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Medical Mystery: Why Is Back Surgery So Popular in Casper, Wyo.?

[The New Health Care](#)

By AUSTIN FRAKT and JONATHAN SKINNER FEB. 13, 2017

You might think that once drugs, devices and medical procedures are shown to be effective, they quickly become available. You might also think that those shown not to work as well as alternatives are immediately discarded.

Reasonable assumptions both, but you'd be wrong.

Instead, innovations in health care diffuse unevenly across geographic regions — not unlike the spread of a contagious disease. And even when studies show a new technology is overused, retrenchment is very slow and seemingly haphazard.

Back surgery is a great example. In the early 1990s, when John Wennberg's [Dartmouth Atlas of Healthcare](#) first started tracking treatment rates among older [Medicare](#) users, back surgery was relatively uncommon; 1992 rates were as low as one case per thousand in cities as diverse as New York and Johnson City, Tenn.

By 2006, average rates of back surgery had increased to 4.9 per thousand. The procedure had spread rapidly across the Northern Plains and Mountain States. Growth was especially significant in certain cities elsewhere — like Lubbock and Harlingen, Tex. Yet rates in New England and some parts of the Midwest had barely budged.

Even as back surgery's popularity as a treatment for back pain began to rise in the 1990s, there was little solid evidence of its effectiveness. It wasn't until 2006 that the first large randomized trial on the subject was [published](#).

That study showed relatively modest benefits of surgery for many conditions that lead to back pain. While many patients felt better after a year, so did a nearly equal proportion of people in the control group who didn't have surgery. However, years before that evidence was available, some regions had adopted back surgery at a high rate, while others had not.



Credit Bsip/UIG, via Getty Images

Back Surgery Medicare Beneficiaries

Video: This shows back surgery rates for 306 hospital referral regions from 1992 to 2014. Created by the Dartmouth Atlas Working Group, Brook Martin PhD., and Sandra Sharp. Publish Date February 12, 2017.

The rates of back operations performed in hospitals began to flatten after 2006, but little was known about growth in the treatment in outpatient clinics, the same-day facilities with greater convenience and lower costs. Recently, Brook Martin and Sandra Sharp, two Dartmouth researchers funded by the National Institute of Aging, tracked outpatient as well as inpatient procedures through 2014. The finding: [Rates of Medicare back surgery](#) had grown 28 percent since 2006, with no decrease in regional variations; rates in 2014 ranged from 3 per 1,000 in the Bronx to 11.5 per 1,000 in Casper, Wyo.

The puzzling thing is why back surgery became more popular in certain broad regions, but not in others. Why, for example, did rates grow so rapidly in the Northern Plain states while rates in New England barely budged?

Our best guess comes from a study by Harvard and Dartmouth researchers, not on back surgery, [but on cardiac treatments](#). It found that regional variation in Medicare spending is associated with variation in physician preferences for intensity of cardiac treatments, and to a greater degree when the evidence is ambiguous. Patient preferences exerted almost no influence. It's likely that the pattern holds for back surgery, too, though it has not been studied in the United States.

It's tempting to conclude that there are simply regions where the intensity of care of all types is higher — that some regions invest in all of the latest shiny technologies, while others don't. This is too simple; Miami and McAllen, Tex., the two most expensive regions in the United States for overall Medicare spending, also clock in with among the lowest spine surgery rates. Instead, we see what Mr. Wennberg calls a [surgical signature](#): Casper Wyo., has the highest back surgery rate in the country, but its cardiac bypass surgery is well below the national average.

This puzzling pattern once again points toward idiosyncratic physician beliefs. Orthopedic surgeons in a particular hospital may be more aggressive, while the cardiologists there are less so.

Though we can't say this is the answer with 100 percent certainty, we can rule out some other explanations. One is how much surgeons are paid. Since Medicare pays the same price for the procedure (adjusted for cost of living) across the country, prices can't explain the paradox. The high rates in Denver could also be explained by back pain sufferers who flock to star surgeons and well-known hospitals there, but this doesn't hold water either. The way the statistics are compiled, if a medical tourist traveled from Des Moines to Denver, the Medicare record keepers would assign that operation back to the tourist's home in Iowa.

Maybe it's differences in health. Perhaps areas with rapid growth in back surgery were those where more people had back pain. Yet northern New England retirees had similar histories of

hard physical labor in farming, lumbering and manufacturing, and were no more affluent than their counterparts in the Northern Plains states.

Another explanation might be that patients prefer surgery in some regions of the country. One [study](#) observed large variations in back surgery across small regions in Ontario, but these weren't explained by patient preferences. That study, like others, found physician beliefs about the benefits of surgery were associated with surgical variations.

If physicians are driving back treatment choice, even for procedures not supported by evidence, what can be done? One [approach](#) is to provide patients with unbiased information about the potential benefits and risks of back surgery relative to nonsurgical therapy so they can make informed choices. But the concern remains that for people in intense pain, when the doctor says that "I get good results with surgery, and my patients generally feel much better," the back surgery option, with little out-of-pocket cost, will be hard to resist.

Another option is for hospitals or insurance companies to audit outlier physicians, as in a recent [example](#) of a back surgeon with a pattern of unusually high billing. In his audit, nine of 10 procedures were deemed not medically necessary.

A third option is to push people toward high-quality back surgery centers. Walmart created a [network](#) of high-quality spine centers for its employees that includes Virginia Mason Hospital in Seattle and the Mayo Clinic. It charged hefty co-payments to anyone getting surgery outside the network. The company found about a third of referrals didn't need back surgery.

Often discussed, the big challenge in health care is to reduce spending by cutting wasteful care. It seems just as important, though, not to let more waste creep in as it did with back surgery. Once it spreads widely, it's very hard to undo.

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