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How Can We Improve Quality of Care for Patients with Cirrhosis?

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The U.S. health care system ranks among the best in the world for treating rare and complex conditions, but performs less well on preventative and systems-based care.¹ For this reason, along with various social and cultural factors, we receive far less value for our health care dollars than any other country (Figure 1). This problem can be addressed via two avenues, namely reducing costs and improving quality. However, in order to improve quality one must first be able to measure it. Doing so has challenged health services researchers for years, ever since AvedisDonabedian first categorized quality of care into structure, process and outcomes.²

Cirrhosis is a complex condition where good medical care can significantly impact patient morbidity and mortality, but until recently there was no proven way to systematically assess that care. In this issue of *Gastroenterology*, authors Kanwal et al. describe an important advance in this field. Among a cohort of 774 patients with cirrhosis and ascites seen at 3 VA centers between 2002 and 2007, they report the proportion of eligible patients whose treatment met 8 quality indicators previously developed by their group.³ They found that only 33% of patients received all indicated care. For example, only 30% of patients with spontaneous bacterial peritonitis received antibiotics for secondary prophylaxis within 30 days of discharge, and 49% of patients with gastrointestinal bleeding received antibiotics during that hospitalization.

These results are shockingly poor, and unfortunately consistent with prior single-center studies.⁴ Why is it that our health care system can only manage to deliver appropriate care one-third of the time? One reason is the exponentially expanding volume of medical knowledge, which makes it difficult for generalist physicians to keep up on current standards of care for all diseases. Improved education may help, but is not the only answer – tertiary care specialists do not necessarily perform much better.⁵ The majority of the deficit may lie in the structure of our health care system, which is better suited for treating acute issues than chronic conditions.⁴ Care is episodic, symptom-driven, and reactive rather than proactive, which explains why Kanwal et al. found better performance on indicators of reactive care than on those measuring preventative care. This may also explain why patients with higher albumin and sodium levels were less likely to meet quality indicators, as these patients probably had less contact with the health care system. A final and important reason why performance will never be 100% is that the practice of medicine is a complex scientific and social art. In everyday practice there exist all kinds of justifiable reasons why providers rationally choose not to deliver certain care. In the parlance of quality measurement, these

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reasons are called “denominator exclusions.” By reviewing individual charts, Kanwal et al. found such denominator exclusions in 37.5% of cases where the quality indicator was not met, and there may have been more cases where the reasons were not documented. These undocumented reasons may explain the association between higher comorbidity index and lower performance on quality indicators.

This study was not without limitations. The findings may not be representative of medical care outside of those 3 VA centers, and some experts may argue whether some of the metrics (such as diagnostic paracentesis in every outpatient with cirrhosis and new onset ascites) are truly necessary. However, the value of this research lies primarily in advancing our understanding of quality measurement in cirrhosis. In order to function effectively, quality indicators must not only be medically justified, but also 1) be collectable using automated systems in order to reduce measurement burden, 2) have a clear numerator, denominator, and denominator exclusions for the sake of consistency, 3) be linked to the actions of one provider or one institution, and 4) occur with sufficient frequency to produce reliable estimates.⁶ The authors performed extensive chart validation to demonstrate that the numerators and denominators could be reliably measured using administrative data. Some of the indicators had relatively few denominator exclusions, and can thus be measured in an automated fashion. It remains unclear whether these indicators can be linked to one provider or institution in an open health care system outside of the VA, or whether they occur with sufficient frequency to produce reliable estimates. Thus, although this paper represents a significant advance, these metrics are not quite ready for routine quality reporting.

In summary, this study demonstrates that the quality of care delivered to patients with cirrhosis and ascites is far from adequate. How can this quality be improved? One idea is to publicly report quality indicators, and perhaps tie these indicators to reimbursement. After all, medicine is one of the only commercial markets without a clear quality-demand relationship.⁷ However, caution must be used to avoid unanticipated consequences. In diabetes, it has previously been shown that physicians can more easily improve their quality scores by discharging their patient with the lowest hemoglobin A1C, rather than struggling to improve the numbers of the entire patient panel.⁸ For this reason, thoughtful analysis of proposed quality indicators, as begun by Kanwal et al., is vitally important. Another way to improve quality of care in cirrhosis is to apply principles of chronic disease management. One component involves setting up protocols for continuous management of patients between visits.⁴ In our institution we enroll patients in a cirrhosis registry, with periodic performance assessment and reminders for scheduled testing. By doing so, we have improved our rates of screening for hepatocellular carcinoma from 74% to 93%.⁹ Other institutions are developing more innovative models of care.¹⁰

One additional finding that deserves comment is that in multivariable hierarchical regression, being seen by a gastroenterologist and being at an academic-affiliated facility were both significantly associated with better quality of care (odds ratio 1.33 and 1.73, respectively). Similar findings have been reported previously.¹¹ In the current health care environment, with the advent of accountable care organizations (ACO) and other initiatives, the pendulum may be swinging back to focus on primary care. Efforts by Kanwal et al. and others will help ensure that gastroenterologists have a seat at the health care table of the future.

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Figure 1.
Return on investment of health care dollars by countries. Adapted with permission from
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