

# Virtual Mentor

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## OP-ED

### Does Location Determine Medical Practice Patterns?

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It is said that the three most important factors in real estate are location, location, and location. There is a large body of research that suggests the same applies to health care spending. The Dartmouth Atlas of Healthcare, first published in 1996 by John Wennberg and colleagues, has shown wide geographic variation—as much as a 250 percent difference between one place and another—in fee-for-service Medicare spending [1]. The group’s basic narrative is that, after adjusting for area differences in Medicare payment levels and patient health, very wide geographical disparities in costs remain. Moreover, adjusted area spending is not positively correlated with better health outcomes, and in some instances it may be negatively correlated. As a result, the unexplained variation in costs across geographic regions represents differences in how cost-efficiently health care is provided. Finally, since area costs tend to be higher in areas with greater numbers of physicians and hospital beds, the major culprit according to the atlas is too many “supply-sensitive” services (as opposed to effective or preference-sensitive services) provided in high-spending areas. Supply-sensitive services, including some physician visits, diagnostic tests, hospitalizations, and admissions to intensive care, are those whose appropriate use and frequency are not well established by clinical research. Implicitly, these are services of marginal or no value to the patient for which physicians are able to “induce” additional demand [2, 3].

To be sure, the Dartmouth Atlas and associated researchers have done a great service in highlighting these variations and in using the variations to make the case that our health care system is very inefficient. There are few US health services researchers who would disagree that our health care system is rife with inefficiency. The US pays about 50 percent more than other developed nations for the same or poorer health outcomes. Nor would most argue that physicians never respond to economic incentives or induce demand for their services. However, I would argue that although there are clearly variations in clinical practice across areas—some of which reflect relative degrees of system efficiency—the degree of variation and the importance of geography in general are overstated by the Dartmouth group and parts of their basic narrative rest on simple associations that may not stand up under closer scrutiny.

All agree that there are many factors that influence Medicare spending. Some are “warranted,” while others, most clearly fraud and abuse, are not. Among two of the most important warranted reasons are payment variation and population health [4]. First, the traditional fee-for-service Medicare system reimburses different amounts for the same service in different areas of the country. For the most part, these

adjustments are for local input prices (e.g., local wage levels), although they also reflect a complex web of other payment policies.

Second, it is widely accepted that disease burdens vary considerably across regions, as a result of differing demographic characteristics, rates of smoking and obesity, and so on. The Dartmouth research has by and large used inadequate methods to adjust for area differences in payment and population health. In work with Jack Hadley and Patrick Romano, we find that careful control for Medicare price variations accounts for over 20 percent of geographic spending variation, and that—after controlling for payment variations—population health accounts for at least 75 to 85 percent of the remaining variation. We also found that the approach used by Dartmouth researchers to adjust for area variations in patient health actually adjusts very little because it rests on the faulty assumption that patients in different regions are equally sick in their last months of life [5].

Absent much better clinical data, there is no perfect way to adjust for patient health, and we researchers will continue to argue over the best methods. Despite the uncertainty about how much geographic variation remains after adjusting for payments and health, it is not appropriate to attribute the remaining geographic variations in spending to “unwarranted” variations in the efficiency of health care delivery, as Dartmouth researchers have often done. The unexplained variations could also be attributable to patient preferences for care, state policies affecting health care professionals, further variations in patient health that current case-mix methods don’t account for, and other factors [4].

The assertion that high-spending areas have no better health outcomes than low-spending ones is based on observational studies that fail to account for the fact that sick people typically use more medical care and have worse health outcomes than healthy people [6]. In other words, correlation has been confused with causality. More sophisticated studies that have addressed this problem of reverse causality find that spending more on Medicare patients improves health outcomes. Similarly, inadequate adjustment for patient health likely confounds the positive correlation found between area costs and clinician supply [7-9]. There is more demand for medical care where people are sicker.

Particularly in earlier years, it was often stated by Dartmouth researchers that, if only the high cost areas could emulate the way that health care is delivered in low-cost areas, the Medicare program could realize 30 percent or more in savings [2, 3], a number still often cited [10]. Yet, there is no clear path to turning a high-cost area into a low-cost one. In a recent study, colleagues and I found that the mix of services varies considerably both among both high-cost sites and among low-cost ones. This suggests that local health care systems find their own ways to provide medical care, with no simple way available for higher-cost sites to emulate lower cost ones. Two of the services that disproportionately contributed to variations between high- and low-cost sites were durable medical equipment and home health, services that have been rife with fraud and abuse in many areas—undoubtedly a cause of health system

inefficiency [11]. Indeed, increased efforts to cut down on Medicare fraud in recent years have led to sharp declines in spending in communities such as Miami, Florida, and McAllen, Texas, which have received much attention as high-cost bastions.

In other recent work, we looked at geographic variations in the treatment of specific conditions. We found, similar to results of a study by the Medicare Payment Advisory Commission (MedPAC) [12], that areas tended to be high-cost in the treatment of some conditions and low-cost in the treatment of other conditions [13]. Although local practice patterns and perhaps even the supply of relevant physician specialists were associated with the costs of treating specific conditions, it was the prevalence of those conditions and the number of comorbidities among those who were treated for them that were most strongly associated with total per-beneficiary costs across areas [13].

All this is to say that, although location matters, variations in medical practice are far more complex than the simple narrative popularly attributed to the Dartmouth Atlas. This point was emphasized in a recent report on geographic variations by the Institute of Medicine [14]. Apart from noting that geographic cost variations differ considerably by payer (Medicare, Medicaid, and private), they found that within the hospital referral regions typically used by the Dartmouth Atlas project there is often as much cost variation within regions as between them.

Where I think most health services researchers, including those associated with the Dartmouth Atlas group, can agree is that the best approach to increasing the efficiency with which we deliver health care in this country, and coincidentally reducing geographic variations, is to better define and communicate best clinical practices, encourage physicians to enter integrated systems of care—larger multispecialty organizations that provide greater care coordination and management—and reform the payment system to promote better outcomes and greater value rather than fees for service, which rewards provision of more services. To their credit, some Dartmouth researchers have been leaders in advocating for new delivery and payment models—such as accountable care organizations (ACOs)—that are currently being tested by public and private payers.

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