WriteClick: Editor's Choice

Editors' Note: Drs. Fiorella and Cloft and authors Zaidat et al. discuss the impending oversupply of neurointerventionalists and echo debates ongoing in many medical subspecialties, namely, how to construct barriers to decrease the number of people entering a field. Between 2005 and 2007, the United Council of Neurologic Subspecialties created 7 new board examinations, complete with rigid application requirements. It is hard not to view these barriers as potentially self-serving. Many of the people initiating additional fellowships and new board examinations have managed well in their fields without those hurdles. While it is difficult to argue against more education, these requirements have a time and financial cost for trainees (and their departments) and could contribute to fragmentation within the field.

Megan Alcauskas, MD, and Robert C. Griggs, MD

DEMAND-SUPPLY OF NEUROINTERVENTIONALISTS FOR ENDOVASCULAR ISCHEMIC STROKE THERAPY

David Fiorella, Stony Brook, NY; Harry Cloft, Rochester, MN: Zaidat et al.[1] understated the accelerating crisis of physician oversupply in our field. With 80–100 US training programs currently graduating 100 new neurointerventionalists each year,[2] the number of practicing neurointerventionalists will easily double by 2020.

The authors reported that 95% of the US population is now "adequately covered" by neurointerventional services. Suzuki et al.[3] demonstrated that 99% of the US population was within 200 miles of a neurointerventionalist, based on The American Society of Interventional & Therapeutic Neuroradiology membership rolls from 2002. Thus, new graduates will continue to overpopulate areas already adequately covered by neurointerventional services.

This growth in the number of physicians and programs decentralizes care and reduces volume at centers of excellence. Care could worsen because it has been shown that outcomes are better with increased case volumes and operator experience.[4,5] Furthermore, competition for cases places undue pressure on new and low-volume operators to treat patients with marginal indications. This same pressure is a major disincentive for inexperienced operators to transfer complex cases to regional centers of excellence that they view as direct competitors. The continued overtraining of neurointerventionalists represents an impending disaster for our field and our patients. We have created this problem ourselves, so we need to recognize it and stop perpetuating it. Until systematic measures can be enacted at a societal level to standardize training and appropriately match the number of trainees to the demand for services, all neurointerventional fellowship training should be stopped.

Author Response: Osama O. Zaidat, Marc A. Lazzaro, Milwaukee; Italo Linfante, Miami; Thanh Nguyen, Boston; Nazli Janjua, Kuala Lumpur, Malaysia: Drs. Fiorella and Cloft raised important points about neurointerventionalist manpower in the United States in their WriteClick submission and recent article.[2] We agree with them.[1] Very few US hospitals have adequate neurointerventional procedural volume criteria as recommended by professional societies.[6] However, there are no strong manpower data on neurointerventionalists or procedure numbers. In general, this has been a limitation of manpower studies in medicine.[7]

To address the concern of oversupply, urgent solutions may be considered:

1. Neurointerventional training should be increased to 3 years, including diagnostics and neurointerventions. Currently, training is inconsistent (1–2 years). A minimum volume should also be required (e.g., 200 angiograms and 200 neurointerventions).
2. For the annual Fellowship Match Program, the number of fellows per year for any given program should be based on case volume and number of faculty.
3. Board certification should be required from the American Board of Radiology or American Board of Neurosurgery, multisociety (Society of Neuro-Interventional Surgery [SNIS]/Society for Vascular and Interventional Neurology [SVIN]/American Society of Neuroradiology/American Association of Neurological Surgeons/CNS Cerebrovascular Section), or United Council of Neurological Subspecialties.
4. Multisociety guidelines (SNIS/SVIN) should establish annual numbers of neurointerventional procedures for skill maintenance. For example,

the guideline for interventional cardiologists is 75 percutaneous coronary interventions per year per operator.[8]

5. Experience from cardiology showed that mandated interventional cardiology training programs' accreditation by ACGME and mandated board certification of the trainees reduced the number of graduates by 50%.[8]

An immediate call to action should consider the above recommendations not only to address manpower but also to meet our societal responsibility for future, high-quality neurointerventionalists.

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VARICELLA-ZOSTER VIRUS ENCEPHALITIS AND VASCULOPATHY IN A PATIENT TREATED WITH FINGOLIMOD

Patricia H. McNamara, Janice M.T. Redmond, Colin P. Doherty, Dublin: Ratchford et al.[1] reported a patient with fingolimod-related varicella encephalitis and vasculopathy. The patient's baseline mobility was wheelchair-bound, which means that his Expanded Disability Status Scale (EDSS) score[2] was at least 7.0. This suggests that he was no longer in the inflammatory stage of multiple sclerosis (MS) and had secondary progressive MS (SPMS). It is unclear whether the patient's condition met criteria for natalizumab but—at a minimum—the condition must have progressed while on natalizumab. There is neither licensing support nor data from pivotal trials for efficacy of this drug in patients with SPMS.[3] The evidence supporting the extension of natalizumab beyond the standard 24 months is also lacking. Fingolimod is licensed for patients with active relapsing-remitting MS but Ratchford et al. stated that this patient was clinically stable. This case highlights an interesting and serious consequence of starting therapy with fingolimod, but the evidence for starting and continuing treatment with this medication—and indeed natalizumab—is lacking in this patient group. This case report also emphasizes the need for evidence-based care, which is safer and more cost-effective.

Author Response: **John N. Ratchford, Kathleen Costello, Daniel S. Reich, Peter A. Calabresi, Baltimore:** We thank McNamara et al. for their interest in our case report. We agree that natalizumab and fingolimod should only be prescribed for patients with relapsing forms of MS or in the context of a clinical trial, unless definitive trial data could prove their efficacy in progressive MS. An EDSS score of 7.0 would suggest that our patient had SPMS, but that was not the case; our patient accrued disability in a stepwise fashion. Furthermore, the lack of any progression in the absence of relapses while on natalizumab or at any other stage of this disease is inconsistent with the diagnosis of SPMS. It would be unfortunate if patients who accrue disability through severe relapses were deprived of an effective medication by misinterpreting "progression of disease" for "progressive disease."

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Author disclosures are available upon request (journal@neurology.org).

Demand–supply of neurointerventionalists for endovascular ischemic stroke therapy

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