

# Total Knee Replacement Research Report

| July, 2010



## PearlDiver Technologies, Inc.

PearlDiver was founded in 2007 to aggregate patient and product data into one searchable and widely available search engine.

PearlDiver's proprietary database has more than one billion patient records and includes Medicare and private payer data as well as specific industry data as compiled by PearlDiver's team of analysts.

PearlDiver and its analysts deliver to clients the unique combination of actual patient records, with associated billing codes and cost and charging data, along with the discipline of industry analysis.

This bottom up approach to market research using actual patient data offers companies truly superior and practical market analysis.

Services include detailed market and product reports, Medicare and private payer data analysis, product and competitor intelligence reports and market forecasting services.

PearlDiver's tools and services allow for market studies based on:

- Patient outcomes by treatment option
- Medical conditions
- Insurance claims data
- Medicare data
- ICD-9 Codes
- Cross-referencing between different databases

Such market research reports are, we believe, the most comprehensive available anywhere.

# Total Knee Replacement Research Report

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### **PearlDiver Technologies, Inc.**

The orthopedic procedure volumes presented within this document take place in the time frame of January 1, 2004 through December 31, 2008. These procedural volumes are based on CPT/ICD records within the PearlDiver Private Payer Database and MedPAR (Medicare) data. National procedure volumes are estimated based upon the following factors:

1. Procedural growth tracked within the PearlDiver Patient Records Database.
2. Percentage of orthopedic procedures on a yearly basis at a national level.

PearlDiver reflects a sample size to the national population. To derive the national volume, data sources including the Centers for Medicare & Medicaid Services, the U.S. Census Bureau, as well as the American Academy of Orthopedic Surgeons were utilized.

Average charge information is based upon data within the PearlDiver Private Payer Database and MedPAR Medicare files. Detailed Medicare charge and average reimbursement information are also based upon information found within MedPAR Medicare files.

CPT is a registered trademark of the American Medical Association.

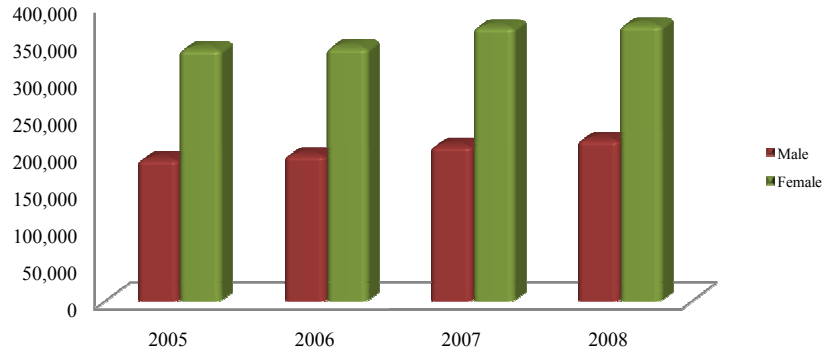
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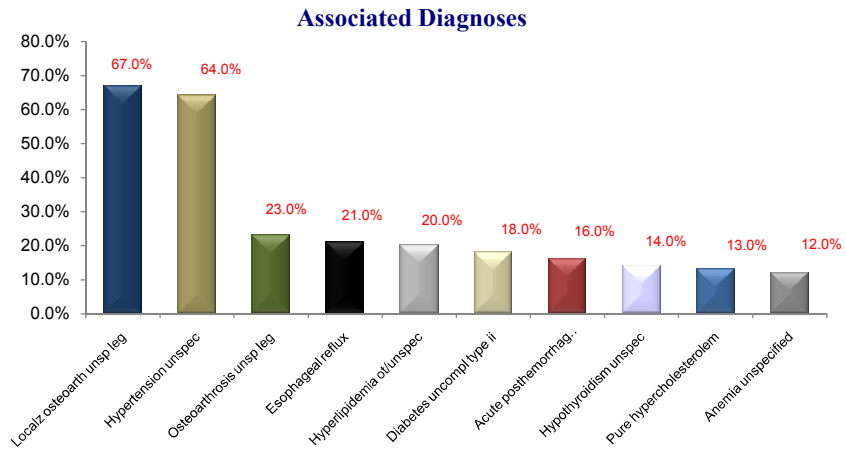
## US - National Volume (ICD-9-P-8154)

<b>Total Knee Replacement (ICD-9-P-81.54)</b>					
<b>Year</b>	<b>Annual Patient (US)</b>	<b>Male</b>	<b>% of Total</b>	<b>Female</b>	<b>% of Total</b>
2005	534,000	192,483	36.0%	341,517	64.0%
2006	542,000	198,223	36.6%	343,777	63.4%
2007	581,730	210,854	36.2%	370,894	63.8%
2008	592,783	219,250	37.0%	373,549	63.0%
<b>Total Annual</b>	<b>2,250,513</b>	<b>820,810</b>	<b>36.5%</b>	<b>1,429,737</b>	<b>63.5%</b>

*\*PearlDiver National Estimates are based on the sample size of PD Database.*



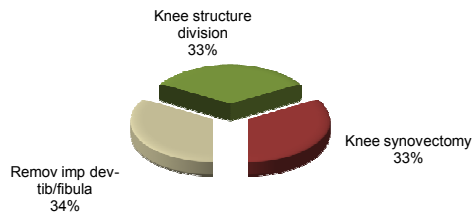
## Most Common Diagnoses Associated With Total Knee Replacement



Diagnosis Code	Definition	Percentage
ICD-9-D-71536	Localz osteoarth unsp leg	67.0%
ICD-9-D-4019	Hypertension unspec	64.0%
ICD-9-D-71596	Osteoarthritis unsp leg	23.0%
ICD-9-D-53081	Esophageal reflux	21.0%
ICD-9-D-2724	Hyperlipidemia ot/unspec	20.0%
ICD-9-D-25000	Diabetes uncompl type ii	18.0%
ICD-9-D-2851	Acute posthemorrhag anemia	16.0%
ICD-9-D-2449	Hypothyroidism unspec	14.0%
ICD-9-D-2720	Pure hypercholesterolem	13.0%
ICD-9-D-2859	Anemia unspecified	12.0%

