satisfactory completion of all program requirements.

C. Core Faculty Qualifications

1. Each core faculty member must:

a. possess requisite specialty expertise as well as documented educational and administrative abilities and experience in his or her field,

b. be currently certified by ABMS, RCPSC, AOA, **or CFPC in** neurology or child neurology,

c. possess a current, valid, unrestricted, and unqualified license to practice medicine in the state or province of the program, and

d. be appointed in good standing to the faculty of an institution participating in the program.

2. The core faculty must include at least one neurologist. The neurologist may also be the program director.

D. Core Faculty Responsibilities

1. There must be a sufficient number of core faculty members with documented qualifications at each institution participating in the program to instruct and adequately supervise all fellows in the program.

2. Core faculty members must:

a. devote sufficient time to the educational program to fulfill their supervisory and teaching responsibilities,

b. evaluate the fellows they supervise in a timely manner,

c. demonstrate a strong interest in the education of fellows, demonstrate competence in both clinical care and teaching abilities, support the goals and objectives of the educational program, and demonstrate commitment to their own continuing medical education by participating in scholarly activities, and

d. devote sufficient time ~~of their current schedule~~ to the educational program in Clinical Neuromuscular Pathology to assure fulfillment of its goals and objectives.

E. Other Faculty

The program must provide additional professional, technical, and clerical personnel as needed to support the administration and educational conduct of the program.

1. The laboratory must be directed by qualified physicians who are licensed to practice medicine and are members in good standing of the institution medical staff.
2. There must be a sufficient number (at least one) of qualified histotechnologists as well as clinical and other staff to support laboratory work and the educational program.

V. Fellow Appointment

A. Duration of Training

1. **Fellowship programs must be no less than** 12 months**, the entirety of which must be spent in patient-oriented** Clinical Neuromuscular Pathology **education. At least 80% of the fellow's time must be spent in supervised training activities in the practice of** Clinical Neuromuscular Pathology**, including didactic and clinical education specific to the subspecialty, electives, and scholarly activities.**
2. **Flexible Fellowships**
   a. **Programs may offer flexible fellowships for a variety of reasons, including, but not limited to: combined clinical/research fellowships or to allow fellows opportunities for work/life balance. Programs that combine clinical and research training (clinician-scientist fellowship program) may be up to 36 months in duration for a one-year program and 48 months for a two-year program. At least** 12 **full months of this extended-program period must be spent in patient-oriented** Clinical Neuromuscular Pathology **clinical, educational, and scholarly activity, the distribution of which across this extended period is at the program's discretion.**
3. ~~The training period in clinical neuromuscular pathology must be at least 12 months of education subsequent to satisfactory completion of an Accreditation Council for Graduate Medical Education (ACGME) or Royal College of Physicians and Surgeons of Canada (RCPSC) accredited residency in neurology.~~
4. Training in clinical neuromuscular pathology that occurred during general neurology residency training will not be counted toward meeting this requirement.
5. ~~While clinical neuromuscular pathology training is a minimum of 12 months of defined training, if integrated with a research program or further pathological training in nerve or muscle, the clinical neuromuscular pathology training program should not exceed 24 months. However, accreditation is only applied to the 12 months of clinical training.~~

B. Fellow Eligibility

1. **The fellow must possess a current valid and unrestricted license to practice medicine in the United States or its territories or Canada.**
2. **The fellow must be a graduate of a residency program in neurology accredited by the ACGME, RCPSC, or CanERA.**
3. **The fellow must be board certified or eligible for certification by the ABMS, RCPSC,** AOA, **or CFPC in neurology~~specialty~~.**

C. Fellow Complement

The fellow complement is the number of fellows allowed to be enrolled in the program at any given time, e.g., across all training years.

1. **There must be at least** 1 **core faculty member(s) for every** 2 **fellow(s)**.

D. Appointment of Fellows and Other Students

1. **The appointment of fellows who do not meet the eligibility criteria above must not dilute or detract from the educational opportunities of regularly appointed** Clinical Neuromuscular Pathology **fellows. Programs must include these fellows in all reports submitted to UCNS to demonstrate compliance with the approved fellow complement. Fellows who are enrolled without meeting the eligibility**

criteria must be notified that they may not apply for UCNS certification examinations as graduates of an accredited program.

