Spinal surgery is on the verge of a transformation. After decades of fusing vertebrae with grafts from the patient’s own bone, spine surgeons have new options, from “fusion helpers” like bone morphogenic protein (BMP) to the artificial disc.

More is coming.

In the next few years, spinal fusion is expected to begin shifting to new technologies that are intended to preserve motion while stabilizing the spine. The first artificial disc, introduced in late 2004, is the tip of the iceberg, observers say. At least 60 of these “nonfusion” devices are in development.

That isn’t necessarily good news for perioperative leaders. They’re already bombarded with new products and have to figure out how to meet surgeons’ requests while staying on budget.

To illustrate:

- The number of spinal fusions rose by 77% between 1996 and 2001, much faster than the 13% to 14% for hip and knee replacements.
- The average implant cost for a lumbar fusion has risen by more than 90% since 2001.
- Use of BMP increased from less than 20% of fusion cases in 2002 to an average of 50% of cases in 2005 in a group of hospitals tracked by Orthopedic Network News.

A new product for spinal surgery comes out almost every month. Yet there’s scant data on whether these products—and spinal fusion in general—improve outcomes.

Most spinal fusion surgery is done without clear evidence that it benefits patients, Richard Deyo, MD, MPH, an outcomes researcher at the University of Washington, Seattle, wrote in The New England Journal of Medicine in 2004.

“There is an underlying question: How confident can we be that a degenerated disc is the real cause of an individual’s back pain?” Dr Deyo told OR Manager in an interview. The inference is usually made from discography, which is a controversial test.

Basic questions

“I think there are some basic questions about identifying patients who are most likely to benefit either from fusion or an artificial disc,” he says.

Recently reported randomized trials comparing spinal fusion with the new artificial disc showed the artificial disc was equivalent, not better, he says, adding, “It makes me step back and ask, Is this really a giant advance?”

He thinks there should be a “major research agenda ahead” for the artificial disc and other new technology.

“As a society, we have to ask ourselves, would we rather pay a few million dollars now for testing of these devices or put them on the market and pay billions of dollars before we study them and discover how effective they are?” Dr Deyo says.

Meanwhile, perioperative leaders face decisions about managing this expensive technology. Strategies some organizations are using:

- organizing a spine leadership team including key spine surgeons and other decision makers
- assigning a dedicated director to the spine program
- building a database to track implants, treatments, and outcomes
- seeking active participation of surgeons
- developing vendor strategies for spinal implants (related article).
It’s not just surgery

The HealthEast Care System, St Paul, Minn, with 3 hospitals and 2 surgery centers, is taking a coordinated approach to spine. With $4.1 million spent on 1,300 spinal surgery cases in fiscal 2005, administrators said something had to be done. Spine surgery is profitable at HealthEast because of a good payer mix but faces technology and reimbursement challenges.

The program is guided by a spine leadership team plus a co-management group of senior administrators and physicians plus a full-time director.

The team started with a focus on surgery but realized it needed a broader program. Only 10% to 20% of spinal care is surgery. Increasingly payers want to see a coordinated, evidence-based approach, says Kathleen Killeen, MOT, HealthEast’s service director for orthopaedic and neuroscience services. In 2005, HealthEast’s strategies yielded $350,000 in savings on 1,300 spine cases.

The team knew support from physicians and physician leaders was essential. Physicians needed to help establish protocols and educate primary care and emergency physicians, therapists, and nursing personnel about appropriate care.

The spine program director was added in 2004. The director, Julie Blatnik, RN, BSN, CNOR, a former director of surgical services, says she’s an “ambassador to the physicians,” working on technology issues, clinical processes, costs, and data reporting.

She thinks OR directors have too many other responsibilities to be able to manage spine, too. “It’s overwhelming—and you don’t have time,” she says. “If your program is large enough, it needs a person who can give it dedicated attention.”

A smaller program that can’t hire a full-time director might consider assigning the role to an OR business manager, she suggests.

Reimbursement lags

The rising cost of new products hasn’t been matched by reimbursement. BMP is a good example, Blatnik notes. Though approved for single-level procedures with a cage, much of BMP use is now off label. BMP can add $3,000 to $10,000 to a procedure depending on how much is used. Yet Medicare reimburses for these cases as if they were basic fusion cases without use of BMP. An add-on payment for BMP was removed for fiscal 2006. HealthEast hasn’t seen add-on payments or carve-outs for BMP from other payers in its market.

