

Orthopedic Network News

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A quarterly publication and on-line information service on cost & quality issues in orthopedics

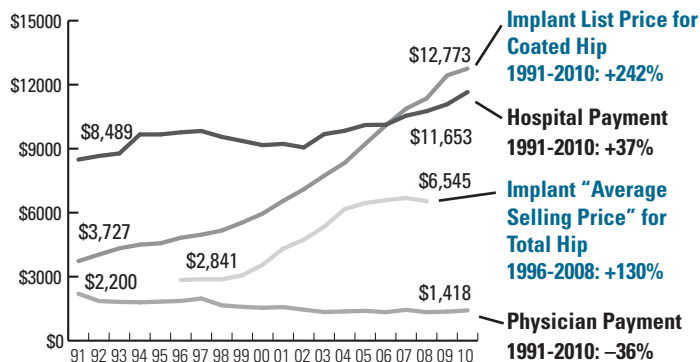
Hip and Knee Implant List Prices Rise 5.6%

Manufacturer list prices for hip and knee implants increased 5.6% between 2009 and 2010 according to a survey of eight manufacturers performed by *Orthopedic Network News*. Two years ago, the increase was 6.3%, and last year the increase was also 5.6%. It is the smallest increase since 1997-1998 in which list prices only rose 4.3%. There are many possible interpretations of this slowdown in price increases: fewer new products or innovations from the orthopedic manufacturers, their greater sensitivity to the economic realities faced by hospitals, or hospitals' greater willingness to challenge price increases.

The overall economics of the major players—hospitals, manufacturers, and physicians—is displayed below: the list price of a coated total hip system has increased 242% between 1991 and 2010 (from \$3,727 to \$12,773), the average selling price of a total hip has increased 130% between 1996 and 2008 (from \$2,841 to \$6,545), the average hospital payment for a total hip case from Medicare has increased 37% between 1991 and 2010 (from \$8,489 to \$11,653), and the physician payment from Medicare for a total hip has decreased 36%, from \$2,200 to \$1,418 in 2010.

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Trends in Implant Price, Physician and Hospital Medicare Payment















Sources:
Hospital payment: DRG 209, 544, and 470 payment from Medicare for FY 1992-2010 as reported in *Orthopedic Network News (ONN)*, October 1991-2009.
Implant list prices: Coated hip system price as reported in *ONN*, January 1992-2010
Implant selling price: Average hip implant price for 1996-2007 as reported in *ONN*, July 1997-2009
Physician payment for total hip (CPT 27130) from Medicare as reported in *ONN*, January 1992-2010

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Change in Hip and Knee Implant List Prices, 2009-2010¹

	2009	2010	Average Change 09-10 ²
Total Hip Implants			
 Femoral Resurfacing	\$11,645	\$12,130	4.2%
 Metal-on-Metal	\$14,268	\$15,256	6.9%
 Ceramic-on-Ceramic	\$13,973	\$14,754	5.6%
 Coated Femur/ Poly Liner	\$12,207	\$12,773	4.6%
 Uncoated Femur/ Poly Liner	\$9,422	\$9,972	5.8%
Partial Hip Implants			
 Bipolar Hip	\$5,402	\$5,688	5.3%
 Modular Endoprosthesis	\$3,304	\$3,480	5.3%
Knee Implants			
 Coated Knee	\$12,786	\$13,446	5.2%
 Uncoated Knee	\$10,331	\$10,890	5.4%
 Hybrid Knee	\$11,161	\$11,727	5.1%
 Knee with All-Poly Tib	\$6,484	\$6,879	6.1%
 Unicondylar Knee	\$5,825	\$6,240	7.1%
Overall			5.6%

¹ Based on the list prices for selected components between the two years for 8 manufacturers.

² The average change represents the percentage increase in the price of the components selected from eight manufacturers. Note that the 2009 prices listed here will differ from those in the January 2009 newsletter because the constructs used are different this year than last.

Summary of Implant Prices and Price Increases, 2009-2010, by Manufacturer and Implant Type

