

International Issues: Educational programs of the World Federation of Neurology

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During the past few years, several publications have documented the striking lack of neurologic health care givers in countries with limited resources.¹⁻³ Neurologic care is particularly deficient in those developing countries where health problems are most severe. Even in those countries where a small number of neurologists practice, care is often fragmented and the neurologic community poorly organized. Educational programs for neurologic health care givers and neurologic patients are typically seriously deficient. The problem has been defined. The challenge is reasonably clear. A resolution is required. In North America and Western Europe, effective organizations exist that serve the organizational and educational needs of its neurologic community. However, no such meaningful process exists to provide these services for resource-deficient countries. During the past decade, the World Federation of Neurology (WFN) has attempted to fill this void. The WFN (www.wfneurology.org) was organized as a federation of national neurologic societies 50 years ago. Its secretariat is located in London, and it is registered as a Charity Corporation in the United Kingdom. Each country has one vote in its deliberations. A primary goal of the WFN is to assist low-resource countries in providing meaningful education for its neurologic health care providers and thus improve the neurologic health of its citizens. We hope that this brief review of the educational activities of the WFN will be informative for residents and fellows who are interested in working with and helping colleagues living in low resource environments.

GENERAL PRINCIPLES The WFN's educational programs have been operating under several principles.

1. The successful education of neurologic health care providers, and their patients, is a major strategy in achieving improvement in health care in developing countries.
2. In order to strengthen the effectiveness of this educational process, each country should develop a cohesive neurologic society with specific individuals identified as leading that society's educational activities.
3. The WFN will provide educational assistance in response to a specific request from a member country. It does not advocate seeking out or proactively identifying a country's educational needs. These needs should be identified by the participating society, not the WFN.
4. To counteract the destructive effects of the emigration of trained basic and clinical neuroscientists to countries with more resources ("brain drain"), the WFN strongly supports the principle of training neurologists in their native countries. Its primary strategy is to help countries develop their own training programs. We believe that, in most situations, this can be accomplished without compromise to the educational process and within a reasonable period of time.
5. The educational material used should be of the highest quality and both problem (case) and evidence based.
6. Although the WFN believes that the best care of patients with a neurologic illness should be given by a trained neurologist, it recognizes the need for non-neurologist caregivers as an interim measure. However, developing a cadre of well-trained non-neurologist caregivers requires a core of experienced neurologists resident in that country to provide adequate training.
7. The WFN supports the principle of establishing small, pilot studies when new educational programs are being considered.
8. Periodic follow-up evaluation and feedback of a program's effectiveness is essential.
9. The education of an effective neurologist should be a seamless and integrated process from medical school to residency training and then to lifelong continuing education.

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CONTINUING MEDICAL EDUCATION: LIFELONG LEARNING IN NEUROLOGY

This program, now 10 years old, is a partnership between the WFN and the American Academy of Neurology (AAN). It provides six specially designed educational courses each year of the AAN's premier continuing medical education journal *Continuum: Lifelong Learning in Neurology*, by hard copy or online. Forty-two developing countries currently participate, including Argentina, Bangladesh, Brazil, Bulgaria, Cameroon, Chile, Columbia, Congo, Croatia, Cuba, Cypress, Czech Republic, Egypt, Ethiopia, Guatemala, Honduras, Hungary, India, Iraq, Jordan, Kenya, Lebanon, Lithuania, Macedonia, Mexico, Mongolia, Nigeria, Panama, Peru, Romania, Russia, Serbia, Slovenia, Sri Lanka, Syria, Tunisia, Uganda, Uruguay, Vietnam, Venezuela, Yemen, and Zambia. Current WFN Coordinator contact information is available at www.wfnneurology.org.

Each country has a WFN Education Coordinator appointed by that society's President. The coordinator is in charge of receiving and distributing the courses and arranging for discussion groups, which are an integral part of the program. Upon completion of a course, each participant fills out an evaluation form, and certificates of participation are provided. Typically, these programs begin in the capital city of a country. In larger countries, secondary participating centers, each with a coordinator, have been established in smaller cities. This has occurred in Russia, Turkey, Cuba, Honduras, Argentina, and Hungary.