Most Common Associated Procedures - Private Payer

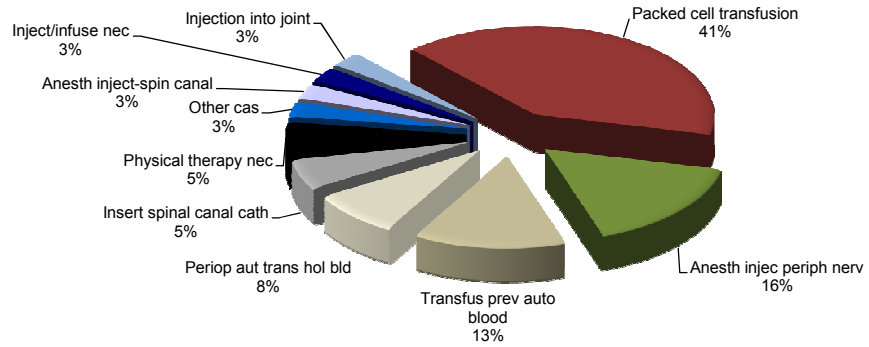
Associated Procedures



Procedure Code	Definition	Percentage
ICD-9-P-7867	Remov imp dev-tib/fibula	1.0%
ICD-9-P-8046	Knee structure division	1.0%
ICD-9-P-8076	Knee synovectomy	1.0%
ICD-9-P-806	Excis knee semilun cartl	0.0%
ICD-9-P-8026	Knee arthroscopy	0.0%
ICD-9-P-8339	Exc les soft tissue nec	0.0%
ICD-9-P-7865	Remove imp device-femur	0.0%
ICD-9-P-8016	Oth arthrotomy-knee	0.0%
ICD-9-P-7866	Remov imp device-patella	0.0%
ICD-9-P-8086	Destruct-knee lesion nec	0.0%

Most Common Associated Procedures - MedPAR

Associated Procedures



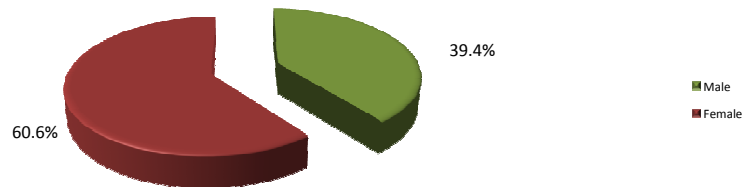
Procedure Code	Definition	Percentage
ICD-9-P-9904	Packed cell transfusion	15.0%
ICD-9-P-0481	Anesth injec periph nerv	6.0%
ICD-9-P-9902	Transfus prev auto blood	5.0%
ICD-9-P-9900	Periop aut trans hol bld	3.0%
ICD-9-P-0390	Insert spinal canal cath	2.0%
ICD-9-P-9339	Physical therapy nec	2.0%
ICD-9-P-0039	Other cas	1.0%
ICD-9-P-0391	Anesth inject-spin canal	1.0%
ICD-9-P-9929	Inject/infuse nec	1.0%
ICD-9-P-8192	Injection into joint	1.0%

## Demographics - Private Payer

<b>Total Knee Replacement (ICD-9-P-81.54)</b>					
<b>Year</b>	<b>Patient Procedures</b>	<b>Male</b>	<b>% of Total</b>	<b>Female</b>	<b>% of Total</b>
2005	9,448	3,688	39.0%	5,760	61.0%
2006	10,800	4,232	39.2%	6,568	60.8%
2007	11,903	4,626	38.9%	7,278	61.1%
2008	13,506	5,446	40.3%	8,061	59.7%
<b>Total</b>	<b>45,657</b>	<b>17,992</b>	<b>39.4%</b>	<b>27,667</b>	<b>60.6%</b>

The number of patients receiving a knee replacement shows increase each year from 2005 through 2008. Based upon this data, patients under the age of 65 receiving a knee replacement increased 43% over this four year period. While this is not indicative of the total knee replacement population as a whole, it clearly demonstrates the growth of knee replacements in the non-Medicare population.

### Procedures by Gender



*Note: Numbers represented in the private payer data are actual numbers from PearlDiver Private Payer Database. These numbers are not national numbers.*

<b>Procedures by Age Group (Males)</b>					
<b>Age Range</b>	<b>% &lt;10</b>	<b>% 10-29</b>	<b>% 30-44</b>	<b>% 45-64</b>	<b>% 65+</b>
2005	0.0%	0.0%	1.0%	55.0%	43.0%
2006	0.0%	0.0%	1.0%	58.0%	41.0%
2007	0.0%	0.0%	1.0%	58.0%	41.0%
2008	0.0%	0.0%	1.0%	57.0%	42.0%

<b>Procedures by Age Group (Females)</b>					
<b>Age Range</b>	<b>% &lt;10</b>	<b>% 10-29</b>	<b>% 30-44</b>	<b>% 45-64</b>	<b>% 65+</b>
2005	0.0%	0.0%	1.0%	60.0%	39.0%
2006	0.0%	0.0%	1.0%	61.0%	39.0%
2007	0.0%	0.0%	1.0%	59.0%	40.0%
2008	0.0%	0.0%	1.0%	60.0%	40.0%

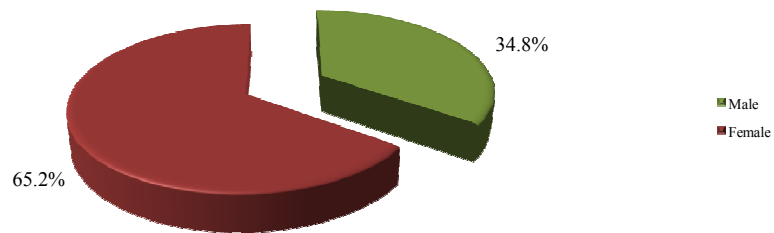
## Demographics - MedPAR

<b>Total Knee Replacement (ICD-9-P-81.54)</b>					
<b>Year</b>	<b>Patient Procedures</b>	<b>Male</b>	<b>% of Total</b>	<b>Female</b>	<b>% of Total</b>
2005	274,001	94,037	34.3%	179,964	65.7%
2006	271,207	95,097	35.1%	176,110	64.9%
2007	272,585	94,681	34.7%	177,904	65.3%
2008	127,896	44,841	35.1%	83,055	64.9%
<b>Total</b>	<b>945,689</b>	<b>328,656</b>	<b>34.8%</b>	<b>617,033</b>	<b>65.2%</b>

From 2005 through 2007, the number of total knee replacements within the MedPAR population actually decreased, but only by 0.5%. From 2007 to 2008 the data shows significant decline, however this is due to the time frame of MedPAR data. MedPAR files for 2008 actually span from the time frame of October 1, 2007 through June 30, 2008, thus a substantial number (potentially over 50%) of the patients over the age of 65 have not yet been reported.

During the time frame of 2005 through 2007, MedPAR procedures have not increased at the rate private payer procedures have, suggesting that patients are receiving total knee replacements at a younger age.