VI. Educational Program

A. Role of the Program Director and Faculty

2. The program director, with assistance of the faculty, is responsible for developing and implementing the academic and clinical program of fellow education by:

a. preparing a written statement to be distributed to fellows and faculty and reviewed with fellows prior to assignment, which outlines the educational goals and objectives of the program with respect to the knowledge, skills, and other attributes to be demonstrated by fellows for the entire fellowship and on each major assignment and each level of the program,

b. preparing and implementing a comprehensive, well-organized, and effective curriculum, both academic and clinical, which includes the presentation of core specialty knowledge supplemented by the addition of current information, and

c. providing fellows with direct experience in progressive responsibility for patient management.

B. Competencies

1. A fellowship program must require that its fellows obtain competence in the AGCME Core Competencies to the level expected of a new practitioner in the subspecialty. Programs must define the specific and unique learning objectives in the area including the knowledge, skills, and behaviors required and provide educational experiences as needed in order for their fellows to demonstrate the core competencies and the following objectives:

1) Nerve

a) Upon completion of the training program, the fellow should have acquired the following fund of knowledge and skills:

1. Recognize preparatory artifacts and pathologic abnormality in nerve tissue obtained at biopsy.
2. Correlate the pathological findings with clinical manifestations and genetic findings of nerve disease.
3. Accurately and concisely describe the pathologic findings of biopsy specimens, formulate an appropriate pathologic diagnosis, and offer comments about the diagnosis based on the biopsy findings in the context of the clinical history.
4. Become familiar with the relevantnt ~~current and previous~~ literature on neuromuscular diseases.

b) Specifically, the fellow will:

1. Understand the indications for obtaining a nerve biopsy and choose an appropriate biopsy site based on the clinical evaluation and electrophysiologic findings.
2. Be aware of potential artifacts due to the nerve biopsy procedure; hemorrhage into the specimen, crushing of tissue, damage by inappropriate dissection, and insufficient amount of tissue.
3. Recognize artifacts due to improper handling, flash-freezing, fixation, osmification, sectioning, staining, and storage of the biopsy specimen.

4. Learn the use and application of standard histological and histochemical staining.
5. Be familiar with the use and application of standard immunostains, semithin sections, teased nerve fiber preparation and EM exam.~~.~~

2) Muscle

a) Upon completion of the training program, the fellow should have acquired the following fund of knowledge and skills:

1. Recognize preparatory artifacts and pathologic abnormality in muscle tissue obtained at biopsy.
2. 3.Correlate the pathological findings with clinical manifestations and genetic findings of muscle diseases.
3. Accurately and concisely describe the pathologic findings in biopsy specimens, formulate an appropriate pathological diagnosis, and offer comments about the diagnosis based on the biopsy findings in the context of the clinical history.
4. Become familiar with the relevant ~~current and previous~~ literature on neuromuscular diseases.

b) Specifically, the fellow will:

1. Understand the indications for obtaining a muscle biopsy and choose an appropriate biopsy site based on the clinical evaluation and electrophysiologic findings.
2. Be aware of potential artifacts due to the muscle biopsy procedure: hemorrhage into the specimen, crushing of tissue, damage by inappropriate dissection, and insufficient amount of tissue.
3. Recognize artifacts due to improper handling, flash-freezing, fixation, sectioning, staining, and storage of biopsy specimen.
4. Learn the use and application of standard histological and histochemical staining.
5. Be familiar with the use and application of standard immunostains.

~~1.~~2. **The program must use the ACGME Core Competencies to develop competency-based goals and objectives for all educational experiences during the period of fellowship training in** Clinical Neuromuscular Pathology**.**

C. Didactic Components

1. **The program must include structured, fellow-specific educational experiences such as rounds, conferences, case presentations, lectures, and seminars that complement the clinical and self-directed educational opportunities. Together, various educational experiences must facilitate the fellow's mastery of the core content areas and foster the competencies as described above.**
2. The program must provide the fellow with instruction and experience in the techniques of obtaining, processing, and evaluating tissue to ensure that quality specimens suitable for evaluation are obtained.
3. The program must provide a lecture series, selected readings or other clearly identified mechanisms for addressing core content (See *Clinical Neuro~~M~~muscular Pathology Core Curriculum)*.
4. Fellows should present a minimum of two clinical or pathology neuromuscular conferences each year and participate in subspecialty conferences and journal clubs.

