

## Invited Commentary

# Physician Practice Style Variation—Implications for Policy

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**Practice style variation** at the regional level has been well documented at different geographic levels, but there is much less research focusing on the role of individual physician variability in practice. Two studies<sup>1,2</sup>



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have shown considerable variation in the practice styles of cardiologists who treat patients with acute myocardial infarction and obstetricians who perform cesarean-sections, but less is known about how the use of nonrecommended or “low-value” care varies across physicians.

In this issue of *JAMA Internal Medicine*, Lipitz-Snyderman et al<sup>3</sup> make an important contribution to the study of physician practice variation. Using the surveillance, epidemiology, and end results (SEER) database and Medicare data from 2004 to 2011, they created a sample of physicians who treated patients diagnosed with cancer. They then compiled, for several procedures, rates of nonrecommended cancer care services based on the Choosing Wisely campaign. Rates of nonrecommended care ranged from 14% for imaging in early-stage breast cancer, to 41% for imaging in early-stage prostate cancer, and 35% for extended fractionation schemes for palliation of bone metastases. They then used statistical modeling to estimate a remarkably high degree of variation among physicians in their likelihood of using nonrecommended services for cancer patients. These findings provide strong evidence that some physicians persistently use low-value care. Finally, the authors found that patients of physicians who own imaging equipment generally receive more nonrecommended imaging.

Their study design is particularly strong for several reasons. First, it avoids the risk-adjustment debates that sometimes arise in studies of variations: are utilization rates higher in some regions because of unwarranted treatment, or because patients are more sick? The authors neatly sidestep this concern by using the SEER data that contains excellent information on the staging of cancer. Furthermore, rates of nonrecommended services don't need to be risk adjusted—they are unlikely to yield clinical value for any patient, sick or healthy. Second, there is often a debate over whether low-utilization providers are undertreating their patients, or high-utilization providers are overtreating their patients, with the key question becoming “which utilization rate is right?” By focusing on nonrecommended treatments, this question becomes moot—the “right” rate is close to (but probably not exactly) zero.

One of the shortcomings of regional analysis in health care utilization is that it's not always clear who is responsible for unusually high or low rates. By analyzing data at the physician level for treatment options, the degree of provider accountability is much greater. Yet 1 earlier study<sup>4</sup> argued against the use of physician-level performance assessment because of statistical imprecision. They found that even when physicians were seeing upwards of 100 patients annu-

ally, the potential for accurate performance assessment was weak because of statistical noise. While that study<sup>4</sup> may have held performance assessment measurement to unrealistic standards—even imperfect information is useful—the problem is much more severe in this sample of elderly Medicare enrollees with cancer, where the median number of patients per physician over the 8-year period ranged from 3 to 11 across nonrecommended treatment categories. In practice, being able to follow all patients of a specific physician (rather than a sample, as in this article) would mitigate some of these concerns, but statistical imprecision still cautions against too much reliance on physician-specific report cards. Combining data on patients across several Choosing Wisely measures would provide greater statistical power in identifying outlier physicians.

Another potential concern with these results is that the period of analysis (2004-2011) precedes the rollout of the Choosing Wisely program (2012). Are we therefore holding practicing physicians in 2004 to an unduly high standard based on evidence known only in 2012? For example, the Cochrane Database Systematic Review in 2004 noted concerns with single-fraction radiotherapy for palliation of metastatic bone pain because of higher rates of retreatment and pathological fractures,<sup>5</sup> while during the late 1980s, there was considerable interest in using MRIs to stage prostate cancer.<sup>6</sup> These issues were resolved in major randomized trials (single-fraction radiotherapy in 2005; prostate cancer imaging in 1990), but it still may be the case that physicians with established beliefs or practice styles might not necessarily change their minds quickly because of the publication of 1 or 2 studies. Lipitz-Snyderman et al<sup>3</sup> do not explicitly explore the role of experience in nonrecommended use, but other research<sup>1</sup> has shown that physicians establish their practice styles early and that practice styles exhibit persistence over time. The question then becomes: How might physician beliefs be changed, particularly among those who own imaging equipment?

Early results on the impact of the Choosing Wisely program alone are not encouraging. For example, a recent study<sup>7</sup> found that the use of low-value services declined in only 2 out of 7 cases after the launch of the Choosing Wisely campaign and that the declines were marginal. If institutions wish to change physician behavior, then more active interventions are necessary. Two commonly used approaches for modulating physician practice styles are financial incentives and “nudging.” Pure financial incentives through “pay for performance” programs have mixed effects. Paying less for nonrecommended care is 1 possibility, but it may discourage the use of imaging for unusual patients who fall outside the “recommended” categories, but for whom the treatments may be clinically appropriate. Additional restrictions on physician ownership of imaging equipment are a somewhat indirect approach to reducing rates of nonrecommended care.

There are some promising preliminary randomized trials that have established that “nudging,” or providing physicians with information about how their practice styles compare to their peers, has a beneficial impact on physician behaviors.<sup>8</sup> While the initial effects are relatively modest, they could strengthen over time, particularly if nudging is used in conjunction with financial incentives. Regardless of how one approaches the challenge to reduce the use of nonrecom-

mended treatments, Lipitz-Snyderman et al<sup>3</sup> have provided critical evidence to show that such behavior is more common than previously thought, and that it can be measured and (imperfectly) monitored at the physician level. These results raise hopes—even among pessimistic economists like ourselves—of developing new incentive approaches to achieve better treatment at lower cost by reducing the use of nonrecommended care.

#### ARTICLE INFORMATION

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**Correction:** This article was corrected online on August 29, 2016, for a citation error in the final paragraph.

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