### Procedures by Gender



*Note: Numbers represented in this page are actual numbers from the MedPAR Database. These numbers are not national numbers.*

## Demographics - MedPAR

### Procedures by Age Group (Males)

Age Range	2005	% of Total	2006	% of Total	2007	% of Total	2008	% of Total
<25	2	0.0%	3	0%	3	0.0%	1	0.0%
25-44	358	0.1%	388	0%	371	0.1%	168	0.1%
45-64	6,390	2.3%	6,555	2.4%	6,873	2.5%	3,156	2.5%
65-69	21,892	8.0%	22,822	8.4%	23,092	8.5%	10,534	8.2%
70-74	24,785	9.0%	24,965	9.2%	24,589	9.0%	11,993	9.4%
75-79	22,831	8.3%	22,564	8.3%	21,587	7.9%	10,229	8.0%
80-84	12,978	4.7%	12,830	4.7%	13,085	4.8%	6,211	4.9%
85-89	4,232	1.5%	4,345	1.6%	4,453	1.6%	2,208	1.7%
90+	569	0.2%	625	0.2%	628	0.2%	341	0.3%
<b>Total</b>	<b>94,037</b>	<b>34.3%</b>	<b>95,097</b>	<b>35.1%</b>	<b>94,681</b>	<b>34.7%</b>	<b>44,841</b>	<b>35.1%</b>

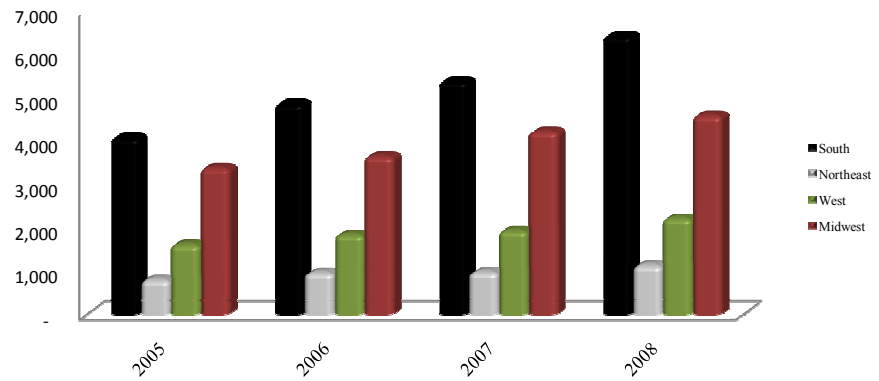
### Procedures by Age Group (Females)

Age Range	2005	% of Total	2006	% of Total	2007	% of Total	2008	% of Total
<25	11	0.0%	9	0.0%	3	0.0%	4	0.0%
25-44	764	0.3%	754	0.3%	782	0.3%	324	0.3%
45-64	15,436	5.6%	15,424	5.7%	16,727	6.1%	7,510	5.9%
65-69	41,417	15.1%	40,773	15.0%	42,054	15.4%	19,209	15.0%
70-74	44,978	16.4%	43,656	16.1%	43,783	16.1%	20,858	16.3%
75-79	41,668	15.2%	39,980	14.7%	39,130	14.4%	18,186	14.2%
80-84	25,566	9.3%	25,001	9.2%	24,954	9.2%	11,757	9.2%
85-89	8,859	3.2%	9,157	3.4%	9,143	3.4%	4,547	3.6%
90+	1,265	0.5%	1,356	0.5%	1,328	0.5%	660	0.5%
<b>Total</b>	<b>179,964</b>	<b>65.7%</b>	<b>176,110</b>	<b>64.9%</b>	<b>177,904</b>	<b>65.3%</b>	<b>83,055</b>	<b>64.9%</b>

## Regional Data - Private Payer

Number of Procedures by Region (Private Payer)					
Year	South	Northeast	West	Midwest	Total
2005	4,074	798	1,616	3,377	<b>9,865</b>
2006	4,862	962	1,838	3,645	<b>11,307</b>
2007	5,374	981	1,934	4,211	<b>12,500</b>
2008	6,414	1,136	2,215	4,579	<b>14,344</b>
<b>Overall Average</b>	<b>5,181</b>	<b>969</b>	<b>1,901</b>	<b>3,953</b>	<b>12,004</b>

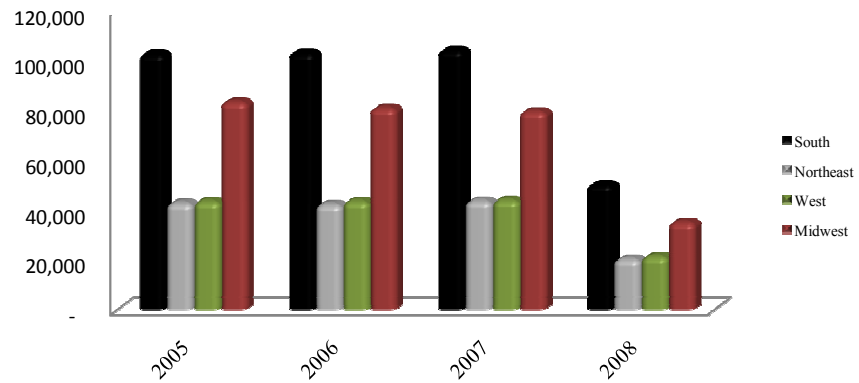
**Number of Procedures by Region (Private Payer)**



## Regional Data - MedPAR

Number of Procedures by Region					
Year	South	Northeast	West	Midwest	Total
2005	102,787	42,851	43,554	83,479	<b>272,671</b>
2006	103,279	42,336	43,605	81,038	<b>270,258</b>
2007	104,348	43,767	44,048	79,648	<b>271,811</b>
2008	50,474	20,482	21,456	35,181	<b>127,593</b>
<b>Average</b>	<b>90,222</b>	<b>37,359</b>	<b>38,166</b>	<b>69,837</b>	<b>235,583</b>

**Number of Procedures by Region (MedPAR)**



## State Data - MedPAR

<b>Number of Procedures by State</b>					
State	2005	2006	2007	2008	Average
Alabama	5,033	4,989	4,973	2,313	<b>4,327</b>
Alaska	429	486	474	215	<b>401</b>
Arizona	4,322	4,238	4,638	2,339	<b>3,884</b>
Arkansas	3,858	3,857	3,794	1,773	<b>3,321</b>
California	17,008	17,196	17,633	8,452	<b>15,072</b>
Colorado	3,728	3,771	3,834	1,758	<b>3,273</b>
Connecticut	2,995	3,104	3,153	1,531	<b>2,696</b>
Delaware	1,112	1,161	1,216	566	<b>1,014</b>
District of Columbia	360	344	357	171	<b>308</b>
Florida	17,892	18,026	18,003	8,968	<b>15,722</b>
Georgia	6,789	7,251	7,288	3,406	<b>6,184</b>
Hawaii	536	480	450	244	<b>428</b>
Idaho	1,781	1,796	1,738	810	<b>1,531</b>
Illinois	13,043	12,957	13,183	5,993	<b>11,294</b>
Indiana	7,635	7,389	7,438	3,240	<b>6,426</b>
Iowa	5,125	5,067	4,887	2,190	<b>4,317</b>
Kansas	4,118	4,186	4,194	1,925	<b>3,606</b>
Kentucky	4,401	4,373	4,450	2,262	<b>3,872</b>
Louisiana	3,715	3,750	3,764	1,778	<b>3,252</b>
Maine	1,636	1,678	1,801	790	<b>1,476</b>
Maryland	5,264	5,445	5,812	2,808	<b>4,832</b>
Massachusetts	4,891	5,080	5,248	2,483	<b>4,426</b>
Michigan	13,860	13,197	11,730	5,042	<b>10,957</b>
Minnesota	6,598	6,227	6,161	2,712	<b>5,425</b>
Mississippi	2,978	3,021	3,052	1,408	<b>2,615</b>
Missouri	6,859	6,748	6,921	3,215	<b>5,936</b>
Montana	1,496	1,403	1,335	666	<b>1,225</b>
Nebraska	3,069	2,919	2,888	1,193	<b>2,517</b>
Nevada	1,327	1,363	1,363	827	<b>1,220</b>
New Hampshire	1,242	1,307	1,337	665	<b>1,138</b>
New Jersey	5,913	6,060	6,323	3,076	<b>5,343</b>
New Mexico	1,384	1,379	1,449	683	<b>1,224</b>
New York	11,448	11,204	11,273	5,027	<b>9,738</b>
North Carolina	8,999	8,957	9,513	4,616	<b>8,021</b>
North Dakota	1,083	1,073	990	528	<b>919</b>
Ohio	12,916	12,661	13,004	5,613	<b>11,049</b>
Oklahoma	4,468	4,346	4,207	2,009	<b>3,758</b>
Oregon	2,959	2,771	2,849	1,518	<b>2,524</b>
Pennsylvania	12,421	11,521	12,085	5,715	<b>10,436</b>

