Measuring the value of neurology

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Determining the value of a cup of coffee is relatively straightforward. When defined as a ratio of quality over cost, the value equation in this setting is easy to solve. How good are the coffee beans? What about the coffee maker? How fresh is the coffee? Finally, to determine the cost, simply look at the sign in the coffee shop or the price on the package. The best value comes from high-quality coffee offered at a low cost.

Calculating the value of complex health care services, such as those provided by neurologists, is considerably more complicated. Quality of medical care is hard to define and difficult to measure.[1] Pricing in health care is notoriously opaque.[2] Despite these barriers, there is growing interest among policymakers, payers, providers, and the public to consider the value of care delivered to patients. At the policy level, value determinations already have been used to adjust payment, such as through the Value-Based Payment Modifier and Value-Based Purchasing programs employed by the Centers for Medicare and Medicaid Services (CMS). There is a pressing interest in measuring the quality as well as the cost component of the health care value equation.

In this issue of *Neurology*®, Ney et al.[3] harness the power of a large, diverse administrative claims dataset to measure the value of neurologist participation in patient care. The study comprises 2 phases and 3 primary findings. The first phase of the study reviews the costs associated with neurologist participation in patient care among a number of common and uncommon neurologic disorders (such as Alzheimer disease, epilepsy, and amyotrophic lateral sclerosis). The second phase of the study examines differences in outcomes according to neurologist involvement, primarily in the form of health care utilization indicating adverse events or complications of neurologic disease.

First, and unsurprisingly, costs are higher when a neurologist participates in the care of a patient. A second critical finding is that the increased cost associated with the neurologist comes with improved quality: for example, a lower rate of urinary tract infections in patients with multiple sclerosis, and less depression among patients with idiopathic Parkinson disease. Finally, the authors demonstrate that patients treated by a neurologist are more likely to receive specialized, evidence-based, disease-modifying therapies for neurologic disorders, such as use of chronic anticoagulation in patients with stroke due to atrial fibrillation.

With these observations, Ney et al. have taken an important early step in quantitative measurement of the value our specialty provides at a population level. Studies such as these can be used to encourage policymakers to design appropriate incentives to preserve access to neurologic care.

In the claims dataset analyzed by the authors, patients with higher severity of disease were more likely to have seen a neurologist. This raises some questions: Were higher costs a reflection of worse disease severity, or involvement of the neurologist? Adjusting for severity of disease, can neurologist participation be associated with lower costs through cost avoidance? Finally, in risk-matched comparisons, are patients who see neurologists more likely to have higher quality outcomes? The claims data available to the authors did not permit analyses that could answer these questions. Examination of other datasets that allow more precise, patient-level risk adjustment and pseudorandomization techniques such as propensity score matching are more likely to yield answers to these critical questions.

It is difficult to overstate the need to measure value in ways that are meaningful to clinicians and patients. While administrative datasets such as those used in this study have many advantages, they are limited in terms of the clinical detail that we intuitively associate with high quality and value. Did patients' seizure frequency improve with medication adjustment? Have patients experienced improved quality of life with better management of their myasthenia gravis? Questions such as these are better answered with analysis of data from disease-specific or clinical quality data registries, such as the Axon registry being developed by the American Academy of Neurology.[4,5]

Neurologists are committed to delivering the highest possible quality of care. Beyond the utility of value determination at the population level, valid and meaningful value measurement tools could be

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used by individual neurologists to improve the value of their services. Patients could use similar information to help guide their own health care decisions, which is of acute importance in an era of proliferating high-deductible plans that expose patients more directly to their own health care costs.

Understanding our specialty's collective performance on the value equation could be helpful as our society examines its health care investment priorities. For example, in 2012, CMS spent more for a single medication, memantine ($1.5 billion), than it did for all Part B payments to all neurologists in the United States ($1.2 billion) (Brian Callaghan, MD, personal communication, 2015).[6,7] For an even broader perspective on priorities, in 2012 the United States as a whole spent about $36 billion on coffee.[8]

Measuring the value of neurology is one thing. Demonstrating that we are valuable is another. We applaud Ney et al. for their work, and hope to see further systematic investigation into the value of neurology in the future.

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