Improvement in Stroke Performance Measures
Are We Moving Forward or in Circles?

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Trust but verify.
—Ronald Reagan

Collecting and monitoring performance measure data are resource-intensive, requiring time and effort by a team that includes health care providers treating the patients and documenting their care, quality personnel monitoring and working to optimize performance rates, and quality abstractors, who extract information from the medical record. Recently, an additional group of people have become involved, informatics personnel, who strive to extract information electronically and improve performance measure adherence rates through improved electronic health record (EHR) functionality such as documentation templates and electronic reminders.

With the increased focus on measuring processes and outcomes of care, performance measurement will become increasingly widespread.1-3 The National Quality Forum (NQF), the nonprofit organization created to help improve the quality of health care,4 continues to endorse new measure sets. The Centers for Medicare and Medicaid Services (CMS) Voluntary Pay for Reporting Initiative, which began in 2005 with the voluntary hospital-based collection of 10 NQF-endorsed measures, continues to expand, with 76 measures planned by 2014.1 In addition to the increased burden of data collection, the stakes for performance are rising—the CMS “Pay for Reporting” program has become “Pay-for-Performance,” with reimbursement linked to adherence rates.5

Stroke, one of costliest conditions for Medicare and a leading cause of disability and mortality,6 has been a focus for performance measurement activities. Eight NQF-endorsed stroke performance measures are currently used as part of the voluntary Joint Commission Primary Stroke Center certification and will be part of the CMS Hospital Inpatient Prospective Payment System program beginning with 2013 stroke hospital discharges.1 In addition, collection of 7 stroke performance measures using certified EHR technology is required if hospitals wish to qualify for incentive payments through the CMS Electronic Health Record Meaningful Use Incentive program.7

Given the increased concentration on collecting and reporting performance measures for stroke and other conditions, the study by Reeves et al8 is timely and important. Performance measure adherence has significantly improved in the Get With-The-Guidelines (GWTG)-Stroke registry over time.9 Using GWTG-Stroke data, the authors explored the relative contributions of data documentation trends to performance measure compliance for 7 measures in ischemic stroke admissions at hospitals participating in the GWTG-Stroke program between 2003 and 2009.

The 7 measures were (1) intravenous tissue plasminogen activator (IV tPA) administration within 3 hours of symptom onset for patients arriving ≤2 hours of onset, (2) antithrombotic use within 48 hours of admission, (3) deep vein thrombosis (DVT) prophylaxis within 48 hours of admission among those who were nonambulatory, (4) anticoagulants prescribed at discharge for atrial fibrillation/flutter (AF), (5) antithrombotics prescribed at discharge, (6) lipid therapy prescribed at discharge, and (7) smoking cessation counseling provided at discharge. Three additional stroke performance measures not evaluated in this analysis were dysphagia screening before oral intake, stroke education, and assessment for rehabilitation services.

Reasons for improved adherence to performance measures can include
- Increased rates of treatment
- Improved documentation of contraindications to performance measures

As outlined by Reeves et al, the presence of contraindications for process measures would reduce the number of patients in the measure denominator without affecting the number of patients in the numerator, which would favorably affect the adherence rate. Improved documentation of contraindications may be especially applicable for performance measures that have selective inclusion and exclusion criteria, such as IV tPA administration or discharge anticoagulants for AF.

A Change in Missing Information
Lack of clinical information may preclude a patient from being included in the denominator of a measure. If a high proportion of nontreated patients had missing information, this would generally increase adherence rates.

Improved Documentation of Measure Completion
This pertains to measures in which adherence is not always documented or easily abstracted. Examples of performance measures that may be significantly affected by this are stroke
education, which requires specific documentation of 5 different teaching elements, and dysphagia screening before oral intake, which requires documentation not only that the dysphagia screen was completed but also that it was performed before any oral intake.

Reeves and colleagues investigated the 2nd and 3rd potential explanations for improved performance by assessing the changes in the proportions of ischemic stroke admissions that (1) were deemed eligible for each stroke performance measure, (2) had documented contraindications or other exceptions to treatment for each performance measure, and (3) had missing data that were necessary to construct each performance measure. To do this, they divided performance measure results into 4 mutually exclusive categories and looked at trends over time for each category: eligible-treated, eligible-un-treated, contraindications, and missing data.

