



# Health Workforce Projections: Neurology Physicians and Physician Assistants

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This fact sheet presents the national supply of and demand for the physicians and physician assistants (PAs) in a neurology specialty from 2013 through 2025 using HRSA's Health Workforce Simulation Model (HWSM).<sup>1</sup> While the nuances of modeling supply and demand differ for individual health professions, the basic framework remains the same. HWSM assumes that demand equals supply in the base year. For supply modeling, the major components (beyond common labor-market factors like unemployment) include characteristics of the existing workforce in a given occupation; new entrants to the workforce (e.g., newly trained workers), and workforce decisions (e.g., retirement and hours worked patterns). For demand modeling, the major components include population demographics, health care use patterns (including the influence of the increased insurance coverage), and demand for health care services (translated into requirements for full-time equivalents (FTEs)).

Important limitations for these workforce projections include: an underlying model assumption that health care delivery in the future (projected until 2025) will not change substantially from the way care was delivered in the base year (2013)<sup>3</sup>; and current rates of workforce participation and retirement will continue similarly, as well as current patterns of health care utilization. Changes in any of these factors may significantly impact both the supply and demand projections presented in this fact sheet. These projections also do not account for the geographical distribution of providers that may impact access to care in certain communities.

## BACKGROUND

Neurologists diagnose and treat nervous system disorders, including diseases of the brain, spinal cord, nerves and muscles. In addition to medical school, a physician typically has to complete four years of specialized residency training after finishing medical school and become certified by the American Board

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<sup>1</sup> This model uses a micro-simulation approach where supply is projected based on the simulation of career choices of individual health workers. Demand for health care services is simulated for a representative sample of the current and future U.S. population based on each person's demographic and socioeconomic characteristics, health-related behavior, and health risk factors that affect their health care utilization patterns. For more information on data and methods, please see [Technical Documentation for Health Resources Service Administration's Health Workforce Simulation Model](#)

<sup>2</sup> Ono T, Lafortune G, Schoenstein M. "Health workforce planning in OECD countries: a review of 26 projection models from 18 countries." *OECD Health Working Papers, No. 62*. France: OECD Publishing; 2013: 8-11.

<sup>3</sup> At the time this model was developed 2013 data was most current.

of Psychiatry and Neurology (ABPN) to become a Neurologist, and some neurologists complete additional training in neurology subspecialty fields.<sup>4,5</sup>

PAs are required to take the Physician Assistant National Certifying Exam (PANCE) offered by the National Commission on Certification of Physician Assistants (NCCPA), after completing a master's degree program. To obtain specialization in neurology, PAs usually train as generalists but gain experience on the job working with a neurologist.<sup>6</sup>

## FINDINGS

Between 2013 and 2025, the supply of neurologists will likely grow by 11 percent, while demand is projected to grow by 16 percent, resulting in a shortfall of 820 physician FTEs. For PAs working in neurology, the supply is expected to increase by 87 percent and demand is expected to increase by 16 percent. Future sources of growth in demand will primarily come from population shifts and an increased proportion of older Americans, who may experience age-related neurologic disorders, and autoimmune disorders. Expanded insurance coverage has a lesser effect.

*Exhibit 1: Estimated Supply and Demand for Physicians and Physician Assistants in Neurology in the United States, 2013-2025*

|   | Physicians<br>(FTEs) | PAs<br>(FTEs) |
|---|----------------------|---------------|
| <b>Supply</b>                                   |                      |               |
| Estimated supply, 2013                          | 16,100               | 870           |
| Estimated supply growth, 2013-2025:             | 1,770 (11%)          | 760 (87%)     |
| <i>New entrants</i>                             | 8,240                | 910           |
| <i>Attrition<sup>a</sup></i>                    | -6,420               | -150          |
| <i>Change in average work hours<sup>b</sup></i> | -50                  | 0             |
| Projected supply, 2025                          | 17,870               | 1,630         |
| <b>Demand</b>                                   |                      |               |
| Estimated demand, 2013 <sup>c</sup>             | 16,100               | 870           |
| Estimated demand growth, 2013-2025:             | 2,590 (16%)          | 140 (16%)     |
| <i>Changing demographics impact</i>             | 2,180                | 120           |
| <i>Insurance coverage impact<sup>d</sup></i>    | 410                  | 20            |
| Projected demand, 2025                          | 18,690               | 1,010         |
| <b>Projected supply (minus) demand, 2025</b>    | -820                 | 620           |

Notes: Numbers may not sum to totals due to rounding. All estimates rounded to the nearest 10.

<sup>a</sup> Includes retirements and mortality.

<sup>b</sup> This represents the change in provider FTEs resulting from a change in the demographic composition of the future workforce and the associated effect on average number of hours worked.

<sup>4</sup> [American Academy of Neurology Working with Your Doctor](#) Accessed March 9, 2017

<sup>5</sup> [American Board of Psychiatry and Neurology Taking the Specialty Exam](#) Accessed March 9, 2017

<sup>6</sup> [American Academy of PAs What is a PA](#) Accessed on March 9, 2017

<sup>c</sup> The model assumes that national supply and demand are in approximate equilibrium in 2013.

<sup>d</sup> The model estimates increased insurance coverage associated with Medicaid expansion and insurance marketplaces.

HWSM assumes that supply and demand for all specialties, including neurologists are in equilibrium in 2013. However, there is some evidence that of a shortage of neurologist. One study shows that the average wait time to see a neurologist is 35 days for a new patient visit and 30 days for a follow-up visit.<sup>7</sup> Further, as new treatment modalities and pharmacotherapies increase the survival rate of frail patients, the demand for neurology providers may increase. Greater incorporation of PAs in neurology care may help to alleviate the physician shortage in this field and reduce wait times to receive care.<sup>8</sup>

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<sup>7</sup> American Academy of Neurology. 2012 medical economics issues survey. Minneapolis (MN): AAN; 2012.

<sup>8</sup> Biller J, Schneck M. [The future of neurology](#). *Frontiers in Neurology*. 2011; 2:1