Manufacturer	Total Hips/Resurfacing					Partial Hips		Knees					Price Increases	
	Total Resurfacing	Metal-on-Metal	Ceramic-Ceramic	Coated Hip/Poly Liner	Uncoated Hip/Poly Liner	Bipolar Hip	Modular/Endoprosthesis	Coated Knee	Uncoated Knee	Hybrid Knee	Femur w/all poly tibia	Unicondylar	Average Increase 2009-2010	Average Increase 2008-2009
Zimmer	\$13,270	\$14,050	\$14,800	\$12,250	\$10,290	\$4,920	\$2,970	\$15,630	\$12,460	\$11,310	\$7,170	\$8,020	5.6	6.3
DePuy	*	\$14,349	\$15,945	\$13,197	\$10,271	\$4,212	\$2,747	\$14,662	\$10,650	\$12,210	\$6,962	\$5,687	5.6	5.8
Sm & Nephew	\$12,880	\$18,665	\$14,218	\$13,377	\$9,430	\$4,948	\$2,921	\$13,892	\$9,904	\$11,174	\$7,494	\$5,774	6.8	3.4
Biomet	\$11,457	\$14,115	\$15,219	\$12,300	\$9,177	\$4,928	\$3,649	\$12,130	\$10,449	\$11,419	*	\$7,789	9.5	8.4
Stryker	\$12,142	*	\$13,444	\$13,251	\$9,906	\$4,672	\$2,675	\$15,265	\$11,208	\$13,575	\$5,591	\$7,046	2.4	4.6
Wright	\$10,900	\$18,850	\$15,100	\$13,325	\$10,900	\$9,700	\$5,200	\$11,830	\$10,675	\$12,035	\$6,980	\$5,285	4.8	3.3
Exactech	*	*	*	\$13,175	\$10,600	\$7,700	\$5,200	\$11,660	\$11,480	\$11,570	\$7,310	\$5,415	5.7	10.5
DJO Surgical	*	\$11,505	\$14,555	\$11,305	\$9,200	\$4,425	\$2,475	\$12,500	\$10,290	\$10,525	\$6,645	\$4,900	4.5	4.7
Average	\$12,130	\$15,256	\$14,754	\$12,773	\$9,972	\$5,688	\$3,480	\$13,446	\$10,890	\$11,727	\$6,879	\$6,240	5.6	5.6

* Do not currently market, or not surveyed.

Construct not found in ORN, taken from manufacturer price lists.

continued from page 1

Description of Current Survey

This publication has compared manufacturer list prices of hip and knee implants since 1992. List prices from eight manufacturers are included in this survey: Zimmer, DePuy, Smith & Nephew, Biomet, Stryker, Wright Medical, Exactech, and DJO Surgical. A sampling approach is necessary to estimate the price increases for several reasons: (1) each manufacturer sells literally tens of thousands of parts, and many combinations of parts can be put together to create a construct, (2) manufacturers often employ pricing strategies that increase the price of one product line or size more than others, confounding attempts to estimate price changes. The cases from about 150 hospitals that participate in www.ImplantData.com are assigned the construct classifications reported here, and the most frequent parts for each construct for each manufacturer are used for price comparisons. If a particular manufacturer’s construct isn’t used by the hospitals, this is noted in the footnotes to the tables. Because we are following the most frequent components used, it is possible that the specific parts in a manufacturer’s construct will change from one year to the next.

The major difference in construct classification this year compared to last is the addition of the uncoated knee with an all-poly tibia. This category was reported several years ago, but dropped because of lack of usage by hospitals, however, it has experienced a recent resurgence both because of its attractive economics, and because of favorable clinical outcomes that have been reported.

This survey, similar to last year’s, is specifically for implanted hip and knee components. However, the changes in instrumentation, navigation, software, and surgical technique have been more dramatic than the implants. For example, there is no sur-

vey of the usage of customized cutting blocks for knee implants, a product offered by Otismed, and now subsequently by other manufacturers. These blocks cost an estimated \$1,500 each, and can abruptly change the economics of cap pricing and contracts with manufacturers.

Survey Results

The overall list price increases for hip and knee replacements between 2009-2010 were 5.6% for all eight manufacturers. Biomet had the highest price increase of 9.5% and Stryker had the lowest at 2.4%. Between 2008 and 2009, Exactech had the highest price increase (10.5%) and Wright Medical had the lowest at 3.3%.

Of the different categories of hips, the most expensive was the metal-on-metal systems with an average price of \$15,256, followed by ceramic-on-ceramic at \$14,754, coated hip stem with a poly liner (\$12,773), total resurfacing (\$12,130), and an uncoated hip stem with a poly liner at \$9,972. It should be noted that individual hospital discounts, and selection of different adjunct components could result in different prices for an individual hospital.

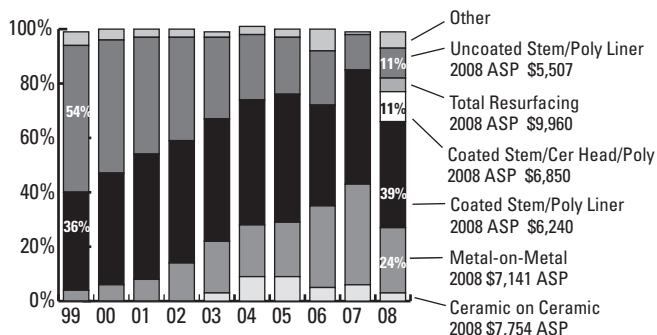
Bipolar hips with an uncoated hip stem averaged \$5,688 from the surveyed manufacturers, and the modular endoprosthesis averaged \$3,480 for partial hips, generally provided to patients with hip fractures.

The categories of knee implants surveyed include coated, uncoated, hybrid, knees with all poly tibias (APT) and unicondylar knees. These averaged \$13,446, \$10,890, \$11,727, \$6,879, and \$6,240 respectively. The categories of “flex” and “Gender specific” are not differentiated in these groups nor are materials such as Zimmer’s trabecular metal or Smith & Nephew’s

oxinium. In addition, allowances are not made for cross-linked polyethylenes provided by most manufacturers for acetabular liners, since these materials have generally displaced their non-crosslinked counterparts for most companies.

