

PRINCIPLES OF ORGANIZING A NEUROLOGY RESIDENCY PROGRAM

**Ralph F. Józefowicz, M.D.
University of Rochester, NY**

The following twelve principles should be kept in mind when organizing a Neurology residency program:

Dedicated Program Director

The choice of program director is very important to the success of a Neurology residency program. This individual needs to have stature within the medical center and department, political clout, strong clinical skills, excellent teaching abilities, and must also be regarded as a mentor by the residents.

The program director must have complete support from the Chair of the Department of Neurology. He/she also must be respected by the faculty members in the Department of Neurology, as well as by the other residency program directors within the medical center.

It is imperative that the program director be available and responsive to the Neurology residents at all times. He/she must receive adequate financial compensation and adequate secretarial support. For an average sized residency program, the position of residency program director requires about 50% time effort and 50% secretarial support.

Excellent Clinical Faculty

The cornerstones of any Neurology residency program are the faculty members. There needs to be a sufficient number of faculty members, both generalists and specialists, commensurate with the size of the program.

There must be a sufficient number of excellent clinical neurologists who have regular contact with the Neurology residents. These faculty members invariably have the breadth and depth of clinical knowledge to adequately train Neurology residents in the nuances of clinical diagnosis. Faculty members who conduct research primarily, and attend on the wards for one month or less each year should be avoided at all costs. Though well intentioned, these individuals frequently lack the clinical skills necessary to effectively diagnose and treat patients presenting with broadly defined symptoms. Their ability to teach these skills to Neurology residents is similarly compromised.

Finally, faculty members need to be available to the residents when they are on call. This is not only important for teaching, but also for good patient care.

Strong Chief Residents

The role of Chief Resident is crucial to the success of any residency program. These individuals set the tone of the residency program. They interface between the faculty members and the residents, and also have a significant amount of administrative responsibility, including organizing conferences, rounds, and on-call schedules.

The chief residents must be confident clinicians and skilled teachers in order to be effective in their role. They must receive guidance and support from the program director at all times.

The chief resident is in a unique position to learn a great deal of clinical neurology, since he/she is able to see all of the admissions briefly without the burden of providing direct patient care and documentation. He/she should also organize teaching conferences in core neurological topics for clinical medical students.

Since the chief resident performs a significant amount of administrative work, which would otherwise be performed by the program director and residency coordinator, many programs are providing an additional stipend for this service.

Recruitment Strategies

One of the best markers of excellence in a residency program is the quality of the residents. It follows that recruiting excellent residents is one of the best ways to ensure the quality of the residency program.

The program brochure or web page is typically the first exposure that a candidate has to a specific residency program. It is important that these materials be well written, attractive, informative, and up-to-date. In addition to providing information about the structure of the residency program and the organization of the teaching activities, the brochure should provide information about the city, the faculty members, and especially about current and former residents. It is quite helpful to include information in the brochure on the preliminary PGY-1 year in Internal Medicine. Candidates appreciate being able to interview for both the Neurology residency and the preliminary Internal Medicine year at the same time.

The interview day must be carefully planned and organized. In addition to informational meetings and individual faculty interviews, candidates should participate in the teaching conferences of the department as much as possible, in particular Attending Rounds. By doing this, they get a feel for the type of teaching they will receive during their residency training.

It is important that residency candidates have adequate contact with all the residents in the program, both formally and informally. Many programs arrange for the candidate to meet the residents at a dinner the night before the interview day.

Many programs also arrange for and pay for one night's accommodation at a nearby hotel.

Progressive Responsibility

The educational program for Neurology residents should be organized such that residents have progressive responsibility for patient care from one year to the next. During the first year of training, the Neurology resident should be assigned to the inpatient neurology unit for a significant portion of the year. The inpatient neurology unit provides the Neurology resident with exposure to a wide spectrum of classic neurologic disorders with direct supervision from Neurology attendings. The inpatient neurology unit is also an excellent setting for patient-centered teaching rounds.

During the second year of residency training, the Neurology resident should be assigned to consultation services. These services allow for more independence on the part of the Neurology resident with respect to patient diagnosis and management.

