Spinal surgery is a fast-growing specialty that presents enormous challenges for the surgical staff, managers, and educators—as a New Jersey hospital found out.

The arrival of a new orthopedic surgeon at Underwood-Memorial Hospital, a 305-bed community hospital in Woodbury, N J, started the ball rolling for an advanced spinal surgery program. The OR was soon facing extended OR times, huge capital and supply expenses, major staff training needs, and reimbursement issues.

Lessons learned and essential elements for starting new spinal surgical services were the subject of a poster presentation at the Association of peri-Operative Registered Nurses (AORN) Congress in March in San Diego. Underwood’s managers shared the lessons learned in an interview with OR Manager.

**Embarking on spinal surgery**

The more planning the management team can do up front, the more smoothly the launch of these new procedures will go.

“When we embarked on spinal surgery in 2003, we didn’t know the complete operating room support that would be needed,” says Lisa Pilla, RN, MSN, CNOR, Underwood’s perioperative clinical specialist for the 8-OR department.

She advises forming a team up front with key hospital executives, nurses, the materials manager, and medical leadership to address the operational and financial requirements for a successful spinal surgical program. “It demands a collaborative approach,” she says. Among issues to be addressed are:

- OR scheduling
- capital equipment
- staffing needs
- implant and instrument management
- clinical education
- planning for adjunct services
- reimbursement.

Spinal cases are equipment and personnel intensive, which requires a great deal of education. Though the OR staff had performed laminectomies, they had not performed instrumented spinal cases. They did not anticipate all of the implantables and other technologies that had to be added.

“We learned things along the way,” says Lucinda Quint, RN, BA, CNOR, coordinator of patient care services for the operating room. “If ORs deal with these issues up front, things will go so much smoother.”

Among issues they suggest addressing:

**OR scheduling**

Underwood now has 2 spinal surgeons, and their block times fall on the same day because of a lack of other available time.

If possible, Pilla advises avoiding scheduling blocks for more than one spinal surgeon on the same day so there is no conflict in equipment, instrumentation, and personnel.

**Get ready for sticker shock**

Prepare administrators for sticker shock and possible budget overruns, particularly for spinal implants.

“Because of the costs of spine technology, managers must make sure it doesn’t destroy their budgets. This is something that has to be presented to senior management before you get going,” Pilla says.
Underwood purchased a great deal of new instrumentation plus a Jackson OR table for spinal procedures. Expenses add up quickly. As of May, the OR had already spent 80% of this year’s implant budget. Senior management will have to make strategic decisions about case volume and technology purchases. Capital equipment expenditures can easily reach 6 figures, depending on the hospital’s needs.

**Select a single vendor**

Getting spinal surgeons to agree on a single vendor for spinal implants and instrumentation is the Holy Grail for managing spinal surgery costs—highly desirable but elusive.

“Having one vendor makes it easier to negotiate contracts,” says Quint. Having a single vendor is also easier and more efficient for staff education because it is easier for the staff to learn and manage one system. Underwood’s surgeons use equipment and implants from multiple vendors.

**Staffing needs**

**Plan for longer cases**

Because Underwood is a community hospital, the OR staff was accustomed to cases lasting 1 to 2 hours. In the beginning, the spinal cases lasted 6 to 10 hours, though the time has since come down to 3 to 4 hours.

Underwood’s OR is staffed from 7 am to 8:30 pm. Nights after 8:30 pm are covered by call.

“We didn’t change any of our staffing times or numbers,” says Quint. “Our surgeons got faster quickly, and some staff were interested in working additional time.”

The schedule was adjusted so the new spinal surgeon would start at 7:30 am, minimizing the number of cases running into the evening. Spine cases are staffed with a circulating nurse and surgical technologist, and the surgeons employ their own physician assistants.

**Prepare a specialty team**

Pilla recommends having exclusive spinal surgery teams if there are enough cases because she believes it is more effective for all involved. A specialized team can become familiar with the surgeons’ preferences as well as the instruments, implants, and supplies.

Underwood has trained 2 teams of nurses to scrub and circulate on spinal cases. That is an exception to the current policy, which is that all nurses learn to scrub and circulate for all cases performed.

Though specialization makes the cases go smoothly, it poses a problem for vacations. This summer, more nurses are participating in spinal surgery to allow specialized staff to take time off.

The number of spinal cases isn’t high enough yet to support an exclusive team. The OR performed 246 spinal cases from January 2002 to April 2004.