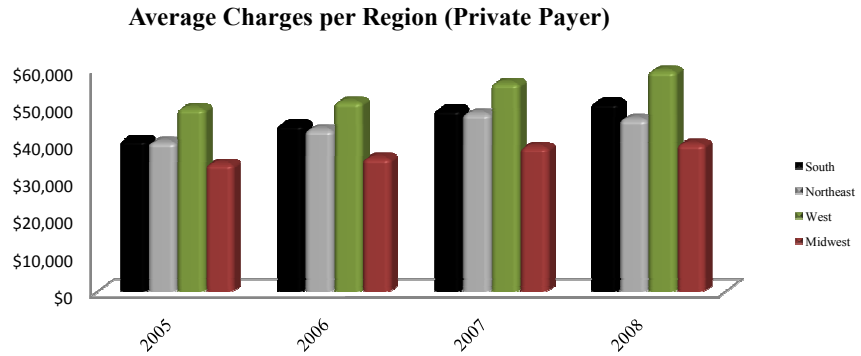
## State Data - MedPAR

<b>Number of Procedures by State</b>					
<b>State</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>Average</b>
Rhode Island	518	563	607	319	<b>502</b>
South Carolina	4,856	4,895	4,997	2,476	<b>4,306</b>
South Dakota	1,471	1,472	1,456	606	<b>1,251</b>
Tennessee	5,673	5,511	5,667	2,825	<b>4,919</b>
Texas	19,244	19,107	19,111	9,062	<b>16,631</b>
Utah	2,690	2,521	2,360	1,056	<b>2,157</b>
Vermont	675	658	724	310	<b>592</b>
Virginia	6,779	6,981	7,060	3,613	<b>6,108</b>
Washington	5,149	5,434	5,246	2,586	<b>4,604</b>
West Virginia	2,478	2,426	2,300	986	<b>2,048</b>
Wisconsin	7,702	7,142	6,796	2,924	<b>6,141</b>
Wyoming	745	767	679	302	<b>623</b>

## Regional Charging Data - Private Payer

Average Charges per Region					
Year	South	Northeast	West	Midwest	Per Year
2005	\$40,993	\$40,319	\$49,339	\$34,459	<b>\$41,278</b>
2006	\$45,041	\$43,690	\$51,164	\$36,037	<b>\$43,983</b>
2007	\$49,101	\$47,987	\$56,150	\$38,970	<b>\$48,052</b>
2008	\$50,919	\$46,486	\$59,461	\$39,849	<b>\$49,179</b>
<b>Average</b>	<b>\$46,514</b>	<b>\$44,621</b>	<b>\$54,029</b>	<b>\$37,329</b>	<b>\$45,623</b>

From 2005 through 2008, the average charges have been the highest in the Western region of the United States each year. As of 2008, those average charges were 16.8% higher than the South which averaged the second highest in charges. The lowest average charges were in the Midwest, which averaged \$19,612 less than the Western Region of the United States, or 33% lower.



## Detailed Charging Data - Private Payer

Private Payer Charge Data				
Year	2005	2006	2007	2008
Average Charge	\$ 40,069	\$ 43,019	\$ 46,691	\$ 48,353
Average length of stay (Days)	3	3	3	3

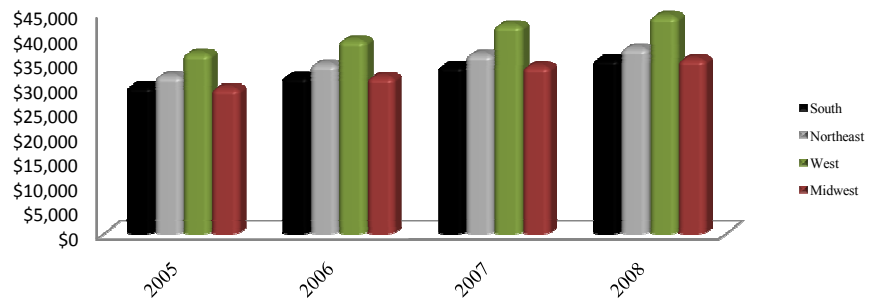
## Regional Charging Data - MedPAR

Average Charges per Region					
Year	South	Northeast	West	Midwest	Per Year
2005	\$30,129	\$32,086	\$36,722	\$29,679	<b>\$32,154</b>
2006	\$32,031	\$34,492	\$39,404	\$31,875	<b>\$34,451</b>
2007	\$34,192	\$36,505	\$42,518	\$34,032	<b>\$36,812</b>
2008	\$35,632	\$37,793	\$44,344	\$35,517	<b>\$38,322</b>
<b>Average</b>	<b>\$32,996</b>	<b>\$35,219</b>	<b>\$40,747</b>	<b>\$32,776</b>	<b>\$35,434</b>

Although the difference is not as substantial as Private Payer average charges, again the Western region of the United States ranked the highest in 2008.

One key difference between the Private Payer and MedPAR average charges is Southern region. For Private Payer patients, the average charges in the South were \$50,919 in 2008, which was not even close to the lowest average charges of the Midwestern \$39,849. However, within the MedPar patient set, the average charges of a total knee replacement in the South is only \$115 higher than the Midwest.