Total Hips

% of Cases by Construct Type, 1999-2008



Source: Orthopedic Network News, July 2009, page 13
ASP: Average Selling Price

According to the 2008 ORN, the distribution of total hip systems in 2008 was skewed to premium hip implants, which include resurfacing hips, coated stems with either ceramic or metal heads, ceramic on ceramic (or ceramic on metal), and metal on metal hip systems. These categories accounted for 83% of all total hip systems reported in the 2008 ORN. (Note that a total resurfacing hip, although classified and reported differently, is included in the total hip systems here. Note also that the July breakdown of systems reported coated stems with ceramic heads separately from coated stems with metal heads. Price comparisons of coated stems with ceramic heads are not provided in this newsletter.)

The highest average selling price in the 2008 ORN was for a total resurfacing system at \$9,960, followed by ceramic-on-ceramic hip at \$7,754, metal-on-metal at \$7,141, coated femur with a ceramic head at \$6,850, coated femur with a metal head at \$6,240, and uncoated femur with poly liner at \$5,507.

Total femoral resurfacing systems have caught the attention of much of the orthopedic community and patients because of its “minimal” amount of bone loss compared to traditional joint replacements. However, because of isolated reports of adverse outcomes, many hospitals and physicians have limited their use to younger patients with high activity levels.

Of the total femoral resurfacing systems (construct 09a), the lion’s share continues to be those sold by Smith & Nephew—the Birmingham commanded over 85% in the 2009 ORN. Stryker’s entry, the Cormet, was second with 11.2%, with Zimmer, Biomet, and Wright Medical significantly less. The price of the total resurfacing systems averaged \$12,130 in 2010 with a range from \$10,900 for Wright Medical to \$13,270 for Zimmer’s Durom.

	% Price Increases, 2009-2010, by Manufacturer, Implant Type												
	Total Hips					Partial Hips			Knees				
	Total Resurf 09a	MOM 01 & 01a	COC 01b	Coat/Poly 03	Uncoat/Poly 05	Bipolar 07a	Mod Endo 08	Coated 23	Uncoated 24	Hybrid 25	Knee w/APT 26a	Ulni 26	Avg 09-10
Zimmer	5.0	5.9	11.5	4.3	4.1	6.1	4.8	5.0	5.1	5.2	5.3	8.2	4.8
DePuy	*	4.2	4.3	4.7	4.8	3.7	4.4	8.4	5.2	6.3	5.0	10.0	5.6
S&N	3.0	17.0	8.2	5.5	4.9	3.8	2.4	5.6	7.9	7.9	7.9	7.9	6.8
Biomet	9.6	4.0	8.0	9.3	10.9	14.2	24.1	6.4	6.5	6.6	*	5.0	9.5
Stryker	0.0	*	2.0	2.0	2.9	3.5	4.0	0.6	2.0	1.0	4.0	4.0	2.4
Wright	3.8	5.9	5.2	5.5	6.9	5.4	4.0	4.0	4.7	4.6	3.9	4.0	4.8
Exactech	*	*	*	3.9	11.0	5.1	1.0	7.0	5.9	6.0	6.1	5.6	5.7
DJO Surgical*	2.3	0.5	2.1	1.7	0.6	1.0	5.2	6.5	4.1	10.4	15.0	4.5	
Average	4.2	6.9	5.6	4.6	5.8	5.3	5.3	5.2	5.4	5.1	6.1	7.1	5.6

* Do not currently market, or not surveyed

** Stryker’s 2010 price list didn’t include the Triathlon PKR

■ Highest in Group
■ Lowest in Group

Source: Manufacturer published price lists, 2009-2010.

Keys: Each of the headings (e.g. Total Resurf 09a) has a narrative description and an Orthopedic Network News construct identifier. The constructs are defined based combination of the GIC codes that parts are assigned to. For specific definitions of these constructs, see page 8.

Case Share of Total Hip Implant Assemblies, 2009 ORN

Mfg	Total Resurfacing (09a) *	Metal-on-Metal (01 & 01a) *	Ceramic-on-Ceramic (01b) *	Coated Stem Poly Liner (03) *	Uncoated Stem Poly (05) *
Zimmer	0.3%	2.4%	0.7%	31.5%	24.5%
DePuy	0.0%	59.6%	60.0%	22.9%	47.1%
S&N	85.5%	5.3%	9.3%	5.9%	9.2%
Biomet	2.7%	26.9%	2.1%	15.4%	6.9%
Stryker	11.2%	0.6%	25.0%	22.0%	12.0%
Wright	0.3%	4.1%	2.1%	0.1%	0.0%
Exactech	0.0%	0.0%	0.0%	0.3%	0.0%
DJO Surgical	0.0%	1.0%	0.7%	0.6%	0.2%
Others	0.0%	0.1%	0.0%	1.2%	0.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Source: 2009 Orthopedic Research Network. Total Cases: 7,385;

* Refers to the Orthopedic Network News constructs

Change in Femoral Resurfacing List Prices (09a), 2009-2010

Mfg	Stem/Cup	2009	2010	09-10
Zimmer	Durom	\$12,635	\$13,270	5.0%
S&N	Birmingham Hip	\$12,500	\$12,880	3.0%
Biomet	Recap/M2a Magnum	\$10,450	\$11,457	9.6%
Stryker	Cormet	\$12,142	\$12,142	0.0%
Wright	Conserve	\$10,500	\$10,900	3.8%
Average		\$11,645	\$12,130	4.2%