The analysis showed no clinically significant shifts in the proportion of ischemic stroke cases that were eligible for any of the measures except for DVT prophylaxis. However, DVT prophylaxis underwent a definition change in 2008.

There was improvement in adherence rates among eligible patients, with several measures demonstrating doubling in adherence between 2003 and 2009: IV tPA (14.2% to 28.9%), discharge antiocoagulation (28.0% to 69.1%), discharge lipid therapy (39.9% to 78.9%), and smoking cessation (43.0% to 94.5%).

Less prominent increases were found in the proportion of patients with contraindications documented over time in several measures: 8.7% between 2003 and 2009 for IV tPA, 2.5% antithrombotic use within 48 hours of admission, and 1.3% for DVT prophylaxis. The relatively small increase in the proportion with documented contraindications explains only a small portion of the improved adherence seen in these measures. For discharge antiocoagulation for AF measure, documented contraindications declined as adherence improved.

Missing data decreased in all measures except discharge antithrombotic prescription during the first 2 years of data collection, with much smaller declines in subsequent years. For example, cases with missing data for the IV tPA use measure decreased from 9.1% in 2003 to 1.0% in 2004, and missing data decreased in the measure antithrombotic use within 48 hours from 6.3% in 2001 to 1.8% in 2004. These findings suggest early improvement in documentation practices, although this difference does not explain the improved adherence to these measures, which increased continually through the study time period.

Importantly, the authors were not able to evaluate the fourth possible explanation for improved adherence, that of improved documentation of measure completion. It is possible that such improved documentation completion played a role in the improvement seen in adherence for some of these measures. In the DVT prophylaxis measure, abstraction of the use of pneumatic compression stockings, typically ordered for patients with hemorrhagic stroke, requires nursing documentation that stockings are being worn by patients. This nursing documentation probably improved over time with the increasing realization that “it wasn’t done if it wasn’t documented.” Indeed, hospitals in the Ohio Coverdell Stroke Registry have made significant efforts to improve documentation of DVT prophylaxis (Alice Lisky, BSN, MPA, Coverdell coordinator, personal communication, 2011). Similarly, improvement in adherence to smoking cessation counseling may have been due to improved documentation that counseling was performed.

The study shows that the often dramatic increase seen in the 7 stroke performance measures represents an increase in the number of stroke patients treated and not changes in the underlying target population or documentation of contraindications or missing data. Thus, Reeves et al provide reassuring information, given the extensive resources spent on performance measurement collection and reporting.

A limitation of this study was that it did not include 3 commonly used stroke performance measures: stroke education, dysphagia screening before oral intake, and assessment for rehabilitation needs. These measures could have been affected differently by documentation of contraindications or missing data.

A more significant limitation was the inability to more definitively evaluate changes in documentation practices other than by analyzing documentation of contraindications or missing data. It is quite likely that changes in documentation methods are important in performance of these standardized measures, given that extensive effort has been expended to optimize documentation to improve adherence just as has occurred to optimize coding for billing purposes. The impact of documentation on performance can be seen in the perturbation in performance rates that occur as hospitals change from paper charting to EHRs. Although many of the documentation changes in hospitals may serve to remind providers to comply with measures and thus improve actual rates of treatment, improved documentation of measure completion may be an important contributor for at least some of the process measures, as well.

As with other voluntary registries, there is the potential limitation of selective enrollment in GWTG -Stroke. This selection bias could theoretically lead to overall higher adherence rates. Although there is no evidence of a change in the target population in this analysis that would suggest this is an issue, this potential bias is difficult to exclude in these registries.

The ultimate question, of course, is whether collecting and reporting on performance measures improves patient outcomes. Although the relationship between performance measure adherence and improved outcomes is intuitive, it is often difficult to prove a direct relationship exists. Adherence to an individual measure in isolation may not have a clinically detectable impact on outcomes in clinical practice, making determination of an effect more difficult. Indeed, it is possible that a systematic approach to care, exemplified but not limited to improved adherence to process measures, is the key, although the stroke community is still struggling to identify the clinical impact of primary stroke center certification on outcomes after stroke. This is difficult but imperative to sort out. The analysis by Reeves and colleagues adds positive evidence to support continuing the effort to track and report performance measurement.
Disclosures
Irene Katzan is the lead physician for the Ohio Paul Coverdell Stroke Registry. She has previously served on the Steering Committee for Get With The Guidelines.

References

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