



Back pain is behind a debate

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For some, it starts with a sharp, wrenching pain. For others, it comes on gradually, spreading from the lower back to the legs, making the most benign of daily activities excruciating.

"There was no position where the pain went away, whether I was standing or laying down," says Jim Burrows of Corinth, Texas, an operations analyst for Capital One auto finance. One leg began to go numb, and he lost strength in it.

After more than two months of trying over-the-counter medications, prescription drugs, physical therapy and painkiller injections, Burrows finally decided he'd had enough. On Thursday, surgeons removed a small piece of the disc surrounding the inflamed nerve causing the pain, the second time Burrows joined the ranks of Americans who have had back surgery.

Burrows returned home from the hospital on Monday, saying he could tell that his back pain was lessened, but that it would take a week or two to find out if muscle strength would return to his affected leg. Burrows had to remain in the hospital longer than expected after surgery after experiencing a not-uncommon side effect: a small nick was made in the lining that surrounds his spinal cord, so he had to remain flat on his back for 48 hours while it healed.

Debate about how much back surgery is needed remains contentious. Some researchers say too much is being done while others say advances in treatments are helping more Americans hobbled by back pain to regain their lives.

The chance that a back-pain sufferer will receive surgery, which includes the risk of serious complications and doesn't always end the pain, often depends on where that patient lives.

For example, researchers found spinal surgery rates in 2002-2003 were almost eight times higher in some parts of the country, including Casper, Wyo., and Mason City, Iowa, than the lowest-surgery areas, such as the Bronx, N.Y., Honolulu, east Long Island, N.Y., and South Bend, Ind.

Yet the percentage of people with back problems does not differ that much between regions.

Researchers used data on Medicare patients; their findings will be published in the Nov. 1 issue of the medical journal [Spine](#). The study found nearly five out of 1,000 Medicare patients in high-surgery areas went under the knife, compared with as low as 0.6 per 1,000 in low areas.

Health care experts say spine surgery is just one example of how a complex set of conditions, which include expensive new technology, varying doctor preferences, financial incentives, patient expectations and a lack of data on what works best, is helping drive demand for medical care and raising costs.

"Certain areas seem to have more surgery and not necessarily because there are more surgeons there," says James Weinstein, professor and chairman of orthopedics at Dartmouth University and one of the authors of the study.

He says back problems are not more common in high-surgery areas. The trouble is there isn't always good data that show when surgeries should be done and when they should not, he says.

"I'm not against spine surgery. I'm a spine surgeon," Weinstein says. "But we need to find out what works and make sure people who have those problems get it. We don't do that well."

The debate over back surgery reflects a larger issue in medicine: how to balance the desire to embrace new technology, drugs or surgical treatments, all major drivers of health care inflation, without overusing them. The debate is even harder when effectiveness studies conflict or are not done at all.

"When new devices come out, you want to see that they are proven," says Richard Guyer, incoming president of the North American Spine Society. "They should not be overused in the beginning. But if you don't use them at all, you never know if there's any benefit to the patients."

A costly problem

Lower back pain is a condition that eight out of 10 Americans will experience at some point. And the cost is measured in more than just pain: Medical treatment of back pain is estimated to cost \$25 billion annually, according to Duke University researchers. Workers compensation costs and time lost from work add another \$25 billion.

A growing share of those costs are from surgery. While over-the-counter medication and physical therapy are usually the first line of treatment, surgery for back pain has been rising rapidly for years.

One of the fastest-growing types of spine surgery, as well as the most expensive and controversial, is called fusion, which melds two or more vertebrae together.

Researchers say there is evidence that spinal fusion is most effective for certain types of problems, such as some types of fractures and spondylolisthesis, a condition that causes vertebrae to slip.

"Beyond that, things get much more controversial," says Richard Deyo, a professor of medicine at the University of Washington in Seattle, who has published extensively on back pain treatment. "Perhaps the most controversial is (surgery) for patients who just have back pain from degenerated discs. And that's where the rate (of surgery) is increasing fastest."