D. Clinical Components

1. **The fellow's clinical experience must be spent in supervised activities related to** Clinical Neuromuscular Pathology. **Clinical experiences may include all training relevant to** Clinical Neuromuscular Pathology, **including lectures and individual didactic experiences and journal clubs emphasizing clinical matters.**
2. Fellows will work in neuromuscular clinics and interact with clinicians caring for patients.
3. Each Clinical Neuromuscular Pathology fellow should ~~independently~~ examine and generate a written report on a minimum of 100 biopsies~~y~~ of which no less than 30 should be either muscle or nerve~~specimens of which a minimum of 30 must be of muscle and 30 must be of nerve~~. The reports must accurately describe the findings and indicate the diagnosis or diagnoses on each case which must subsequently be evaluated and countersigned by faculty. The required new case material must be obtained during the course training period, which includes ~~clinical evaluation, determination, and need for biopsy. That is, the~~ the clinical evaluation, determination of need for biopsy including~~,~~ site and specific procedure, preparation of biopsy material for histopathological examination, interpretation of the slides, and ~~subsequent~~ management of the patient based on the pathological diagnosis. ~~must occur during the term of the fellowship.~~ The fellow must participate in all or most steps.
4. ~~Fellows are required to participate and present in available clinical pathological conferences or case reviews with clinicians as part of their training.~~

~~5.~~4. Nerve Laboratory

Within the nerve laboratory, the fellow should become familiar with and competent in the following ~~areas~~:

a. Proper nerve tissue handling, grossing and processing including sectioning and staining of snap frozen and formalin-fixed paraffin-embedded tissue, and glutaraldehyde-fixed semi-thin embedded tissue.

~~a.~~ Interpretation of the following stains:~~Rapidly frozen, unfixed segments of nerve appropriately sectioned and stained applying to these nerve sections a battery of stains directed at establishing the diagnosis.~~

b. ~~Standard set of stains used for nerve pathology including~~hematoxylin and eosin (H&E), trichrome, and Congo red with appropriate visualization technique for amyloid~~, and cresyl violet~~.

c. Interpretation of ~~I~~immunostaining ~~nerve slides~~ using selected antibodies addressing the clinical problem ~~undergoing evaluation~~, for example, but not limited to, different types of lymphocyte subsets.

~~d. Formalin-fixed segments of nerve embedded in paraffin, appropriately sectioned, and stained applying to these nerve sections a battery of stains addressing the clinical problem at hand.~~

~~e.~~d. Interpretation of ~~G~~glutaraldehyde-fixed segments of nerve, post-fixed in osmium tetroxide and embedded in ~~epoxy~~ epoxy resin, sectioned and stained using toluidine blue ~~basic aniline dye resin, sectioned and stained using basic aniline dye and/or araphenylenediamine~~ for light microscopice evaluation.

~~f. Electron microscopic evaluation of nerve biopsies~~

~~g. Teased nerve fiber preparations from segments of nerve fixed in glutaraldehyde and post-fixed in osmium tetroxide placed on slides for evaluation by the trainee.~~

~~h. Methods of nerve fiber teasing.~~

i.e. ~~Development of frequency-distribution histograms of myelinated and unmyelinated nerve fibers.~~Exposure to electron microscopic and teased nerve fiber preparations.

~~6.~~5. Muscle Laboratory

Within the muscle laboratory, the fellow should become familiar with and competent in the following ~~areas~~:

a. Proper muscle tissue handling, grossing and processing including sectioning and staining of snap frozen tissue~~Competent services for preparation, transportation, sectioning and staining of muscle biopsy specimens,.~~

~~b. Rapidly frozen, unfixed segments of muscle appropriately sectioned and stained using a battery of stains directed at establishing the diagnosis.~~

~~c.~~b. Interpretation of the following ~~S~~stains: ~~that include: hematoxylin and eosin~~H&E, ~~modified~~ Gomori trichrome, ~~N~~nicotinamide ~~A~~adenine ~~D~~dinucleotide ~~H~~ dehydrogenase, succinate dehydrogenase, cytochrome ~~c~~ C oxidase, ATPase reactions at pH 4.3, 4.6, and 9.4, acid phosphatase, periodic-acid Schiff, oil red O or Sudan black, nonspecific esterase, ~~and Congo red~~ myophosphorylase and Congo Red with appropriate visualization technique for amyloid.

~~d.~~c. ~~The principles of~~ Interpretation of immunostaining using selected antibodies addressing the clinical problem ~~undergoing evaluation~~, for example, but not limited to: ~~-~~ different types of muscular dystrophy, lymphocyte subsets, expression of Class I HLA antigens, and deposits of complement components C5b9.

d. Exposure to electron microscopic study of muscle and neuromuscular junction.