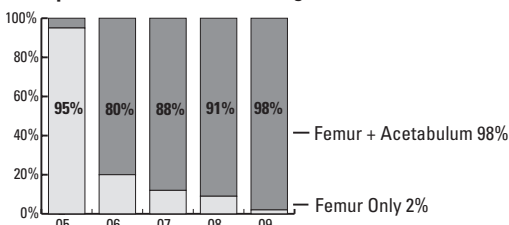


Smith & Nephew Birmingham Hip

■ Highest in Group
■ Lowest in Group

Trend in Total and Femoral Resurfacing Hip Procedures: 2005-09

Components Used in Resurfacing



Source: 2005-2009 Orthopedic Research Network. Total cases: 945

There has also been a significant trend to “total resurfacing” in which both a femur and acetabulum are replaced compared to “partial resurfacing” in which only a femur is replaced. In 2009, the ORN reported that 98% of the cases with femoral resurfacing components had total resurfacing procedures, in contrast to 2005, in which 95% of the procedures only used a femur.

Metal-on-metal systems (constructs 01 and 01a) are largely the same as total resurfacing systems except that the femoral stem is longer. DePuy and Biomet led this group in the ORN with 59.6% and 26.9% of the cases in the 2009 ORN respectively. Systems surveyed include Zimmer’s Versys beaded/Durom, DePuy’s Summit/Pinnacle, Smith & Nephew’s Anthology/Reflection 3, Biomet’s Taperloc/M2a Magnum, Wright Medical’s Profemur Z/Dynasty, and DJO Surgical’s Linear/FMP. The most expensive system was Wright Medical’s Perfecta with a list price of \$18,850, and the least expensive was DJO Surgical’s FMP with a list price of \$11,505. Overall, the metal-on-metal hips averaged \$15,256 list price, the highest of any category reviewed.

At one point, ceramic-on-ceramic hips (construct 01b) were led by Stryker’s Trident. However, since that introduction featuring golfer Jack Nicklaus, DePuy has gained share with their ceramic on metal offering, which ONN has classified in this group. DePuy led this category with 60% of the market followed by Stryker’s 25%. DePuy’s ceramic-on-metal had the highest list price at \$15,945, and Stryker’s Citation/Trident was the least expensive surveyed at \$13,444.

Coated hip stems with poly liners (ONN construct 03) accounted for 39% of total hips implanted in 2008, and had an average list price of \$12,773 in 2010, compared to an average selling price of \$6,240 in 2008. The most expensive system was Smith & Nephew’s Synergy/Reflection 3 with a list price of \$13,377, and the least expensive with the DJO Surgical Linear/FMP at \$11,305. Market leaders in 2009 were Zimmer (31.5%), DePuy (22.9%), Stryker (22.0%), and Biomet (15.4%).

The uncoated femur/poly liner construct accounted for 11% of total hips in 2008, in contrast to 54% of total hips in 1999. According to the 2009 ORN, the share leaders in this category were DePuy at 47.1% of cases, followed by Zimmer at 24.5%, and Stryker at 12%. The most expensive was the Wright Medical Perfecta/Lineage at \$10,900 and the least expensive system was Biomet’s Stanmore with a Mallory-Head shell at \$9,177. It should be noted that there are significant differences between high and low prices from the manufacturers given the variety of options that are available. The average uncoated femur/poly liner was \$9,972 in 2010.

Change in MOM Hip (01, 01a) Implant List Prices 2009-10

Mfg	Stem/Shell	2009	2010	09-10
Zimmer	Versys beaded/Durom	\$13,267	\$14,050	5.9%
DePuy	Summit/Pinnacle/Ultamet	\$13,770	\$14,349	4.2%
S&N	Anthology/Reflection 3	\$15,950	\$18,665	17.0%
Biomet	Taperloc/M2a Magnum	\$13,570	\$14,115	4.0%
Wright	Profemur Z/Dynasty	\$17,800	\$18,850	5.9%
DJO Surg	Linear/FMP	\$11,250	\$11,505	2.3%
Average		\$14,268	\$15,256	6.9%



Change in Ceramic on Ceramic Hip (01b) Implant List Prices 2009-10*

Mfg	Stem/Cup	2009	2010	09-10
Zimmer	Versys/Trilogy AB	\$13,275	\$14,800	11.5%
DePuy	Summit/Biolox/Pinnacle *	\$15,290	\$15,945	4.3%
S&N	Synergy/Reflection 3	\$13,140	\$14,218	8.2%
Biomet	TaperLoc Microplasty/C2A	\$14,092	\$15,219	8.0%
Stryker	Citation/Trident	\$13,181	\$13,444	2.0%
Wright	Perfecta/Lineage	\$14,350	\$15,100	5.2%
DJO Surgical	R120/Keramos	\$14,480	\$14,555	0.5%
Average		\$13,973	\$14,754	5.6%



