

# American Association of Electrodiagnostic Medicine

## Educational Guidelines for Electrodiagnostic Training Programs

These educational guidelines are provided to aid training program directors in establishing new training programs or in reviewing the current status of the educational aspects of existing programs. This document was developed by the American Association of Neuromuscular & Electrodiagnostic Medicine (AANEM [formerly AAEM]) Training Program Committee and approved by the Board of Directors of the AANEM. It is not intended to serve as a device for training program accreditation and neither the AANEM Training Program Committee nor the AANEM Board of Directors plans to review training programs using this document.

### Electrodiagnostic Training Program (or Program Educational) Director and Faculty

Training and experience equivalent to that described in the AANEM's position statement: *Who is Qualified to Practice Electrodiagnostic Medicine?*, and included under the heading Qualifications in Chapter 1 of the *Guidelines in Electrodiagnostic Medicine*, are considered essential for an electrodiagnostic medicine (EDX) training program (or program educational) director. Ideally, the program director should have additional training and experience beyond the minimal qualifications described and be a Diplomate of the American Board of Electrodiagnostic Medicine (ABEM) or have equivalent competency in electrodiagnostic medicine. In addition, this individual, or an appropriate designee with similar qualifications, should devote enough time to the laboratory to ensure that the clinical and educational activities are carried out properly. This should include fulfillment of all aspects of AANEM educational requirements for trainees, including periodic progress assessments and proper supervision of all studies carried out by trainees. Ideally, a program should consist of at least 2 qualified faculty, 1 of whom may be the training program director, with primary board certification or eligibility and ABEM or equivalent certification. Faculty should ideally be in an academic department with an accredited graduate medical training program.

### Duration of Training Program

At least 6 months full-time supervised training (or its equivalent part-time) is considered necessary for trainees to develop adequate basic skills in electrodiagnostic medicine. This training need not be continuous but should at all levels include adequate supervision and staff interaction and gradually increasing responsibility for the trainee.

### Training Admission Requirements

For an adequate educational experience, EDX trainees should receive their training as part of a residency or fellowship in physical medicine and rehabilitation, or

neurology. The first 3 months of the program should be rigidly structured and supervised. The residency should be approved by the appropriate residency review committee of the parent professional association or academy. Fellowships should either be approved by the appropriate residency review committee or be sponsored by a program whose residency has been approved by the appropriate residency review committee.

### Didactic Curriculum

Proficiency in electrodiagnostic medicine requires adequate knowledge in the following academic areas:

1. Anatomy of peripheral, cranial, and trunk musculature and of the peripheral and central nervous systems.
2. Physiology of muscle and the peripheral and central nervous systems.
3. Pathology and pathophysiology in neuromuscular disorders.
4. Clinical aspects of neurologic, neuromuscular, autonomic, and musculoskeletal disorders, including their diagnosis and treatment.
5. Electrophysiology, including knowledge of:
  - a. Applied electronics.
  - b. Instrumentation, including safety and recognition of technical considerations.
  - c. Nerve conduction studies.
  - d. Needle electromyography (EMG), including motor unit analysis, motor unit recruitment, and firing rates.
  - e. Neuromuscular junction testing, including repetitive stimulation and single fiber electromyography (SFEMG).
  - f. Somatosensory evoked potentials.
  - g. Autonomic nervous system testing.
6. Ethics of practice of electrodiagnostic medicine, including those that relate to appropriate test utilization and the economics of practice.
7. The epidemiology of infectious diseases and appropriate infection control practices as they relate to the EDX laboratory.
8. Use of statistics as related to electrodiagnostic medicine, including development and use of reference values.

Proficiency in the above areas can be accomplished by any combination of lectures, conferences, meetings, and discussions. Some programs have found lectures and/or conferences, held weekly, which require primary participation from residents and/or fellows to be advantageous. Use of the AANEM's educational materials is strongly recommended since they have been developed to provide knowledge of all the basic

aspects of electrodiagnostic medicine. The trainee need not be proficient in all areas (e.g., SFEMG), but should understand the principles of the test and be able to interpret test data.

### **Program and Trainee Assessment**

The EDX training program director, or an appropriate designee with similar qualifications on the faculty of the training program, should directly observe trainees early in training. Later, when the trainees are working more independently, the training program director or appropriate designee should be immediately available at all times to observe the studies should questions arise during the examination and should be available to discuss the findings, conclusions, and report.

Ideally, a written description of the training program, with trainee goals, objectives, and responsibilities should be available to trainees and faculty. Periodic assessments should be carried out by the faculty to assure that trainees have developed proficiency in or adequate knowledge of the areas listed under the heading Didactic Curriculum. This can include any combination of written or oral examinations, either formal or informal. The use of the AANEM Training Program Self-Assessment Examination may help in this evaluation process. Comprehensive final evaluations of the trainees should be maintained in confidential and permanent files.

A mechanism should also be available for trainees to assess the effectiveness of the educational activities of the training program. Trainees may complete evaluations of the program upon completion of their training.

### **Laboratory Clinical Activity**

Adequate laboratory activity is necessary for trainees to acquire requisite skills and experience. At least 200 EDX

evaluations should be performed by each trainee during the training period of at least 6 months full-time (or its equivalent part-time). The studies should be documented and interpreted and include exposure to neuromuscular disorders in adults and children. Regular and accurate narrative and statistical records of the program should be maintained.

### **Scholarly Activities of Faculty and Trainees**

A vigorous, intellectually active training program generates publications in peer-reviewed journals or presentations at regional, national, and international meetings. Ideally, trainees should participate in EDX (or related) research to enhance the educational experience provided by the training program.

### **Institutional Support**

Establishment and maintenance of an adequate training program requires the support of an institution (hospital or medical school) that has the resources necessary to maintain the proper educational environment. The EDX laboratory and equipment should be maintained in compliance with the safety regulations of the institution. The program must have the approval and support of the department chair and the residency program director.

Developed by the 1993-1994 American Association of Electrodiagnostic Medicine (AAEM) Training Program Committee: Chair: Francis O. Walker, MD; Members: John D. England, MD; Robert L. Harmon, MD, MS; Susan L. Hubbell, MD; John C. King, MD; and Zachary Simmons, MD.

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**Approved by the American Association of Neuromuscular & Electrodiagnostic Medicine (formerly AAEM): July 1997.**