**Average Charges per Region (MedPAR)**



## Detailed Charging Data - MedPAR

Average Medicare Charge and Cost Data				
Year	2005	2006	2007	2008
Average Charge	\$35,727	\$38,522	\$41,359	\$43,445
Average Covered	\$35,644	\$38,421	\$41,238	\$43,163
Average Reimbursement	\$10,323	\$10,502	\$10,819	\$10,822
DRG Price	\$12,008	\$12,201	\$12,631	\$12,432
Coinsurance Amount	\$0	\$0	\$0	\$0
Average length of stay (Days)	3	3	3	3

## Detailed Charging Data - MedPAR

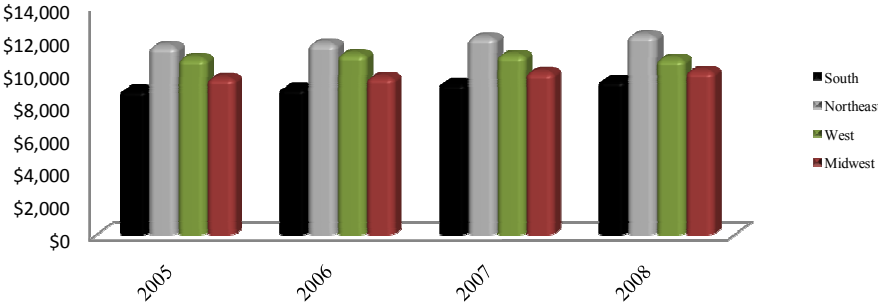
<b>Average Medicare Charge and Cost Data (detailed)</b>				
Year	2005	2006	2007	2008
Accomidations	\$3,898	\$4,104	\$4,268	\$4,359
Department	\$31,828	\$34,418	\$37,091	\$39,086
Other	\$157	\$162	\$158	\$154
Pharma	\$2,662	\$2,791	\$2,858	\$2,919
Med surgery	\$16,292	\$17,564	\$18,914	\$19,888
DME	\$3	\$1	\$2	\$1
Used DME	\$0	\$0	\$0	\$0
Phy Th	\$1,033	\$1,087	\$1,143	\$1,189
Occ Th	\$200	\$221	\$241	\$248
Speech Th	\$2	\$2	\$2	\$2
Inhalation Th	\$266	\$280	\$290	\$276
Blood	\$6	\$4	\$3	\$2
Blood Admin	\$269	\$303	\$316	\$330
OR	\$7,817	\$8,648	\$9,551	\$10,247
Lithotripsy	\$0	\$0	\$0	\$0
Cardio	\$173	\$176	\$181	\$189
anesthesia	\$1,129	\$1,252	\$1,396	\$1,530
Lab	\$1,384	\$1,464	\$1,552	\$1,616
Radiology	\$392	\$415	\$437	\$451
MRI	\$10	\$11	\$12	\$11
ER	\$2	\$3	\$3	\$3
Ambulance	\$0	\$0	\$0	\$0
Prof Fees	\$3	\$3	\$3	\$2
Organ Aquisition	\$0	\$0	\$0	\$0
ESRD	\$6	\$8	\$8	\$8
Clinic Visit	\$1	\$1	\$2	\$1
Out Patient Services	\$10	\$10	\$7	\$10

## Regional Reimbursement Data - MedPAR

Average Reimbursement per Region					
Year	South	Northeast	West	Midwest	Per Year
2005	\$8,910	\$11,558	\$10,844	\$9,615	<b>\$10,232</b>
2006	\$9,024	\$11,730	\$11,092	\$9,673	<b>\$10,380</b>
2007	\$9,332	\$12,106	\$11,037	\$9,985	<b>\$10,615</b>
2008	\$9,503	\$12,242	\$10,801	\$10,053	<b>\$10,650</b>
<b>Average</b>	<b>\$9,192</b>	<b>\$11,909</b>	<b>\$10,944</b>	<b>\$9,832</b>	<b>\$10,469</b>

By average charge, patients in the West averaged the highest charge. This clearly does not translate to reimbursement. Each year from 2005 through 2008, the highest average reimbursement was in the Northeast, despite having lower average charges than the west.

**Average Reimbursement per Region (MedPAR)**



## State Charging Data - MedPAR

<b>Average Charges per State</b>					
<b>State</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>Average</b>
Alabama	\$37,901	\$40,497	\$42,733	\$43,982	<b>\$41,278</b>
Alaska	\$37,926	\$43,342	\$45,700	\$48,880	<b>\$43,962</b>
Arizona	\$38,870	\$41,383	\$43,762	\$46,433	<b>\$42,612</b>
Arkansas	\$32,407	\$34,137	\$34,338	\$33,703	<b>\$33,646</b>
California	\$64,243	\$68,271	\$74,192	\$77,017	<b>\$70,931</b>
Colorado	\$41,197	\$45,481	\$49,163	\$51,590	<b>\$46,858</b>
Connecticut	\$28,954	\$30,681	\$33,010	\$33,504	<b>\$31,537</b>
Delaware	\$26,011	\$28,851	\$30,025	\$29,557	<b>\$28,611</b>
District of Columbia	\$32,612	\$32,254	\$35,466	\$37,184	<b>\$34,379</b>
Florida	\$44,720	\$47,880	\$50,742	\$53,946	<b>\$49,322</b>
Georgia	\$35,652	\$37,784	\$40,075	\$41,260	<b>\$38,693</b>
Hawaii	\$33,558	\$34,578	\$35,314	\$35,755	<b>\$34,801</b>
Idaho	\$26,103	\$27,178	\$29,693	\$31,261	<b>\$28,559</b>
Illinois	\$37,485	\$40,198	\$43,211	\$45,456	<b>\$41,588</b>
Indiana	\$32,093	\$35,038	\$37,678	\$40,016	<b>\$36,206</b>
Iowa	\$28,343	\$30,896	\$32,959	\$33,880	<b>\$31,520</b>
Kansas	\$29,748	\$32,394	\$33,543	\$35,139	<b>\$32,706</b>
Kentucky	\$30,529	\$32,325	\$34,124	\$35,078	<b>\$33,014</b>
Louisiana	\$36,833	\$38,887	\$41,942	\$43,307	<b>\$40,242</b>
Maine	\$28,158	\$29,891	\$30,563	\$31,109	<b>\$29,930</b>
Maryland	\$18,878	\$19,486	\$21,343	\$22,872	<b>\$20,645</b>
Massachusetts	\$26,914	\$28,692	\$30,052	\$31,424	<b>\$29,271</b>
Michigan	\$27,463	\$29,371	\$30,881	\$32,146	<b>\$29,965</b>
Minnesota	\$27,606	\$29,512	\$31,014	\$32,702	<b>\$30,209</b>
Mississippi	\$35,985	\$38,641	\$40,478	\$43,785	<b>\$39,722</b>
Missouri	\$32,796	\$34,955	\$37,354	\$37,588	<b>\$35,673</b>
Montana	\$24,569	\$25,779	\$27,247	\$28,850	<b>\$26,611</b>
Nebraska	\$30,667	\$33,084	\$35,469	\$37,857	<b>\$34,269</b>
Nevada	\$51,136	\$53,658	\$59,219	\$60,950	<b>\$56,241</b>
New Hampshire	\$35,136	\$37,803	\$39,608	\$42,969	<b>\$38,879</b>
New Jersey	\$53,262	\$57,432	\$59,613	\$61,008	<b>\$57,829</b>
New Mexico	\$39,212	\$40,959	\$43,455	\$45,378	<b>\$42,251</b>
New York	\$31,434	\$34,110	\$36,657	\$38,978	<b>\$35,295</b>
North Carolina	\$30,152	\$32,003	\$33,937	\$35,359	<b>\$32,863</b>
North Dakota	\$24,481	\$25,804	\$27,318	\$28,154	<b>\$26,439</b>
Ohio	\$31,129	\$33,194	\$35,387	\$37,444	<b>\$34,289</b>
Oklahoma	\$30,761	\$33,652	\$36,361	\$37,063	<b>\$34,459</b>
Oregon	\$30,109	\$31,905	\$35,362	\$35,961	<b>\$33,334</b>
Pennsylvania	\$34,839	\$38,691	\$41,587	\$43,011	<b>\$39,532</b>