~~e.~~ Exposure to formalin fixed paraffin embedded stained sections. ~~Ultrastructural reactions of skeletal muscle and the neuromuscular junction, and should be able to assess pathologic changes revealed by electron micrographs of muscle and the neuromuscular junction.~~

e.

~~f. Familiarity with morphometric analysis.~~

E. Scholarly Activities

1. **The responsibility for establishing and maintaining an environment of inquiry and scholarship rests with the faculty. Both faculty and fellows must participate actively in some form of scholarly activity. Scholarship is defined as activities unrelated to the specific care of patients, which includes scholarship pertaining to research, writing review papers, giving research-based lectures and participating in research-oriented journal clubs.**
2. **There must be adequate resources for scholarly activities for faculty and fellows,** e.g., sufficient laboratory space, equipment, computer services for data analysis, and statistical consultation services.

F. Fellow Supervision, Clinical Experience and Education, and Well-Being

Providing fellows with a sound academic and clinical education must be carefully planned and balanced with concerns for patient safety and fellow well-being. Each program must ensure that the learning objectives of the program are not compromised by excessive reliance on fellows to fulfill service obligations. Didactic and clinical education defined by the program requirements must have priority in the allotment of a fellow's time and energy.

1. **Fellow Supervision**

a. **All patient care required by the program requirements must be supervised by qualified faculty. The program director must ensure, direct, and document adequate supervision of fellows at all times. Fellows must be provided with rapid, reliable systems for communicating with supervising faculty.**
b. **Faculty schedules must be structured to provide fellows with continuous supervision and consultation.**
c. **Faculty and fellows must be educated about and meet ACGME or CanERA requirements concerning faculty and fellow well-being and fatigue mitigation.**

2. **Clinical Experience and Education and Well-Being**
   a. **Clinical assignments must recognize that the faculty and fellows collectively have responsibility for the safety and welfare of patients. Fellow clinical experience and education supervision, and accountability, and clinical work hours, including time spent on-call, must comply with the current ACGME or CanERA institutional program requirements.**

VII. Evaluation

A. Fellow Evaluation

1. **Fellow evaluation by faculty must:**
   a. **take place at least semi-annually to identify areas of weakness and strength, which must be communicated to the fellow,**
   b. **use the subspecialty milestones to document fellow experience and performance, and**
   c. **include the use of assessment results to achieve progressive improvements in the fellow's competence and performance in the ACGME Core Competencies and the subspecialty's core knowledge areas. Appropriate sources of evaluation include faculty, patients, peers, self, and other professional staff.**
2. **The program must include a mechanism for providing regular and timely performance feedback to fellows. Issues of unacceptable performance must be addressed in a timely fashion and in accordance with the policies and procedures of the sponsoring institution.**
3. **Summary and final evaluation of the fellow must:**
   a. **be prepared by the program director and should reflect the input of faculty,**
      i. A permanent record of evaluation must be maintained and be accessible to the fellow and other authorized personnel.
   b. **include a formative evaluation of the fellow's demonstration of learning objectives and mastery of the ACGME Core Competencies using the subspecialty's milestones,**
   c. **include a final, summative evaluation by the program director using the subspecialty's milestones to document the fellow's demonstration of sufficient competence and professional ability to practice the subspecialty competently and independently, and**
   d. **include a statement specifically regarding the fellow's ability to practice the subspecialty independently upon completion of the program.**

B. Faculty Evaluation

1. **The performance of faculty must be evaluated by the program director on an annual basis.**
2. **The evaluations must include a review of their teaching abilities, commitment to the educational program, clinical knowledge, and scholarly activities.**

3. **These evaluations must include confidential annual written evaluations by fellows.** A permanent record of evaluation must be maintained and be accessible to the fellow and other authorized personnel.

C. Program Evaluation and Outcomes

1. **The effectiveness of a program must be evaluated in a systematic manner. In particular, the quality of the curriculum and the extent to which the educational goals have been met must be assessed.**
2. **Confidential written evaluations by fellows must be utilized in this process.**
3. **The program will use fellow performance and outcome assessment in its evaluation of the educational effectiveness of the fellowship program. At a minimum, the fellow performance on the UCNS certification examination should be used as a measure of the effectiveness of the education provided by the training program. The development and use of clinical performance measures appropriate to the structure and content of each program is encouraged.**
4. **The program must have a process in place for using fellow performance and assessment results together with other program evaluation results to improve the fellowship program.**

~~[Subspecialties may stipulate additional requirements regarding program evaluations and outcomes.]~~