The effectiveness of these programs depends in great part on the skills, dedication, and active involvement of the WFN Education Coordinator in that country. This program is now being used increasingly for certification purposes, grand round presentations, educational retreats, and the education of non-neurologists. The WFN and AAN are currently gradually moving from hard copy to online distribution, which will significantly reduce shipping costs and delays. Future plans include an online chat group wherein participants can communicate with the authors of the courses.

SUPPORT FOR NEUROLOGIC TRAINING PROGRAMS

The WFN provides assistance in establishing neurology training programs where there are none, and helping further develop existing programs. We have worked with programs in Ethiopia, Honduras, two in Guatemala, Nicaragua, and Mexico. The request for such assistance must come from the national neurologic society and chairman of the neurology department and have the support of the neurologic society members. After a request is received, the WFN carries out a preliminary site visit to answer the following questions: 1) Is the need for help shared by most members of the neurologic community and are they prepared to make a long-term commitment?

2) Are there adequate resources, both human and infrastructural, to establish a program? 3) Are university and hospital administrators, the national minister of health, and the chiefs of related departments, such as medicine and neurosurgery, supportive? 4) Above all, is the chief of the proposed department adequately committed and capable of assuming this most important leadership position? Following this visit, a report is presented to the requesting society and the WFN Trustees with specific recommendations. Follow-up visits are arranged according to need.

An early experience in Honduras has been very informative.^{4,5} A collaboration between the WFN and the Neurologic Society of Honduras began in 1997 when the WFN was asked to help the society establish a training program for neurologists. The Director, Prof. Marco T. Medina, is a dynamic, capable leader dedicated to improving the neurologic health of the citizens of his country. Prior to the WFN's site visit, he had collected sound epidemiologic data showing that the health of citizens living in Honduras was being adversely affected by the lack of good neurologic care.⁶ In addition, it was demonstrated that an improvement in neurologic care would result in significant economic benefits to the country. Armed with these data, a meeting was held with the Minister of Health, who agreed to fund four resident positions at each level of a 3-year training program. The WFN continued to monitor the progress of the first several resident training classes.

This training program is now about to celebrate its 10-year anniversary. The results have been dramatic. The Neurology Department has become recognized as one of the best departments in the medical center and in Central America. A neuroscience PhD program is being developed. Importantly, every graduate of the neurology training program has stayed in Honduras. The program is attracting the better medical school graduates. Cities of secondary size are getting well-trained neurologists for the first time. Outcome assessment has shown, for example, a dramatic reduction of deaths from status epilepticus. A vigorous stroke prevention program has been initiated. Preventive programs for neurocysticercosis, a scourge of the country, are beginning to show results. Importantly, neighboring countries have begun to ask for similar help from the WFN.

WFN CERTIFICATION

The WFN has recently provided a program certification process for programs that wish to have an external review. This has been carried out in Honduras, Guatemala, Mexico, and Ethiopia. If a program meets certain predetermined criteria for an effective training program, it receives a certificate. This process is very effective not

only in confirming that the program is functioning effectively, but also in notifying other members of the hospital and university communities that the program meets international criteria of performance.

Several countries have requested that the WFN provide a process of external evaluation of their residents at time of graduation. A logical extension of that process may lead to a more formal certification and recertification process. The WFN has responded to requests for resident evaluations and has begun discussions of a certification and recertification process. In carrying out these regulatory functions, the WFN is providing a service that is available internally in most, if not all, developed countries but not in countries with limited resources and fewer neurologists.