* Ceramic Head and Metal Liner—Ceramic on Metal Construct

■ Highest in Group
□ Lowest in Group

Change in Coated Stem/Poly Liner Hip (03) Implant List Prices 2009-10*

Mfg	Stem/Cup	2009	2010	09-10
Zimmer	M/L Taper/Trilogy	\$11,748	\$12,250	4.3%
DePuy	Summit®/Pinnacle	\$12,610	\$13,197	4.7%
S&N	Synergy/Reflection 3	\$12,685	\$13,377	5.5%
Biomet	Taperloc/Mallory-Head/E-Poly	\$11,250	\$12,300	9.3%
Stryker	Secur-Flt Max/Trident X3	\$12,990	\$13,251	2.0%
Wright	Perfecta RS/Lineage	\$12,265	\$13,325	5.5%
Exactech	Novation/AcuMatch/Connexion GXL	\$12,675	\$13,175	3.9%
DJO Surgical	Linear/FMP	\$11,305	\$11,075	2.1%
Average		\$12,207	\$12,773	4.6%



□ Indicates that there were no cases with this construct in the 2009 ORN

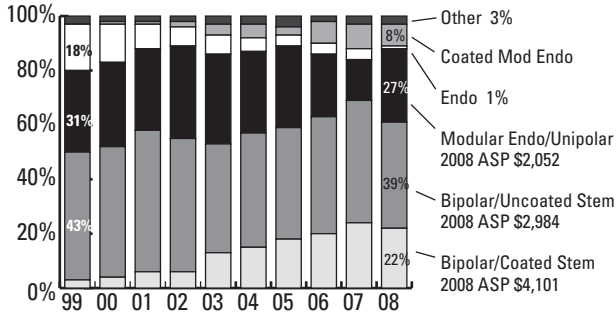
Change in Uncoated Femur/Poly Liner Hip (05) Implant List Prices 2009-10*

Mfg	Stem/Cup	2009	2010	09-10
Zimmer	Versys Advocate/Trilogy	\$9,886	\$10,290	4.1%
DePuy	Summit/Pinnacle	\$9,800	\$10,271	4.8%
S&N	Synergy/Reflection	\$8,990	\$9,430	4.9%
Biomet	Stanmore/RingLoc/E-Poly	\$8,272	\$9,177	10.9%
Stryker	Omnifit Eon/Trident X3	\$9,631	\$9,906	2.9%
Wright	Perfecta/Lineage	\$10,200	\$10,900	6.9%
Exactech	Acumatch	\$9,550	\$10,600	11.0%
DJO Surgical	R120/FMP	\$9,050	\$9,200	1.7%
Average		\$9,422	\$9,972	5.8%



Partial Hips

% of Cases by Construct Type, 1999-2008



Source: Orthopedic Network News, July 2008, page 15

Partial hips are generally implanted into patients with hip fractures, which are typically the elderly patient. Partial hip implants, following the lead of total hips, have moved towards a high-tech, more expensive line. Between 1999 and 2008, the least expensive construct, a one-piece endoprosthesis, declined from 18% of cases in 1999 to 1% in 2008; the most expensive construct, a bipolar system, increased from about 43% of cases in 1999 to 61% in 2008. Bipolar hips now include subcategories of bipolar hips with coated stems and uncoated stems. Coated stems are generally used for patients whose bone is anticipated to provide longer term fixation, and were considered “high-demand” for total hip cases in the 1990’s and were rarely used in partial hips at that time.

The market leaders in the 2009 ORN for partial hips were the large manufacturers of joint replacements, depending on the construct. The coated stem/bipolar cases were led by DePuy (35.2%), Stryker (26.7%), and Zimmer (20.9%), while the less expensive uncoated stem/bipolar cases were led by Stryker (36.9%), Zimmer (27.3%), and DePuy (23.5%). Modular endoprostheses with uncoated stems were led by DePuy with 34.9% of the cases, followed by Stryker (26.3%), and Zimmer (25%).

The bipolar hip systems with uncoated stems averaged \$5,688 in 2010, up 5.3% from 2009. Wright Medical’s construct was estimated to cost \$9,700, the highest of the group, while DePuy’s Summit/Bipolar was surveyed at \$4,212, the lowest of the group.

The modular endoprosthesis averaged \$3,480 in 2010, up 5.3% from 2009. The highest price modular endoprosthesis were the Perfecta of Wright Medical and the AcuMatch/Unipolar of Exactech. The least expensive was DJO Surgical’s Foundation at \$2,475.

Case Shares of Partial Hip Implant Assemblies, 2009 ORN

Mfg	Coated stem Bipolar (07) *	Uncoated Stem/Bipolar (07a) *	Modular Endo (08) *	Coated Stem Mod Endo (08) *	1 Piece Endo (09) *
Zimmer	20.9%	27.3%	25.0%	15.7%	6.0%
DePuy	35.2%	23.5%	34.9%	20.9%	8.0%
S&N	4.2%	9.5%	8.9%	19.4%	10.0%
Biomet	7.3%	2.4%	4.6%	28.4%	68.0%
Stryker	26.7%	36.9%	26.3%	13.7%	0.0%
Wright	0.0%	0.0%	0.0%	0.0%	0.0%
Exactech	1.5%	0.4%	0.0%	1.9%	8.0%
DJO Surgical	2.8%	0.1%	0.3%	0.0%	0.0%
Others	1.4%	0.0%	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Source: 2009 Orthopedic Research Network. Total Cases: 2,588;
* refers to the Orthopedic Network News constructs (see page 8).