The third year of the Neurology residency program should be structured to provide maximum flexibility to pursue subspecialty and basic science interests. To this end, it is imperative that an adequate amount of elective time be available. The final year also affords the resident an opportunity to hone his/her teaching and administrative skills as the chief resident for the neurology service.

Ambulatory Experience

The practice of neurology is increasingly being shifted to the outpatient setting. The settings where we train our neurology residents must follow suit. Indeed, the RRC requirements for Neurology residency training mandate that six months minimum be devoted to ambulatory training within the three-year residency program. Furthermore, these requirements mandate a weekly longitudinal general neurology outpatient clinic for all Neurology residents.

The ambulatory experiences for Neurology residents should encompass both general outpatient neurology and subspecialty neurology. All residents must have a longitudinal neurology "resident's clinic" in which they follow their own patients. It is desirable that their "clinic patients" be broadly representative of the community, and should include a mix of patients with respect to diagnosis, mix of old and new patients, and socioeconomic level. It is essential that residents have adequate attending supervision for their clinics, and that adequate secretarial support is available as well, including chart management, transcription services, and handling phone messages. Residents should be able to see their own patients in follow-up in this clinic, including those seen initially in the Emergency Department, and also those discharged from the inpatient neurology service.

It is desirable to have Neurology residents work alongside clinical faculty in the faculty practice clinic. Neurology faculty practice groups tend to see a different spectrum of neurologic diseases. Senior Neurology residents are particularly suited for such outpatient settings, due to their advanced diagnostic skills and increased efficiency when compared with more junior residents. These senior residents can actually save time for faculty members in their practice, increasing patient throughput.

Neurology residents should also rotate through the subspecialty clinics of the department, since many neurological disorders are only seen in these clinics.

Clinical Conferences

Neurology residents must have an adequate number of educational conferences that are organized into a comprehensive curriculum. In addition to topics in subspecialty neurology, this curriculum should also include the neurological examination, localization in clinical neurology, neurological emergencies, child neurology, and ethics. Journal club should also be part of the comprehensive conference schedule.

The Neurology residents should have direct input into the organization and scheduling of these conferences. The program director can play a key role in the organization of these conferences, by ensuring that faculty members participate by presenting as well as attending. It is desirable to have the residents present as well. These conferences should be evaluated yearly with respect to content and delivery, and appropriate changes should be made in subsequent years as a result of this feedback.

It is crucial that residents have the time to attend these conferences. Although clinical demands may necessitate that a resident be absent from conference on occasion, this should not become a regular occurrence.

Basic Science Curriculum

Neurology residents must learn the basic sciences that provide a foundation for the modern clinical practice of neurology. Indeed, the RRC in neurology highlights the importance for such basic science training, and recommends two months minimum of such training.

Basic science instruction for Neurology residents may be accomplished in two settings: a specific neuroscience course for Neurology residents, and participation in the medical student neuroscience course.

The basic sciences underpinning clinical neurology are broad and extensive, and include neuroanatomy, neurophysiology, neuropharmacology, neuropathology, molecular genetics, psychopathology, as well as evidence-based medicine. Because of this breadth and depth, it may be desirable to cover the basic science curriculum in a three-year cycle. A specific faculty member should be asked to coordinate this conference series. Although individual faculty members may be asked to participate, it is desirable to have the Neurology residents co-present the material, since teaching is the most effective way to learn.

A second method to acquire the basic science knowledge underpinning clinical neurology is to have the Neurology residents participate in the preclinical medical student neural science course, either as students themselves or as laboratory and small group instructors. Although these courses are aimed at a medical student level, Neurology residents could be given additional reading assignments to ensure that they learn the material at a sufficient depth.

Medical Student Teaching

All Neurology residents should be expected to teach medical students. Teaching is not only an effective way to learn, it is also a skill that most physicians require throughout their careers.

Most Neurology residents teach clinical medical students on the neurology clerkship. The Neurology resident learns how to be a mentor, and the medical student learns the art and science of clinical neurology from the resident.