## State Charging Data - MedPAR

<b>Average Charges per State (Medicare)</b>					
<b>State</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>Average</b>
Rhode Island	\$26,953	\$28,281	\$31,194	\$32,078	<b>\$29,627</b>
South Carolina	\$39,967	\$42,778	\$45,756	\$47,691	<b>\$44,048</b>
South Dakota	\$25,809	\$27,732	\$31,215	\$32,102	<b>\$29,215</b>
Tennessee	\$34,727	\$38,097	\$41,853	\$43,480	<b>\$39,539</b>
Texas	\$40,313	\$44,127	\$47,237	\$49,935	<b>\$45,403</b>
Utah	\$26,040	\$28,098	\$30,382	\$31,413	<b>\$28,983</b>
Vermont	\$29,202	\$30,490	\$32,743	\$34,294	<b>\$31,682</b>
Virginia	\$34,489	\$37,143	\$41,012	\$42,928	<b>\$38,893</b>
Washington	\$31,612	\$35,147	\$40,718	\$43,098	<b>\$37,644</b>
West Virginia	\$26,406	\$26,873	\$28,060	\$29,815	<b>\$27,789</b>
Wisconsin	\$28,536	\$30,326	\$32,356	\$33,730	<b>\$31,237</b>
Wyoming	\$32,812	\$36,480	\$38,529	\$39,888	<b>\$36,927</b>

State Reimbursement Data - MedPAR

<b>Average Reimbursement per State</b>					
<b>State</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>Average</b>
Alabama	\$8,812	\$8,855	\$9,123	\$9,147	<b>\$8,984</b>
Alaska	\$13,783	\$14,313	\$14,209	\$14,523	<b>\$14,207</b>
Arizona	\$9,828	\$10,180	\$10,489	\$9,863	<b>\$10,090</b>
Arkansas	\$8,753	\$8,918	\$9,462	\$9,741	<b>\$9,219</b>
California	\$12,610	\$12,998	\$13,328	\$13,098	<b>\$13,009</b>
Colorado	\$10,140	\$10,220	\$10,595	\$10,926	<b>\$10,470</b>
Connecticut	\$12,850	\$13,105	\$13,719	\$13,760	<b>\$13,359</b>
Delaware	\$11,126	\$11,102	\$11,746	\$12,289	<b>\$11,566</b>
District of Columbia	\$12,778	\$12,850	\$13,427	\$14,228	<b>\$13,321</b>
Florida	\$9,704	\$9,821	\$10,084	\$9,879	<b>\$9,872</b>
Georgia	\$9,793	\$9,798	\$10,041	\$10,140	<b>\$9,943</b>
Hawaii	\$11,423	\$12,001	\$11,812	\$12,566	<b>\$11,951</b>
Idaho	\$9,708	\$10,218	\$9,347	\$9,316	<b>\$9,647</b>
Illinois	\$10,336	\$10,469	\$10,750	\$10,914	<b>\$10,617</b>
Indiana	\$9,602	\$9,687	\$9,873	\$10,070	<b>\$9,808</b>
Iowa	\$9,160	\$9,249	\$9,705	\$9,748	<b>\$9,466</b>
Kansas	\$9,116	\$9,090	\$9,307	\$9,427	<b>\$9,235</b>
Kentucky	\$9,544	\$9,728	\$10,029	\$10,274	<b>\$9,894</b>
Louisiana	\$9,460	\$9,579	\$9,889	\$9,921	<b>\$9,712</b>
Maine	\$10,056	\$10,190	\$10,413	\$10,637	<b>\$10,324</b>
Maryland	\$14,526	\$15,214	\$16,511	\$17,892	<b>\$16,036</b>
Massachusetts	\$11,878	\$12,120	\$12,475	\$12,489	<b>\$12,241</b>
Michigan	\$10,653	\$10,676	\$10,966	\$10,719	<b>\$10,754</b>
Minnesota	\$10,113	\$10,133	\$10,456	\$10,657	<b>\$10,340</b>
Mississippi	\$9,686	\$9,763	\$9,888	\$10,179	<b>\$9,879</b>
Missouri	\$9,331	\$9,452	\$9,924	\$9,794	<b>\$9,625</b>
Montana	\$9,846	\$9,868	\$9,492	\$9,089	<b>\$9,574</b>
Nebraska	\$9,357	\$9,286	\$9,527	\$9,711	<b>\$9,470</b>
Nevada	\$9,862	\$10,168	\$10,576	\$8,363	<b>\$9,742</b>
New Hampshire	\$10,651	\$11,173	\$11,410	\$11,595	<b>\$11,207</b>
New Jersey	\$12,764	\$13,118	\$13,348	\$13,427	<b>\$13,164</b>
New Mexico	\$10,742	\$10,873	\$11,094	\$11,412	<b>\$11,030</b>
New York	\$11,977	\$12,090	\$12,647	\$12,773	<b>\$12,372</b>
North Carolina	\$10,019	\$10,112	\$10,402	\$10,364	<b>\$10,224</b>
North Dakota	\$9,336	\$9,185	\$9,348	\$9,425	<b>\$9,324</b>
Ohio	\$9,645	\$9,808	\$10,095	\$10,173	<b>\$9,930</b>
Oklahoma	\$8,644	\$8,603	\$8,975	\$9,189	<b>\$8,853</b>
Oregon	\$11,207	\$11,095	\$10,405	\$9,011	<b>\$10,430</b>
Pennsylvania	\$9,921	\$10,278	\$10,612	\$10,220	<b>\$10,258</b>