**Implant and instrument management**

**Plan for handling of implants**

Involving materials management staff early in planning is essential, Pilla says. At Underwood, the OR-materials management liaison is a former surgical technologist who is knowledgeable about the technology. Arrange for storage and handling for spinal cages, bone grafts, bone morphogenic protein, demineralized bone matrix, putties, gels, and screws, she advises. Underwood relied on recommended practices from AORN and the American Association of Tissue Banks (www.aatb.org).

**Organize instrument trays**

With 10 instrument trays needed, this was a formidable task. Quint spent a great deal of time making sure the sets had all of the instruments the surgeon wanted, but he was still distressed during the first case. To make this process go smoothly, she suggests:
• having the surgeon review every instrument and piece of equipment he or she will need during the first case
• holding a dress rehearsal before the first spinal case.

“Set up all of the instruments and pretend you are getting everything ready for a case,” Pilla suggests. “The extra cost and time for opening and resterilizing instruments after this practice will be surpassed by the knowledge gained from the dry run.”

**Anticipate sterile reprocessing issues**

Many pieces of spinal surgery equipment came in from the outside, and some are heavy. Because of their weight, some sets had to be broken into smaller sets. Some trays were so large and heavy they didn’t dry properly. Proper planning can help avoid some of these issues.

**Clinical education**

Education requirements are enormous, Pilla says. Plan for education in the following areas:

**Instrumentation**

Provide education on instrumentation, such as how instruments will be obtained and packaged for sterilization and setup. Though the surgeon gave an in-service about the new procedures he would perform, that didn’t cover how to set up the 10 new instrument trays.

Pilla advises having representatives from the instrument companies teach about instrument preparation and use.

The OR held a “spinal education fair” for a week. Reps were stationed in the OR’s center core every day, where the staff could handle the equipment and ask questions. The dress rehearsal also helped with education.

**Neurological monitoring**

Education also is needed for neuromonitoring, which is used intraoperatively to provide information about nerve function. The staff need to understand the role of neuromonitoring and how to plan for it.

**Adjunct services**

Include planning for adjunct services, which should be addressed up front by the multidisciplinary team. Among services used are:

• Neuromonitoring. This is a contracted service. Neuromonitoring must be coordinated with the anesthesia provider. Often, the surgeon and neuromonitoring personnel do not want muscle relaxants given because they interfere with the neuromonitoring. This might require total IV anesthesia, which can be more costly.
• A vascular surgeon to provide access in anterior spinal cases.
• Radiology services including a C-arm and radiologic technician.
• Infection control support to evaluate patients for skin breakdown and potential for infection.

**Reimbursement**

Spinal surgery is expensive, and careful planning is needed to ensure the hospital doesn’t lose a significant amount of money. Accurate documentation, coding, and billing are imperative. (Suggestions for correct coding are on page 15.)

**Negotiate with payers on implants**

The most critical aspect of reimbursement for spinal surgery is being paid for the implants. Underwood was able to negotiate with its payers to cover implant costs plus a per-diem amount for each inpatient day.

“We suggest the financial department negotiate a ‘carve-out’ with payers for reimbursement of spinal implants,” Quint says. This is an agreement to reimburse an additional amount for the cost of implants.

Under the hospital’s carve-out agreements, “We must send the payers a copy of the invoice with the exact cost of the implant, and they will reimburse us not a penny more and not a penny less,” she says.
These agreements have allowed Underwood to be reimbursed for most of its spinal procedure costs. Managers in other parts of the country say they have not been successful in getting carve-outs. Hospitals may decide to continue performing these procedures, however, because the surgeons perform other procedures that provide better reimbursement.

**Monitor costs and reimbursement**

Underwood’s administrators created a spreadsheet to track spinal cases and costs. The spreadsheet lists the surgeon, procedure, OR hardware used, any additional OR personnel used, OR time and charge, hospital length of stay, payer, total charges, DRG, and actual reimbursement. Currently, the spreadsheet is maintained manually, but Underwood is exploring the options of using its current software.

“The spreadsheet allows me to see how much we have spent for spinal technology and gives us an opportunity to take a detailed look at our operations,” says Quint.

The spreadsheet shows the DRGs used for filing claims, which helps ensure the procedures are coded correctly.

With the spreadsheet, “I can see how well the surgeons are doing on their times and how much they have improved. I can also see areas in need of improvement,” notes Quint.

—Judith M. Mathias, RN, MA