Artificial discs are another challenge. The first artificial disc (Charite by DePuy Spine) was approved for patients with degenerative disc disease at the L4 to S1 level in the lumbar spine. The disc lists for about $11,500.

Many spinal surgery patients are covered by workers’ comp, which is a better payer than Medicare, at least in Minnesota. But some states, such as Tennessee and Ohio, alarmed by rising costs, are taking action to lower workers’ comp reimbursement.

“World has changed”

Insurance companies are scrutinizing new technology more closely.

“The world has changed,” Dr Deyo says. It used to be companies could invest in a technology such as the artificial disc, get it through the FDA, and providers would use it and insurers would pay for it. But insurance companies are now setting a higher bar than the FDA. They want to know not only that a device is safe and does what the company says it does but also makes a difference in patient outcomes.

To some extent insurance companies are withholding payments to save money, he says. “On the other hand, they’re probably correct in insisting on a scientifically rigorous demonstration that very expensive new technologies are superior in terms of pain and functional improvement.”

With a tight reimbursement environment, meticulous coding is critical to making sure facilities receive the reimbursement they are entitled to. That is challenging for spine because of the many variations and constant addition of new products. Blatnik advises managers to educate surgeons about what to say in their dictated operative reports so procedures can be coded correctly. The technology is so new and confus-
ing that coders can’t keep up with it on their own, she says.

**Set up a data-gathering system**

With the dizzying array of technology in spine, organizations need data systems to monitor what implants are being used and their impact on costs.

HealthEast created a spine registry using Spinal Metrics software from Mendenhall Associates, Ann Arbor, Mich (www.orthopedicnetworknews.com). Every spine case since 1999 has been entered into the registry, which classifies implants using generic codes for rods, plates, screws, cages, and so forth. The generic codes allow usage and costs for spinal constructs to be compared.

HealthEast is interfacing Spinal Metrics with its perioperative information system. When that is complete, as implants are used in the OR, nurses will document them in the patient record, and that information will automatically transfer into the registry. From the registry, leaders can analyze data and generate reports.

“For each of our inpatients, we can get a complete picture of how much we spent on implants, the patient’s total bill, what DRGs and ICD-9 codes were assigned, whether there were complications or comorbidities, and where patients were discharged to,” Blatnik says. “We can run reports by hospital, surgeon, or for the system.”

For example, the reports can show how many spinal levels were operated on and what percentage of cases used BMP and bone grafts.

The reports help in managing budgets and in negotiating with payers. “Insurers will win hands down if you can’t document what you are doing,” Killeen comments. “If you can demonstrate you have excellent outcomes to match the higher costs, you’re more likely to be able to justify requests for payment.”

**Look over the horizon**

Spine surgery promises to change dramatically in the next 5 years. Eventually, experts expect nonfusion technologies will provide alternatives to spinal fusion. In the future, the standard fusion technology may only be used for severe degenerative disc disease, Blatnik says (related article, p 10).

But new technology isn’t likely to mean lower prices, as indications for treatment expand, and companies need to recoup their investments from acquisitions.

Also on the horizon—more outpatient surgery. Many hospitals already have seen profitable discectomies move to ambulatory centers, Blatnik says.

“The next cases you will see move will be cervical fusions,” she predicts.

Other minimally invasive options are coming, including microsurgical and microendoscopic procedures for herniated discs, lumbar spinal stenosis, and decompressions as well as minimally invasive procedures for spinal fusion. 

—Pat Patterson
—Judith M. Mathias, RN, MA

**References**


Strategies for managing spinal implant costs

These are strategies organizations are using to engage physicians and manage spinal implants:

Establish a leadership team

The leadership team sets direction for the spine program. Typical members include spine surgeons, service line leaders, administrators, and directors of surgical services and materials management.

To recognize physicians’ contributions, HealthEast in St Paul, Minn, pays them an hourly rate at fair-market value for time they spend on hospital projects. Fair-market value is established by an independent compensation expert.