Deyo says four randomized studies have been done on fusion for degenerative spinal discs, all in Europe. One suggested fusion was better than non-surgical alternatives; three did not, he says.

"Even if you take all of those (studies) at face value, you have to conclude that, even if it's effective, it's only modestly effective," Deyo says. "It's not a slam-dunk."

Despite the uncertainty about how effective the treatment is for patients with more run-of-the-mill lower back pain, the number of fusion surgeries rose 127% from 1997 to 2004, to more than 303,000, data from the Agency for health care Research and Quality show.

And, like spinal surgery in general, whether a patient gets fusion often depends on geography.

The research in *Spine* shows a patient could be 20 times more likely to have spinal fusion in some parts of the country than others. Areas with higher rates of spinal fusion surgeries include Idaho Falls, Idaho, where 4.6 Medicare members per 1,000 have the surgery, and Missoula, Mont., and Mason City, both with three surgeries per 1,000 enrollees. Lower-than-average spinal surgery rates were in Newark with 0.4 surgeries per 1,000; Terre Haute, Ind. with 0.3; and Bangor, Maine with 0.2.

Many factors, from the supply of doctors and hospitals to the expectations of patients, can affect the variability of surgery. But a percentage may be unnecessary, Weinstein and other researchers say. The problem is: No one knows the proper percentage.

"In spine surgery, it's hard to say how much of it is egregiously wrong," says John Wennberg, director of the Center for the Evaluative Clinical Services at Dartmouth Medical School.

That's often true for many other medical treatments. Most doctors and hospitals have no financial stake in determining how much treatment is too much.

"Physicians and hospitals, by and large, get paid by the piece for what they do, so they have no financial interest in looking hard at the issue of overuse," says internist Mark Chassin, professor and chairman of the department of health policy at Mount Sinai School of Medicine in New York.

"The U.S. health system does a great job in developing new and innovative treatments, but it does not do a good job in thoroughly and rapidly evaluating those innovations to find out when they work and when they don't," he says.

'A pall' is cast

That approach may change as more focus is placed on assessing cost and benefits.

Though spinal surgery is not yet on the list, Medicare already has launched several pilot programs to track patients who receive certain treatments, such as implantable cardiac defibrillators, to help determine which types of conditions and patients see the most benefit.

Medicare on average paid \$16,842 a patient for spinal fusion in 2005, according to data from the agency.

The amount Medicare has spent on fusion surgeries has risen 500% over a decade and now represents nearly half of the \$1 billion the government health program spends on all spine surgeries, the study in [Spine](#) says.

Though many physicians say surgery remains an option only after more conservative approaches have failed, some also say too many fusion operations are performed.

John Houten, a neurosurgeon and assistant professor of neurological surgery at the Albert Einstein College of Medicine in the Bronx, says there are good reasons to perform spinal surgery on patients who have conditions that have led to pain or weakness spreading to the legs and for patients with fractures.

But beyond that, "far too many spinal fusions are done. It makes me mad when I see all the surgeries being done that may not be done for the right indications, because it causes a pall to be cast upon the entire discipline."

Proponents say the growth in fusion is driven by advances in surgery that have shortened the recovery time for some patients, along with growing demand from back pain sufferers. They have a very different view of the published studies on back surgery.

"There is very good evidence that shows spinal fusion is helpful for patients," says Guyer, who, in addition to his position with the spine society is a surgeon at the Texas Back Institute in Plano, Texas. He was Burrows' surgeon for both operations.

Treatments at the back institute can range from over-the-counter medicine to physical therapy. The center prides itself on using a variety of approaches and says 11% of patients end up having surgery.

Sometimes, demand is fueled by patients.

Patients with back pain often want surgery, says Thomas Sweeney II, a surgeon at the Southeastern Spine Center and Research Institute in Sarasota, Fla., a city where fusion surgeries among Medicare patients are performed at a rate higher than the national average, according to data gathered by Dartmouth researchers.

"Here in Sarasota, patients want to play golf and tennis, and they're in their 80s," Sweeney says. "There's a huge demand to be able to do what they want to do."