Change in Bipolar Hip Implant (07a) List Prices 2009-10*

Manufacturer	Stem/Cup	2009	2010	09-10
Zimmer	Versys LD-Fx/Bipolar	\$4,635	\$4,920	6.1%
DePuy	Summit/Bipolar	\$4,060	\$4,212	3.7%
S&N	Conquest Fx/Tandem	\$4,767	\$4,948	3.8%
Biomet	Echo Fx/RingLoc	\$4,315	\$4,928	14.2%
Stryker	Omnifit Hfx/UH1	\$4,513	\$4,672	3.5%
Wright	Perfecta IMC/SLR	\$9,200	\$9,700	5.4%
Exactech	Novation/Acumatch	\$7,325	\$7,700	5.1%
DJO Surgical	Foundation	\$4,400	\$4,425	0.6%
Average		\$5,402	\$5,688	5.3%



Zimmer Versys Fx Stem, Head, and 2 Piece Bipolar

Note: These are constructs with an uncoated hip stem.

Indicates that there were no cases with this construct in the 2009 ORN.

Change in Modular Endoprostheses (08) List Prices 2009-10*

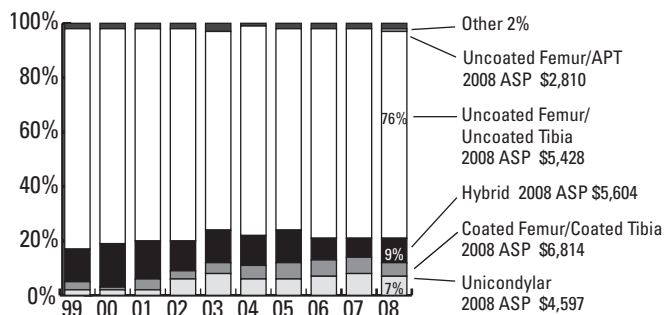
Manufacturer	Stem	2009	2010	09-10
Zimmer	Versys LD/Fx mod	\$2,834	\$2,970	4.8%
DePuy	Summit Basic/Cathcart	\$2,630	\$2,747	4.4%
S&N	Conquest fx/Tandem	\$2,852	\$2,921	2.4%
Biomet	Alliance/Bio-Moore II	\$2,940	\$3,649	24.1%
Stryker	Omnifit Hfx/Unitrax	\$2,572	\$2,675	4.0%
Wright	Perfecta/WMT	\$5,000	\$5,200	4.0%
Exactech	AcuMatch/Unipolar	\$5,150	\$5,200	1.0%
DJO Surgical	Foundation/Unipolar	\$2,450	\$2,475	1.0%
Average		\$3,304	\$3,480	5.3%



Biomet Alliance Stem, Bio-Moore II Head w/Insert

Knee Implants

% of Cases by Construct Type



Source: Orthopedic Network News, July 2008, page 17

In contrast to hips, the vast majority of knee implants are cemented with uncoated tibias and femurs, which accounted for 78% of the cases in the 2008 ORN. Less frequently used systems in 2008 were hybrid systems which use a coated femur (or tibia) with an uncoated tibia (or femur) (9%), unicondylar (7% of cases), and coated systems which use a coated femur and a coated tibia (5%).

Manufacturers have tried to differentiate the types of systems they offer, however, each offering has made it difficult to provide any reference comparison to others. For example, Zimmer is the only manufacturer with trabecular metal implants, Smith & Nephew is the only one to offer Oxinium coating on their implants, Biomet is the only one to offer a mobile bearing unicondylar knee. Many manufacturers are touting their “Gender knees.” All of these innovations are designed to provide greater flexibility, improved longevity, or a better fit. However, in the interests of comparisons, *Orthopedic Network News* differentiates assemblies based on whether or not they are designed to be cemented or not, a process which involves both time and materials at the hospital level. Thus some of the pricing differentiation that manufacturers are trying to promote will be lost in these comparisons.

The market leaders of knee implants in the 2009 ORN are displayed above. The largest category, uncoated knee systems were led in a dead heat by DePuy, Stryker, Biomet, and Zimmer, each of which had more than 20% of the market. The hybrid category was led by Smith & Nephew with 40.5% of the cases followed by Zimmer with 33.8%, and the coated systems were led by Zimmer (37.4%), Stryker (36.2%), and Smith & Nephew at 14.7%. The knee with all poly tibia was led by DePuy at 70.2% and Zimmer with 29.4%. This low-cost alternative to knee implants is getting some attention in the clinical press for its favorable outcomes. The unicondylar knee market was led by Biomet with 70.9% of the cases followed by Zimmer with 17.6%.