At Valley Hospital Medical Center in Las Vegas, which performs 1,700 spine cases a year, the spine committee includes all of the spine surgeons. The cochairs are from competing groups, which helps ensure no one group dominates the meetings, says Carol Whitesides, APN, MS, CNOR, director of surgical services.

The committee reviews requests for new technology—and has been willing to take action. In one case, a surgeon was told he would not be able to schedule his cases if he continued to use a product the committee deemed too costly.

Use value analysis

HealthEast has a value-analysis committee dedicated to orthopedics and spinal surgery. The committee meets monthly and is a forum for new products. Physicians must submit a request form to the committee signed by the physician and the director of surgery. If a product arrives in the OR that has not been through value analysis, HealthEast doesn’t pay for it.

If the value-analysis committee cannot reach a decision, the request is referred to the next level, the co-management team for spine.

“Our value-analysis system doesn’t work 100% of the time, but it does work 85% to 90% of the time,” says Julie Blatnick, RN, BSN, CNOR, HealthEast’s program director for spine.

The value-analysis committee recently turned down a new orthobiologic product to be used in place of cement in vertebroplasty and kyphoplasty. Because 90% of these procedures are performed on patients over 80 years old with compression fractures, the committee decided the new product wasn’t justified.

Meet with spine physicians regularly

Each quarter, Blatnik and HealthEast’s director of purchasing meet with each spine surgeon to discuss the surgeon’s data for the period.

HealthEast has a spine registry that captures per-case data on surgical volumes, implant usage, DRG assignment, length of stay, and other issues.

“We give them an individual report so they can see where their dollars are being spent. We also share blinded data about their colleagues so they can see how they compare,” she says. Blatnik also takes the opportunity to talk with the surgeons about what is going right and any difficulties they may be having with scheduling cases, the nursing staff, or equipment. She then communicates those concerns to the nurse managers.

Eliminate loaner, shipping fees

HealthEast has said no to loaner, shipping, and freight fees for orthopedic implants, including spine.

That makes sense because most of the products are on consignment, Blatnik says. “We communicated this policy to the physicians because we knew the vendors would be telling them about it,” she adds.

Set up a prime-vendor program

HealthEast is striving to better manage bone morphogenic protein (BMP), on which it spent over $500,000 in fiscal 2004, and other orthobiologics.
The spine leadership team identified 3 prime vendors for orthobiologics, with the surgeons’ input. Three vendors were selected rather than 1 or 2, because with so many new products in the pipeline, HealthEast wanted to give the surgeons flexibility.

“We’re aiming not for 100% compliance but for 80%,” Blatnik says. “We have said the physicians can still use the smaller vendors, but only 15% of the time.”

To monitor compliance, Blatnik discusses orthobiologics with each surgeon quarterly when she meets with them, noting how much the surgeon used and how much was from the prime vendors. She asks for help in shifting more business to the prime vendors. There’s been steady progress. She believes one-on-one attention to the physicians makes a difference.

Valley Hospital Medical Center also has prime vendors for spine.

“We listed all of the orthobiologics and asked the surgeons to pick the top 3 vendors,” says Whitesides. The committee narrowed the list to 2 that met standards of the American Association of Tissue Banks and other criteria, then negotiated a discount of 30% to 35%.

**Establish a minimum discount policy**

After the prime vendor program was underway, HealthEast’s spine leadership team went to the other vendors and told them it would no longer pay list price.

“Now nothing is less than a 20% discount,” Blatnik says. “By doing this, we are working with the physicians and still allowing them to use the latest technology.”

**Align with physicians financially**

HealthEast is looking for other ways to align with physicians. One option is gain-sharing, a structured program to share cost savings directly with physicians. Regulatory requirements for gainsharing are stringent. Only 7 projects, all in cardiovascular care, have passed muster with the US Health and Human Services Office of Inspector General (OIG), all by one company, Goodroe and Associates, recently acquired by VHA Inc. HealthEast estimates a gainsharing consultation would cost $250,000 and take a minimum of 18 months for OIG review.

As an alternative, it is considering a “physician reinvestment program,” in which cost savings from collaborative projects would be channeled, not to individual physicians, but to a service, which could use the proceeds for additional staffing, capital equipment, education, or research.