

# Child neurologists and neurodevelopmental disabilities physicians

## “Who—Who Are You?”

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Kang et al.<sup>1</sup> have provided a snapshot of the child neurology and neurodevelopmental disabilities workforce in the year 2016. They have, at least in some measure, compared and contrasted this picture with that obtained in 2005 by the Child Neurology Society and colleagues at the Wharton School of the University of Pennsylvania.<sup>2</sup> This snapshot gives one the sense that, while philosophy and culture of the profession of child neurology are not substantially different than they were more than 10 years ago, the environment in which they exist has vastly changed.

The stability of the philosophy and culture of child neurology gives one cause for optimism. Most child neurologists would choose the profession again despite long hours and compensation and recognition that are perceived as discordantly low relative to professional activities. More than half engage in clinical or translational research and very few have let their board certification lapse, suggesting that this is a field in which practitioners keep up with emerging and changing information and technology.

However, there is reason to be concerned, as well. Some of the concerning features mirror those of medicine in the United States in general. Educational debt has increased; that, coupled with the perception of mismatch between compensation and work intensity and quantity drive new physicians away from “cognitive” and pediatric, as opposed, respectively, to procedural and adult, fields. The temporal and fiscal demands placed on generalist physicians make them refer larger numbers of decreasingly complex patients to subspecialists, making more voluminous and less challenging or even interesting work for those subspecialists. Other concerning features are particularly associated with child neurology and neurodevelopmental disabilities. For example, it is likely not simply a function of the demographics of the respondents (as opposed to the total pool of those polled) that more child neurologists are retiring than are being trained. In addition, the shift in the demographics between 2005 and 2016 from predominantly men to predominantly women may necessitate creative solutions to leaves of absence for child bearing and child rearing.

The percent of child neurologists comprising individuals from underrepresented minority populations has not changed much in more than 10 years. One might hypothesize that this is related to the notion that emergence from underresourced environments and relatively recent enhanced access to advanced higher education creates a temporal pipeline-generated delay; an imperative to choose subspecialties that allow shorter lag times between completion of medical school and earning of a professional salary; and the tendency to pursue careers (e.g., in primary care<sup>3</sup>) that more obviously address socioeconomic issues of the communities from which underrepresented minority physicians have come than does child neurology. Nonetheless, creative solutions and marketing of the empowerment and service engendered in child neurology and developmental disabilities clinical care and research must be pursued.

The robustness (and therefore influence) of the workforce study of Kang et al. is limited by the low response rate of those polled, relative to the 2005 study. In addition, almost one-third of the respondents appear to be senior professionals. This sample bias may have skewed the data, particularly as a reflection of the perception of respondents on such matters as productivity metrics, referral patterns, and work hours. Finally, it would be useful in the 2016 data and future studies to parse out responses of child neurologists from those of neurodevelopmental disabilities physicians and to stratify the responses based on age or years in practice or the sex or race and ethnicity of the participants if sample size permits.

Furthermore, while the survey was delivered to extant members of the discipline (including trainees), it did not include information from referring providers or medical students. Referring provider information seems highly germane, particularly given some of the survey questions directed at neurologist perception of referring providers. In addition, it would seem the medical students should be queried about interest in the field, exposure to the field as part of their training, as well as

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perceived barriers (i.e., compensation, years of training) to becoming a child neurologist.

A question of fundamental importance in an update about the workforce is “How many child neurologists are needed?” Another important question is “Where are they needed?” The American Academy of Child and Adolescent Psychiatry (AACAP) workforce studies<sup>4,5</sup> consistently calculate the total workforce deficit. For example, recent AACAP and American Medical Association literature argues that there are currently about 8,000 child and adolescent psychiatrists, which is substantially less than the approximately 12,500 needed by 2020 to meet demand. What are the analogous numbers for child neurology? AACAP also points out the regional discrepancies in the number of child psychiatrists per 100,000 individuals ages 0 to 17 years. The state- and county-wise differences are dramatic across the United States, with some states having a near order of magnitude greater number of child psychiatrists per 100,000 people 0 to 17 years old than others. The workforce study by Kang et al. would be much more informative if the reader had an idea of how many child neurologists are needed and where they are needed.

Much is at stake in growing and maintaining the necessary workforce for child neurology and neurodevelopmental disabilities. Never before has so much been available for diagnosis, treatment and palliation, and research in this fundamentally important area. The quality of life and contribution to society of future generations of adults depends critically on having the wherewithal to care optimally for children and families with disorders of the nervous system.<sup>6,7</sup>

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### DISCLOSURE

N.F.S. is a member of the board of directors of the Child Neurology Society and, in this capacity, contributed to the editing of early and

final drafts of the manuscript by Kang et al. She is a director of the American Board of Psychiatry and Neurology and a member of the Scientific Advisory Board of Claritas Genomics, Inc., which performs laboratory testing and consultations for, among others, child neurologists and neurodevelopmental disabilities physicians. She is also an editor of the textbooks *Pediatric Neurology: Principles and Practice* (Elsevier) and *Nelson's Textbook of Pediatrics* (Elsevier). She receives research training funding from the NIH. B.L.S. codirects the NICHD-funded Intellectual and Developmental Disabilities Research Center and is director of the NINDS-funded Neurologic Sciences Academic Development Award (K12) program, both at Washington University in St. Louis School of Medicine. He serves on the scientific advisory board for the John Merck Fund, the scientific review panel for the Simons Foundation, and the medical advisory board for the Tourette Association of America. He serves as vice president of the Flux Society for Integrative Developmental Cognitive Neuroscience and serves as associate editor for *Developmental Science*. His research funding is from the NIH and Kiwanis International. Go to Neurology.org for full disclosures.

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