Neurologic care ... anytime?

Jamie L. Adams, MD; Benjamin P. George, MD, MPH; E. Ray Dorsey, MD, MBA

The demand for neurologic care is increasing, and the need for timely neurologic evaluation is high. As the population ages, the demand for timely neurologic care will only increase. Long wait times are associated with increased morbidity and mortality, perhaps due to delays in diagnosis and treatment.^{1,2} In addition, delays in care lead to decreased patient satisfaction and increased emergency department (ED) visits for nonurgent conditions. In 2001, the Institute of Medicine (IOM) targeted timely access to health care as essential to improving the quality of our health care system.³ Last year, the IOM issued a report on increasing access to care and transforming patient scheduling. This report highlights the importance of national initiatives to address this issue and calls for a multifaceted approach in evaluating and researching the problem including continuous health care supply and demand assessments.⁴

In this issue of *Neurology® Clinical Practice*, Nourazari et al.² discuss the mismatch between supply and demand for neurologic care. The study demonstrates how delays in outpatient neurologic evaluation are associated with increased emergency department visits (see Figure 2²). The average wait for a new neurology appointment in this clinic was 63.5 days and over 67% of appointments were scheduled out more than 21 days. Results of the study showed that patients who waited more than 21 days for a new patient appointment were nearly 7 times more likely to visit the ED before their appointment date. Neurologic diseases, including headache, dizziness, and seizures, accounted for approximately 6% of all ED visits in the United States in 2013 (table), over one-quarter of which were for chronic conditions.⁵ These visits are often nonurgent and can be managed in a less acute outpatient setting. Unnecessary ED visits have health and economic consequences and lead to overcrowding, inefficiencies in care, and higher costs. Nearly a third of the 130 million ED visits nationwide in 2010 were considered nonemergent, leading to \$35 billion in wasted health care expenditures.⁶

How do we address the discrepancy between supply and demand for neurologic care? Are there ways to reduce ED burden and improve health care costs? Can we find ways to provide neurologic care at any time?

In this issue of *Neurology: Clinical Practice*, Patel et al.⁷ propose one way to provide more timely neurologic care: neurology urgent care clinics. This study showed that the use of an urgent epilepsy clinic resulted in decreased ED visits for seizures and reduced health care costs. The authors identified urgent consultations from their practice and the community and saw 317 patients, with 83% receiving an appointment within 5 days. By providing timely outpatient care, they estimated a savings of close to \$500,000 due to avoiding unnecessary ED visits. Urgent care clinics are one way of providing neurologic care at any time. However, this would require specialists to commit to these clinics, including weekend clinics, to make this strategy most effective. The current reimbursement model may not support such an endeavor, though one solution might be to change reimbursement to provide incentive for urgent neurologic care. For instance, reimbursement for an outpatient visit with a detailed history and examination may range from \$73 to \$146 for a follow-up visit or \$109 to \$208

See pages 480 and 498

Department of Neurology (JLA, BPG, ERD) and Center for Human Experimental Therapeutics (JLA, ERD), University of Rochester Medical Center, NY.

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Correspondence to: jamie_adams@urmc.rochester.edu

Table Top 10 neurologic indications for US emergency department visits, 2013

Rank	Primary emergency department visit diagnosis ^a	Emergency department visits, no. in thousands (%) ^b	Percent classified as chronic conditions ^c
1	Headache disorders	3,034 (39.5)	32.1
2	Vertigo of peripheral etiology	1,214 (15.8)	0.5
3	Epilepsy and other seizure disorders	1,100 (14.3)	49.3
4	Cerebrovascular disease	971 (12.7)	2.2
5	Traumatic brain and spinal cord injury	696 (9.1)	0.9
6	Peripheral neuropathies and neuromuscular disease	310 (4.0)	60.3
7	Dementia, Parkinson disease, and other neurodegenerative conditions	232 (3.0)	100
8	CNS infection	51 (0.7)	1.0
9	Multiple sclerosis and other demyelinating disease	36 (0.5)	100
10	CNS neoplasm	28 (0.4)	98.0
	Total	7,673 (100)	26.5

^aNeurologic primary visit diagnosis classification was based on *International Classification of Disease, 9th Revision* (ICD-9) codes using Agency for Healthcare Research and Quality Clinical Classification Software.

^bEstimates for number of emergency department visits were obtained using the stratified weighted sample design from the 2013 Agency for Healthcare Research and Quality, Nationwide Emergency Department Sample.⁵

^cChronic disease classification was made using a modified Agency for Healthcare Research and Quality Chronic Condition Indicator based on ICD-9 codes. For cerebrovascular disease, only those with a diagnosis of late effects of cerebrovascular disease were classified as chronic conditions.

for a new patient.⁸ However, the average cost for an ED visit for a patient who presented with seizure discharged the same day from the ED in 2013 was at least 10 times greater: \$1,800.⁵ Perhaps a middle ground for reimbursement can be reached between these values to increase physician desire to participate in urgent outpatient care and help prevent unnecessary emergency department visits.

Of note, the study by Nourazari et al. was based in Boston, the US city with the highest number of neurologists per capita, and still there were substantial delays in care.⁹ In fact, Massachusetts is one of the few states in the nation to have a greater supply of neurologists per capita than current demand (and likely future demand). The solution is thus not to produce more neurologists (increase supply) but rather to increase reimbursement (prices) for patient care.¹⁰

In addition to urgent care, alternative models, such as telehealth and virtual or online visits, are options. The 2015 IOM report discusses implementing new methods of care such as telehealth or electronic consultations as a way to improve access to care.⁴ Telehealth has the means to provide timely care by reducing wait times, minimizing delays in care, and allowing for the expedient detection of adverse health trends.¹¹ Telehealth models have been used successfully in several clinical disciplines including neurology, cardiology, dermatology, rheumatology, and others. Remote patient–physician telehealth visits have allowed for increased access to specialty care and reduced the need for ED visits, particularly in patients with chronic conditions.¹² Virtual messaging systems have had similar results; after implementing secure messaging, the Veterans Health Administration saw a reduction in acute care utilization.¹³ These technology-based alternatives to traditional in-person visits have the potential of influencing supply and demand and decreasing costs of care. Certainly the delivery of virtual care will afford greater flexibility for both patients and physicians, and has the ability to address concerns about supply and distribution of neurologists. While reimbursement for telehealth remains a barrier to the widespread use of this care model, the growth of this technology is undeniable and will surely enable more people to receive needed care.¹⁴

As shown by the studies by Nourazari et al. and Patel et al., enhancing outpatient neurology access can decrease costs, reduce unnecessary ED visits, increase patient satisfaction, and, most importantly, improve health. A willingness to experiment with new models, new technologies, and new reimbursement models will help neurology meet the increasing needs of patients with urgent neurologic conditions.

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