State Reimbursement Data - MedPAR

<b>Average Reimbursement per State (Medicare)</b>					
<b>State</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>Average</b>
Rhode Island	\$11,689	\$11,566	\$12,298	\$11,668	<b>\$11,805</b>
South Carolina	\$9,788	\$9,984	\$10,044	\$10,213	<b>\$10,007</b>
South Dakota	\$9,183	\$9,335	\$9,756	\$9,865	<b>\$9,535</b>
Tennessee	\$9,724	\$9,811	\$9,846	\$9,606	<b>\$9,747</b>
Texas	\$10,116	\$10,298	\$10,532	\$10,598	<b>\$10,386</b>
Utah	\$9,445	\$9,582	\$9,508	\$9,719	<b>\$9,564</b>
Vermont	\$12,668	\$12,565	\$12,396	\$13,564	<b>\$12,798</b>
Virginia	\$9,424	\$9,461	\$9,786	\$9,768	<b>\$9,610</b>
Washington	\$11,015	\$11,179	\$11,452	\$11,343	<b>\$11,247</b>
West Virginia	\$9,624	\$9,650	\$9,947	\$9,915	<b>\$9,784</b>
Wisconsin	\$9,551	\$9,716	\$10,124	\$10,133	<b>\$9,881</b>
Wyoming	\$11,371	\$11,512	\$11,176	\$11,189	<b>\$11,312</b>

## Comorbidities

<b>Comorbidity Prevalence (Private Payer)</b>				
<b>Year</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
Osteoporosis	11%	11%	11%	10%
Smoking	5%	6%	6%	5%
Anemia	21%	22%	25%	26%
Obesity	11%	11%	12%	12%
Hypertension	50%	51%	51%	50%
Arthritis	90%	91%	91%	91%
Diabetes	14%	14%	14%	14%

<b>Comorbidity Prevalence (MedPAR)</b>				
<b>Year</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
Osteoporosis	6%	7%	7%	7%
Smoking	9%	9%	10%	10%
Anemia	29%	31%	33%	36%
Obesity	10%	10%	11%	12%
Hypertension	69%	70%	71%	71%
Arthritis	38%	35%	33%	33%
Diabetes	20%	21%	22%	22%

## Comorbidities

### Definition and Codes Related with Comorbidities

#### Osteoporosis

ICD-9- Procedure code		Definition
733.00	Osteoporosis, unspecified	
733.01	Senile osteoporosis	
733.02	Idiopathic osteoporosis	
733.03	Disuse osteoporosis	
733.09	Other	

#### Smoking

ICD-9- Procedure code		Definition
305.1	Tobacco use disorder	
V15.82	History of tobacco use	

#### Obesity

ICD-9- Procedure code		Definition
278.0	Overweight and obesity	
278.00	Obesity, unspecified	
278.01	Morbid obesity	
278.02	Overweight	

#### Anemia

ICD-9- Procedure code		Definition
280	Iron deficiency anemias	
280.0	Secondary to blood loss (chronic)	
280.1	Secondary to inadequate dietary iron intake	
280.8	Other specified iron deficiency anemias	
280.9	Iron deficiency anemia, unspecified	
281	Other deficiency anemias	
281.0	Pernicious anemia	
281.1	Other vitamin B12 deficiency anemia	
281.3	Other specified megaloblastic anemias not elsewhere classified	
281.4	Protein-deficiency anemia	
281.8	Anemia associated with other specified nutritional deficiency	
281.9	Unspecified deficiency anemia	
282	Hereditary hemolytic anemias	
282.0	Hereditary spherocytosis	

## Comorbidities

### *Definition and Codes Related with Comorbidities*

#### Anemia

ICD-9- Procedure code	Definition
282.1	Hereditary elliptocytosis
282.2	Anemias due to disorders of glutathione metabolism
282.3	Other hemolytic anemias due to enzyme deficiency
282.4	Thalassemias
282.5	Sickle-cell trait
282.6	Sickle-cell anemia
282.60	Sickle-cell anemia NOS
282.61	Hb-SS disease without crisis
282.62	Hb-SS disease with crisis
282.63	Sickle-cell/Hb-C disease without crisis
282.69	Other sickle-cell disease with crisis
282.7	Other hemoglobinopathies
282.8	Other specified hereditary hemolytic anemias
282.9	Hereditary hemolytic anemia, unspecified
283	Acquired hemolytic anemias
283.0	Autoimmune hemolytic anemias
283.1	Non-autoimmune hemolytic anemias
283.9	Acquired hemolytic anemia, unspecified
284	Aplastic anemia and other bone marrow failure syndromes
284.0	Constitutional aplastic anemia
284.8	Other specified aplastic anemias
284.9	Aplastic anemia, unspecified
285	Other and unspecified anemias
285.0	Sideroblastic anemia
285.1	Acute posthemorrhagic anemia
285.2	Anemia in chronic disease
285.21	Anemia in chronic kidney disease
285.22	Anemia in neoplastic disease
285.29	Anemia of other chronic disease
285.8	Other specified anemias
285.9	Anemia, unspecified

#### Arthritis

ICD-9- Procedure code	Definition
711.00	Pyogenic arthritis, site unspecified
711.01	Pyogenic arthritis, shoulder region
711.02	Pyogenic arthritis, upper arm
711.03	Pyogenic arthritis, forearm
711.04	Pyogenic arthritis, hand
711.05	Pyogenic arthritis, pelvic region and thigh

## Comorbidities

### *Definition and Codes Related with Comorbidities*

#### Arthritis

ICD-9- Procedure code	Definition
711.06	Pyogenic arthritis, lower leg
711.07	Pyogenic arthritis, ankle and foot
711.08	Pyogenic arthritis, other specified sites
711.09	Pyogenic arthritis, multiple sites
711.90	Unspecified infective arthritis, site unspecified
711.91	Unspecified infective arthritis, shoulder region
711.92	Unspecified infective arthritis, upper arm
711.93	Unspecified infective arthritis, forearm
711.94	Unspecified infective arthritis, hand
711.95	Unspecified infective arthritis, pelvic region and thigh
711.96	Unspecified infective arthritis, lower leg
711.97	Unspecified infective arthritis, ankle and foot
711.98	Unspecified infective arthritis, other specified sites
711.99	Unspecified infective arthritis, multiple sites
713.5	Arthropathy associated with neurological disorders
714.0	Rheumatoid arthritis
714.1	Felty's syndrome
714.2	Other rheumatoid arthritis with visceral or systemic involvement
714.30	Polyarticular juvenile rheumatoid arthritis, chronic or unspecified
714.31	Polyarticular juvenile rheumatoid arthritis, acute
714.32	Pauciarticular juvenile rheumatoid arthritis
714.33	Monoarticular juvenile rheumatoid arthritis
715.0	Osteoarthritis, generalized
715.00	Generalized osteoarthritis, unspecified site
715.04	Generalized osteoarthritis, involving hand
715.09	Generalized osteoarthritis, involving multiple sites
715.1	Osteoarthritis, localized, primary
715.10	Primary localized osteoarthritis, specified site
715.11	Primary localized osteoarthritis, shoulder region
715.12	Primary localized osteoarthritis, upper arm
715.13	Primary localized osteoarthritis, forearm
715.14	Primary localized osteoarthritis, hand
715.15	Primary localized osteoarthritis, pelvic region and thigh
715.16	Primary localized osteoarthritis, lower leg
715.17	Primary localized osteoarthritis, ankle and foot
715.18	Primary localized osteoarthritis, other specified sites
715.30	Localized osteoarthritis not specified as primary or secondary, unspecified site
715.31	Localized osteoarthritis not specified as primary or secondary, shoulder region
715.32	Localized osteoarthritis not specified as primary or secondary, upper arm
715.33	Localized osteoarthritis not specified as primary or secondary, forearm
715.34	Localized osteoarthritis not specified as primary or secondary, hand
715.35	Localized osteoarthritis not specified as primary or secondary, lower leg

