One factor behind rising orthopedic implant costs is the shift to more elaborate and expensive implants. In 2004, high-demand hip implant systems made up 60% of the constructs used for total hip replacement, up from 39% in 1999. In contrast, hybrid systems accounted for 20%, down from 55% in 1999. So-called high-demand hip systems have a coated stem and coated acetabular cup, while hybrid systems have an uncoated hip stem and coated acetabular component.

If you count the newer ceramic-on-ceramic and metal-on-metal implants in the high-demand category, 79% of implants in 2004 were high demand. Overall, the average hip and knee implant cost rose 8% to $4,981 between 2003 and 2004, according to a survey of 42 hospitals by Orthopedic Network News (ONN). Total hip costs increased 8% to $6,167, and total knees increased 8% to $4,764.

These hospitals, designated as the Orthopedic Research Network (ORN), are monitored year to year for their implant selection and costs. The costs include the metals, plastics, bone cement, bone graft substitutes, and other instruments and devices sold by orthopedic implant vendors.

In addition to the mix of implants, other factors contributing to cost increases are steady increases in manufacturers’ prices and the fact that, until 2004, discounts offered to hospitals have not been enough to offset the increased costs.

The newer metal-on-metal and ceramic-on-ceramic systems accounted for 19% of the hip systems in 2004. The 2005 list price of Stryker’s ceramic-on-ceramic hip system with a Secur-Fit stem, ceramic head, and Trident shell and liner, at $11,000, is well over the average Medicare DRG 209 payment of $10,109 in FY 2005.

**Other total hip findings**

Among the other findings for total hips:

- 19% of the femoral heads are large, over 32 mm in diameter. These are designed to decrease dislocation but have a higher cost.
- Ceramic heads increased to 15% of femoral heads sold in 2004, up from 6% in 2003. The average ceramic femoral head cost $1,287 in 2004; the average metal head cost $543.
- The average coated femoral stem cost $3,100, up 8% from 2003, while the average uncoated femoral stem cost $1,568, up 12% from 2003.
- Cross-linked polyethylene liners accounted for 62% of acetabular liners; metal/ceramic liners accounted for 13% of the liners in total hips.
- Conventional polyethylene accounted for 24% of liners sold to hospitals. In 1999, cross-linked polyethylene accounted for less than 10% of liners sold.

**Total knees**

Almost twice as many knees as hips were replaced, both nationally and within the ORN. In 2004, in ORN, there were 7,111 primary knees and 3,441 total hips.

The types of prostheses used in knees have not changed as dramatically as those used in total hips. In all, 78% of total knees in the ORN used uncoated femurs and uncoated tibias that were cemented in place. The average price of these systems was $4,657, up 7% between 2003 and 2004.
Unicondylar knees accounted for 5% of knee replacements in 2004, down from 6% in 2003.
Hybrid (coated femur or coated tibia) or fully coated knee systems accounted for 16% of knee systems in 2004.

**New DRGs for joints**
For FY 2006, the Centers for Medicare and Medicaid Services (CMS) has split DRG 209 into 2 DRGs:

- DRG 544 for primary hips and knees, with a payment of $10,120
- DRG 545 for revision hips and knees, with a payment of $12,791.

The change was made at the recommendation of the American Academy of Orthopaedic Surgeons. In the past, the primary and total hips were lumped together in DRG 209.

With this change, primary hip and knee replacements will see an increase of $11, or 0.1%, up from $10,109 in FY 2005. Revision hips and knees will see an increase of 26.5%.

To bolster Medicare’s ability to monitor the types of revisions being performed, CMS introduced a number of new ICD-9-CM codes to differentiate the types of bearing surfaces for total hips and the types of components being replaced for hip and knee revisions. This means coders will need to be more cognizant of the materials being used for implants and how these are reflected in the ICD-9-CM codes.

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