Neurology residents should also participate in the medical student neural science course as laboratory or small group instructors. Teaching preclinical medical students is often more challenging than teaching clinical students, since the preclinical students are less sophisticated medically and often ask questions that challenge our clinical understanding of disorders. Having Neurology residents teach in such a course is mutually beneficial – the residents benefit because they must learn the basic science material in order to be effective tutors, and the students benefit because they are exposed to clinical mentors at a level slightly above their own.

Neurology residents should also receive training in how to be effective teachers. This may be accomplished by means of workshops on effective teaching strategies, providing feedback and evaluation to medical students, and constructing written test questions for the basic and clinical sciences.

Research Opportunities

Research should be part of each Neurology resident's educational experience. Indeed, the RRC in Neurology has mandated that each resident participate in at least two months of research during their residency training. By participating in such an experience, residents may gain a deeper understanding of the role that research plays in expanding neurologic diagnostic and treatment options, and also its limitations.

To make such an experience productive and also enjoyable, the research experience should be broadly defined, and include basic science research, clinical research, outcomes research or educational research. The research experience should be part of all three years of residency training. In the first year, the resident should identify a faculty mentor and meet with him/her to discuss possible research projects. During the second year, the resident may begin work on the research project during an elective block or longitudinally. In the third year, the resident should complete the project and present his/her findings at Neurology Grand Rounds or another departmental conference. The resident should be encouraged to submit an abstract of his/her work to the AAN or ANA for their consideration for presentation at their annual meetings.

A cadre of faculty members needs to be identified for the residents for these research projects.

Feedback and Evaluation

Feedback and evaluation are extremely important components of each Neurology residency training program that assess competence of the resident and ensure quality of the residency training program. Feedback should be both timely and frequent; it should also be both positive and negative. Faculty members should be taught how to provide constructive feedback, and residents should be taught how to accept feedback.

An important component of feedback for the residents are the written faculty evaluations during the clinical rotations. These evaluations should be performance-based and keyed to the learning objectives for each rotation. They should assess knowledge base, clinical skills, and personal and professional qualities of the resident. This feedback should also include specific comments for improvement.

All residents should also be evaluated yearly using more objective measures. The RITE (Residency In-Service Training Examination), prepared by the AAN, is one such objective measure of knowledge base in neurology, and provides national norms for residents in each year of training. Each resident should use his/her performance on the RITE to guide studying for the coming year.

Each residency program should also administer a “mock board” examination to its residents yearly to assess clinical skills. This examination may be modeled after the ABPN Step II examinations, including a patient hour and a vignette hour. All faculty members within the Department of Neurology should participate as evaluators. The main advantage of such an examination is that each resident’s clinical skills can be evaluated objectively in a structured setting. Another advantage is that residents can become familiar with this testing venue, and this may allay some of the anxiety that many of them experience when taking the ABPN Step II examinations.

The program director must meet individually and regularly with each Neurology resident to review his/her performance in the program. These meetings must occur no less than twice yearly, according to RRC guidelines. A formal letter summarizing the meeting must be sent to each resident and a copy should be kept in each resident’s file. This ensures that residents are aware of their strengths and weaknesses in the residency program, as well as the plans to remediate any problem areas.

In addition to feedback and evaluation of residents, faculty members and the residency program itself must be evaluated by the residents, and in writing. The feedback on faculty teaching efforts should be submitted to the chair, and reviewed with each faculty member individually during his/her annual meeting with the chair. The written evaluations of the residency program should be collated and summarized, and distributed to all of the faculty members and residents in the department. This feedback may serve as an important discussion item for the Department Residency Education Committee.

Resident Handbook

A concise and organized resident handbook is invaluable for the smooth running of the residency program. This handbook should be updated yearly and distributed widely to all Neurology residents, faculty members and senior administrators. The handbook should summarize the following:

- Goals and objectives for the program, for each year within the program, and for each clinical rotation.
- Rotation guidelines, including resident and faculty responsibilities.
- Policies and procedures.
- A bibliography of selected texts and journal articles to be read throughout the residency.
- Rotation and clinic schedules for the year.