Case Shares of Knee Implant Assemblies, 2009 ORN

Mfg	Coated (23) *	Uncoated (24)	Hybrid (25)	Knee w/APT (26a)	Unicondylar (26)
Zimmer	37.4%	20.8%	33.8%	29.4%	17.6%
DePuy	9.1%	22.6%	14.1%	70.2%	3.1%
S&N	14.7%	10.9%	40.5%	0.4%	1.3%
Biomet	2.0%	21.5%	5.8%	0.0%	70.9%
Stryker	36.2%	21.7%	4.0%	0.0%	6.0%
Wright	0.0%	0.2%	0.4%	0.0%	0.1%
Exactech	0.0%	0.7%	0.4%	0.0%	0.0%
DJO Surgical	0.1%	0.4%	0.0%	0.0%	0.0%
Others	0.5%	1.2%	2.0%	0.0%	1.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Source: 2009 Orthopedic Research Network. Total Cases: 21,704; * refers to the Orthopedic Network News constructs (see page 8).

Change in Coated Knee Implant List Prices 2009-10 *

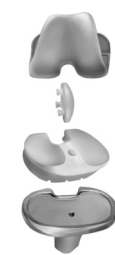
Mfg	Femur/Tibia	2009	2010	09-10
Zimmer	NK GSF Flex/Prolong	\$14,880	\$15,630	5.0%
DePuy	PFC Sigma/MBT	\$13,520	\$14,662	8.4%
Sm-Nephew	Legion Oxinium/PS Insert	\$13,152	\$13,892	5.6%
Biomet	Vanguard CR/Maxim	\$11,399	\$12,130	6.4%
Stryker	Triathlon CR beaded/X3	\$15,177	\$15,265	0.6%
Wright	Advance Porous	\$11,376	\$11,830	4.0%
Exactech	Opttrak Coated	\$10,895	\$11,660	7.0%
DJO Surgical	3D Knee Coated	\$11,885	\$12,500	5.2%
Average		\$12,786	\$13,446	5.2%



Zimmer Natural Knee Femur, Prolong Tibia

Change in Uncoated Knee Implant List Prices 2009-10*

Mfg	Femur/Tibia	2009	2010	09-10
Zimmer	NexGen Flex GSF/Precoat Tib	\$11,850	\$12,460	5.1%
DePuy	PFC Sigma CR	\$10,120	\$10,650	5.2%
S&N	Genesis II/Hi-flex Insert	\$9,180	\$9,904	7.9%
Biomet	Vanguard CR/Maxim	\$9,810	\$10,449	6.5%
Stryker	Triathlon CR/X3	\$10,989	\$11,208	2.0%
Wright	Advance	\$10,197	\$10,675	4.7%
Exactech	Opttrak Hi-Flex Femur	\$10,840	\$11,480	5.9%
DJO Surgical	3D Knee Femur/Tibia	\$9,665	\$10,290	6.5%
Average		\$10,331	\$10,890	5.4%



DJO Surgical 3D Knee Femur, Tibia

Change in Hybrid Knee Implant List Prices 2009-10*

Mfg	Femur/Tibia	2009	2010	09-10
Zimmer	NexGen/Precoat Tib	\$10,775	\$11,310	5.2%
DePuy	PFC Sigma CR	\$11,490	\$12,210	6.3%
Sm & Nephew	Genesis II PS Oxinium	\$10,357	\$11,174	7.9%
Biomet	Vanguard CR/Maxim	\$10,716	\$11,419	6.6%
Stryker	Triathlon CR Beaded/X3	\$13,440	\$13,575	1.0%
Wright	Advance Porous Femur	\$11,505	\$12,035	4.6%
Exactech	Opttrak Porous	\$10,920	\$11,570	6.0%
DJO Surgical	Foundation/3D	\$10,107	\$10,525	4.1%
Average		\$11,161	\$11,727	5.1%



S&N Genesis II CR Femur, Base-plate, Dished Insert, Patella

Among the categories surveyed are knees with a coated femur and coated tibia, which averaged \$13,446 in 2010, with a range of \$11,660 for Exactech's Optetrak to \$15,630 for Zimmer's Natural Knee GSF Flex with a Prolong insert. The larger group of uncoated knee systems averaged \$10,890 in 2010, up 5.4% from 2009, and ranged from \$9,904 for a Smith & Nephew Genesis II with a Hi-flex insert, to Zimmer's NexGen Flex GSF at \$12,460. The hybrid category averaged \$11,727 in 2010, up 5.1% over 2009. Prices ranged from DJO Surgical's Foundation at \$10,525 to Stryker's Triathlon CR beaded femur with an X3 insert at \$13,575. The knees with all poly tibias (APT) averaged \$6,879, up 6.1% and ranged from Stryker's Scorpio CR at \$5,591 to Smith & Nephew's Genesis II CR at \$7,494.