What, then, are adequate criteria for a training program in a developing country—for example, in a country of 20 million people with no CT scans, MRIs, or adequate electrophysiologic capabilities and 10 or fewer well-trained neurologists? There is general agreement that the goals of a training program should be goals that are appropriate for the needs of that country,⁴ as determined in great part by individuals practicing in that or a similar environment. How are those goals defined in the context of what constitutes adequate modern neurologic care? Can there be criteria that are internationally appropriate?

THE WFN AFRICA INITIATIVE Because of the special and relatively unaddressed neurologic health issues in sub-Saharan Africa, the WFN has mounted a special effort. A special task force has been established and several meetings held in an effort to define the best way to approach the immense needs in that region. Currently, six sub-Saharan countries are participating in the WFN Continuing Education program: Cameroon, Uganda, Zambia, Nigeria, Ethiopia, and Kenya. The WFN has recently formed a partnership with the People to People Foundation, which has made major contributions to neurologic care in Ethiopia. Under this arrangement, a site visit of the neurology training program at Addis Ababa University was recently carried out by a team from the WFN. A recent conference for non-neurologists was held under the auspices of People to People, the Mayo Clinic, and the Ethiopian government in Addis Ababa. The European Federation of Neurologic Societies (EFNS), one of our component regional societies, has a long experience in organizing training courses in neurology in developing countries. EFNS will soon arrange a teaching course in neurology in Dakar, Senegal. Most participants will come from French-speaking countries and the course will follow standards given at teaching courses at EFNS congresses. EFNS also has a long experience with

department-to-department exchange programs, which will be utilized in the future. The WFN is in the process of designating a small number of African Centers of Neurologic Excellence for regional training. There is need for training activities in both English-speaking and French-speaking African countries. Some neurologists from other African countries are already in training positions in South Africa. South Africa has offered to accommodate others for training in neurology.

NEUROLOGIC CARE WHERE THERE IS NO NEUROLOGIST

In our discussions with health ministers, deans, and other senior medical officials, it is often pointed out that in a country with threadbare health services, especially in rural areas, major problems, such as HIV/AIDS, malnutrition, and parasitic infestation, must take precedence over neurologic diseases, which are still considered esoteric and untreatable. They often express the view that it is much more reasonable to train clinical assistants, nurses, and primary care physicians.⁷ However, it is often overlooked that in order to train non-neurologists properly, appropriate training materials and a core group of clinically experienced academic neurologists are necessary. Thus, in addition to focusing on training neurologists, the WFN has developed training materials for nonphysician healthcare providers⁸ and established a program for nonphysician/neurologist clinical officers in Zambia. Under the direction of Gretchen Birbeck, MD, this increasingly effective training program for clinical officers in Zambia now involves Malawi as well.⁹ In Ethiopia, the WFN plans to train an existing cadre of psychiatric nurses to diagnose and manage neurologic problems. Such training is particularly urgent in resource-poor regions, where nonphysician healthcare workers provide clinical services without recourse to physician-level referral.¹⁰

However, the two educational tracks—neurologist and non-neurologist—need not and should not be mutually exclusive. Both approaches are needed and clearly reinforce each other.

ADDITIONAL PROGRAMS Because of the lack of educational material specifically designed and directed to neurology health care givers practicing in low-resource environments, the WFN has initiated a series of books produced by neurologists with experience in these issues. This series, published by Demos, Inc., is edited by Jerome Engel, MD, and is available in hard copy or online. Other related and more traditional programs offered by the WFN, when resources permit, include a book sharing program by which over 8,000 books and journals have been provided by individual donors and publishing companies. Approximately 150 visiting professorships have been sponsored or cospon-

sored. Ten traveling fellowships have been supported and several small equipment grants have been made.

DISCUSSION Preliminary experience with providing assistance to our neurologic colleagues in developing countries has led the WFN to conclude that effective help in improving neurologic care can be provided with modest resource investment in a relatively short period of time. The effective elements of the WFN's programs include a detailed needs assessment by the recipient country, local dedicated and committed leadership, the production of relevant evidence-based educational material, periodic feedback, and periodic reevaluation of goals and strategies.

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