Episode-based care for stroke

Can neurologists play a leading role?

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In this issue of *Neurology® Clinical Practice*, Dr. Michael Dobbs argues that episode-based care, which would encompass acute and longer-term associated care, is a likely candidate model of reimbursement for stroke.¹ Physicians may be familiar with other bundled payment formats, particularly the diagnosis-related groups used by the Centers for Medicare & Medicaid Services (CMS) for determining inpatient care reimbursement to hospitals under Medicare part A.² Episode-based care would have the advantages of looking at recurrent care and utilization events up to 1 year following the initial treatment and would be a basis for professional payment of physicians. As Medicare extends its eye beyond discharge from the hospital (now seen in 30-day Hospital Readmission Rates³ and implementation of the Medicare Value-Based Payment Modifier⁴), value-based reimbursement for episodes of care may be in the near future.

A yearlong period of analysis would concentrate on care beyond the acute and postacute time frame. After diagnosis and treatment in the hospital, discharge planning is largely centered on getting the patient to the next point of care, whether that is an outpatient follow-up appointment, an inpatient rehabilitation facility, or a skilled nursing facility. The effects of stroke are not limited to the inpatient and immediate postdischarge phases. Failure to look further is a missed opportunity for improved cerebrovascular health, which, if not attended to, could lead to worsened and recurrent disease. Monitoring antiplatelet and anticoagulant effects, controlling blood pressure, managing lipids, and improving lifestyle (diet and exercise) are activities that demand attention over time. Medication nonadherence, failure to follow-up, or failure to address the lingering effects of stroke during subsequent outpatient appointments are all risks that the current system does not adequately address.

Dr. Dobbs contends that the value that a neurologist brings to stroke care is unclear in the wake of recent hospital-centered improvement programs. In the VA Stroke Study published in 2003,⁵ neurologists were more expensive than their counterparts because they ordered more tests for stroke, but they had considerably better outcomes, including improved mortality and disability. Neurologists were not cost saving, but they were more effective than non-neurologists. In the subsequent decade, hospitals that meet minimum standards to become Comprehensive Stroke Centers or Stroke Centers of Excellence have created stroke clinical care pathways, substituting algorithms and checklists for the clinical judgment a neurologist brings.

Within-hospital stroke pathways may be responsible for some improvements in acute care for stroke, but neurologists provide value for stroke care in the acute period and beyond. The neurologist, as an expert in the nature and pathogenesis of stroke, can bring specificity to stroke diagnosis and therapies. Through direct patient care and educating other health care providers, neurologists may reduce false-positive stroke alerts, overuse of imaging, and inappropriate use of thrombolytics. In addition to tailored inpatient diagnosis and management, the neurologist represents an

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important point of continuity after hospitalization. By establishing a therapeutic relationship during the inpatient stay, the neurologist is in a unique position to address medication side effects and adherence, new and recurrent symptoms, the effectiveness of rehabilitation strategies and nonpharmacologic interventions, and any new or lingering test results. For an overburdened primary care system, neurologist follow-up visits may be the best means of preventing recurrent stroke.

When aggregated over the total number of strokes in the United States, the effect of any cost savings and reduced recurrence is magnified dramatically. The American Heart Association⁶ reports that of the 795,000 incident strokes occurring annually in the United States, 185,000 are recurrent. Any reduction in recurrent stroke incidence would have a major effect on the estimated \$38.6 billion spent annually on stroke care. Neurologists need only show that they can help bend the cost curve through improved utilization during the inpatient stay and reduced incidence of recurrent events.

The value of neurologists in stroke care has not been fully established with the advent of stroke centers, so any critical evaluation runs the risk of showing that our involvement costs more without better outcomes. The neurologist's roles as advocate for long-term cerebrovascular health and steward of cost-effective health care are fairly new and relatively untested. Episode-based care, which takes a longer view of health care events after acute stroke, is more likely to capture our value than 30-day recurrence rates or other metrics, especially if we have higher up-front costs with better outcomes over time. As Dobbs points out, neurologists are responsible for only a small fraction of stroke costs in a year-long episode. Accurate case-mix adjustments would need to be made to ensure that reported outcomes properly account for stroke severity, especially during implementation of new coding schemes such as *ICD-10*. Still, the potential adoption of episode-based care by CMS is an opportunity to demonstrate the effect of quality stroke care by trained neurologic specialists during and beyond the acute stay.

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