Unicondylar knees have been touted as "minimally invasive" to many patients and have grown to account for about 7% of the ORN knee market in 2008. In the ONN 2010 survey, the overall average list price for the unicondylar knees was \$6,240 up 7.1% over 2009. The most expensive unicondylar knee implant was Zimmer's High-Flex at \$8,020, followed by Biomet's Oxford unicondylar knee at \$7,789. The least expensive was listed as the DJO Surgical Epik at \$4,900. ■

Change in Knee with All Poly Tibia (26a) List Prices 2009-10*

Mfg	Femur/Tibia	2009	2010	09-10
Zimmer	NexGen LPS/LPS APT	\$6,811	\$7,170	5.3%
DePuy	PFC Sigma CR/APT	\$6,630	\$6,962	5.0%
S&N	Genesis II CR/APT	\$6,947	\$7,494	7.9%
Stryker	Scorpio CR/APT	\$5,376	\$5,591	4.0%
Wright	Advance NP/Poly PS Tib	\$6,715	\$6,980	3.9%
Exactech	Optetrak CR/APT CR	\$6,890	\$7,310	6.1%
DJO Surgical	Foundation/APT	\$6,021	\$6,645	10.4%
Average		\$6,484	\$6,879	6.1%



Change in Unicondylar Knee Implant (26) List Prices 2009-10

Mfg	Femur/Tibia	2009	2010	09-10
Zimmer	Zimmer High Flex	\$7,412	\$8,020	8.2%
DePuy	Preservation	\$5,170	\$5,687	10.0%
S&N	Genesis Oxinium	\$5,350	\$5,774	7.9%
Biomet	Oxford	\$7,417	\$7,789	5.0%
Stryker	Triathlon PKR	\$6,775	\$7,046	4.0%
Wright	Advance	\$5,083	\$5,285	4.0%
Exactech	Optetrak	\$5,130	\$5,415	5.6%
DJO Surgical	Epik	\$4,260	\$4,900	15.0%
Average		\$5,825	\$6,240	7.1%



Construct Definitions

The constructs below are referenced in this newsletter as "similar" groups of parts for a hip or knee replacement. The specific components selected from each manufacturer are identified based on the most frequently used components by hospitals that participated in www.ImplantData.com during 2009. The construct assignment is made based on the GIC codes assigned to specific components. (A complete list of the GIC codes is available at www.OrthopedicNetworkNews.com).

Construct ID	Description	GIC Selections			
Total Hips		Femur	Femoral Head	Shell/Cup	Liner
09a	Total Resurfacing	22		16, 17	
01	Metal-on-Metal	11-13	14	17	20
01a	Metal-on-Metal (1 pc)	11-12	14	16	
01b	Ceramic-on-Ceramic	11-13	15	17	20
03	Coated Stem/Poly Liner	11	14	not 21	18
05	Uncoated Stem/Poly Liner	12	14	not 21	18
Partial Hips		Femur	Femoral Head	Bipolar	
07a	Uncoated Bipolar Hip	12	14, 15	21	
08	Modular Endo	11-13	24	not 14-15	
Knees		Femur	Tibia	Notes	
23	Coated Knee	31	33	not 32 or 34	
24	Uncoated Knee	32	34	not 31 or 33	
25	Hybrid Knee	31	34	(or 32 and 33)	
26a	Knee with APT	32	35		
26	Unicondylar Knee	38	39	40 optional	
GICs					
11 Coated Hip Stem	18 Acetabular Liner (Poly)	33 Coated Knee Tibia			
12 Uncoated Hip Stem	20 Metal/Ceramic Acetabular Liner	34 Uncoated Knee Tibia			
13 Revision Hip Stem		35 All Poly Tibia			
14 Metal Femoral Head	21 Bipolar Component	38 Unicondylar Knee Femur			
15 Ceramic Femoral Head	24 Modular Endo Head	39 Unicondylar Knee Tibia			
16 1 Piece Acetabular Cup	31 Coated Knee Femur	40 Unicondylar Knee Insert			
17 Acetabular Shell	32 Uncoated Knee Femur				

How the Survey Was Conducted

Manufacturer	January 1, 2009 Prices	January 1, 2010 Prices
Zimmer	January 1, 2009	January 1, 2010
Stryker	September 1, 2008	September 1, 2009
DePuy	October 1, 2008	October 1, 2009
S&N	March 1, 2008	February 1, 2009
Biomet	September 27, 2008	August 1, 2009
Wright	January 1, 2009	January 1, 2010
Exactech	September 1, 2008	September 15, 2009
DJO Surgical	January 1, 2009	January 1, 2010

Manufacturer price lists were obtained, and the list prices effective on January 1, 2009 were compared to those effective on January 1, 2010 for a sample of components for various hip and knee implant constructs. There are approximately 300 components priced in this survey. This is the seventeenth annual survey of hip and knee implants which has been conducted by Orthopedic Network News. The manufacturers surveyed represent in excess of 90% of the market for hip and knee implants in the US. The components used in the survey were the most frequently used components for hip and knee implants for hospitals submitting data through www.ImplantData.com in 2009. There were approximately 37,000 cases from approximately 150 hospitals in this group, and are designated as the Orthopedic Research Network (ORN), 2009 edition.

The Orthopedic Research Network (ORN), July 2008 edition includes cases collected through www.ImplantData.com, Total Joint Metrics, and Spinal Metrics which include procedures and individual implant components. Since cases are added periodically from hospitals, the universe of cases reported on from one newsletter to the next may be different, and hence some of the statistics reported may not be the same as those reported in previous issues. The 2008 ORN included over 52,000 cases from about 160 hospitals, and this is the source for the average selling prices and the distribution of construct types.