## Comorbidities

### *Definition and Codes Related with Comorbidities*

#### Arthritis

ICD-9- Procedure code	Definition
715.9	Osteoarthritis, unspecified as generalized or localized
715.94	Osteoarthritis, unspecified as generalized or localized, hand
715.95	Osteoarthritis, unspecified as generalized or localized, pelvic region and thigh
715.96	Osteoarthritis, unspecified as generalized or localized, lower leg
715.97	Osteoarthritis, unspecified as generalized or localized, ankle and foot
715.98	Osteoarthritis, unspecified as generalized or localized, other specified sites
716.20	Allergic arthritis, site unspecified
716.21	Allergic arthritis, shoulder region
716.22	Allergic arthritis, upper arm
716.23	Allergic arthritis, forearm
716.24	Allergic arthritis, hand
716.25	Allergic arthritis, pelvic region and thigh
716.26	Allergic arthritis, lower leg
716.27	Allergic arthritis, ankle and foot
716.28	Allergic arthritis, other specified sites
716.29	Allergic arthritis, multiple sites
716.30	Climacteric arthritis, site unspecified
716.31	Climacteric arthritis, shoulder region
716.32	Climacteric arthritis, upper arm
716.33	Climacteric arthritis, forearm
716.34	Climacteric arthritis, hand
716.35	Climacteric arthritis, pelvic region and thigh
716.36	Climacteric arthritis, lower leg
716.37	Climacteric arthritis involving ankle and foot
716.38	Climacteric arthritis involving other specified sites
716.39	Climacteric arthritis involving multiple sites

#### Hypertension

ICD-9- Procedure code	Definition
401	Essential hypertension
401.0	Essential hypertension-malignant
401.1	Essential hypertension-benign
401.9	Essential hypertension-unspecified
402	Hypertensive heart disease
402.0	Hypertensive heart disease-malignant
402.00	Without heart failure
402.01	With heart failure
402.1	Benign
402.10	Without heart failure
402.11	With heart failure

## Comorbidities

### *Definition and Codes Related with Comorbidities*

#### Hypertension

ICD-9- Procedure code	Definition
402.9	Unspecified
402.90	Without heart failure
402.91	With heart failure
403	Hypertensive chronic kidney disease
403.0	Malignant
403.00	Hypertensive chronic kidney disease
403.01	Hypertensive chronic kidney disease, malignant
403.1	Benign
403.10	Hypertensive chronic kidney disease
403.11	Hypertensive chronic kidney disease
403.9	Unspecified
403.90	Hypertensive chronic kidney disease, unspecified
403.91	Hypertensive chronic kidney disease, unspecified
405	Secondary hypertension
405.0	Malignant
405.01	Renovascular
405.09	Other
405.1	Benign
405.11	Renovascular
405.19	Other
405.9	Unspecified
405.91	Renovascular
405.99	Other
416.0	Primary pulmonary hypertension
416.1	Kyphoscoliotic heart disease
416.8	Other chronic pulmonary heart diseases
416.9	Chronic pulmonary heart disease, unspecified
425.8	Cardiomyopathy in other diseases classified elsewhere
429.0	Myocarditis, unspecified
429.1	Myocardial degeneration
429.2	Cardiovascular disease, unspecified
429.3	Cardiomegaly
429.9	Heart disease, unspecified

#### Diabetes

ICD-9- Procedure code	Definition
250.0	Diabetes mellitus without mention of complication
250.00	Diabetes mellitus without mention of complication, type II, unspecified, not stated as uncontrolled
250.01	Diabetes mellitus without mention of complication, type I [juvenile type], not stated as uncontrolled
250.02	Diabetes mellitus without mention of complication, type II or unspecified type, uncontrolled
250.03	Diabetes mellitus without mention of complication, type I [juvenile type], uncontrolled

## Comorbidities

### *Definition and Codes Related with Comorbidities*

#### Diabetes

##### ICD-9-

Procedure code	Definition
250.1	Diabetes with ketoacidosis
250.10	Diabetes with ketoacidosis, type II or unspecified type, not stated as uncontrolled
250.11	Diabetes with ketoacidosis, type I [juvenile type], not stated as uncontrolled
250.12	Diabetes with ketoacidosis, type II or unspecified type, uncontrolled
250.13	Diabetes with ketoacidosis, type I [juvenile type], uncontrolled
250.2	Diabetes with hyperosmolarity
250.20	Diabetes with hyperosmolarity, type II or unspecified type, not stated as uncontrolled
250.21	Diabetes with hyperosmolarity, type I [juvenile type], not stated as uncontrolled
250.22	Diabetes with hyperosmolarity, type II or unspecified type, uncontrolled
250.23	Diabetes with hyperosmolarity, type I [juvenile type], uncontrolled
250.3	Diabetes with other coma
250.30	Diabetes with other coma, type II or unspecified type, not stated as uncontrolled
250.31	Diabetes with other coma, type I [juvenile type], not stated as uncontrolled
250.32	Diabetes with other coma, type II or unspecified type, uncontrolled
250.33	Diabetes with other coma, type I [juvenile type], uncontrolled
250.4	Diabetes with renal manifestations
250.40	Diabetes with renal manifestations, type II or unspecified type, not stated as uncontrolled
250.41	Diabetes with renal manifestations, type I [juvenile type], not stated as uncontrolled
250.42	Diabetes with renal manifestations, type II or unspecified type, uncontrolled
250.43	Diabetes with renal manifestations, type I [juvenile type], uncontrolled
250.5	Diabetes with ophthalmic manifestations
250.50	Diabetes with ophthalmic manifestations, type II or unspecified type, not stated as uncontrolled
250.51	Diabetes with ophthalmic manifestations, type I [juvenile type], not stated as uncontrolled
250.52	Diabetes with ophthalmic manifestations, type II or unspecified type, uncontrolled
250.53	Diabetes with ophthalmic manifestations, type I [juvenile type], uncontrolled
250.6	Diabetes with neurological manifestations
250.60	Diabetes with neurological manifestations, type II or unspecified type, not stated as uncontrolled
250.61	Diabetes with neurological manifestations, type I [juvenile type], not stated as uncontrolled
250.62	Diabetes with neurological manifestations, type II or unspecified type, uncontrolled
250.63	Diabetes with neurological manifestations, type I [juvenile type], uncontrolled
250.7	Diabetes with peripheral circulatory disorders
250.70	Diabetes with peripheral circulatory disorders, type II or unspecified type, not stated as uncontrolled
250.71	Diabetes with peripheral circulatory disorders, type I [juvenile type], not stated as uncontrolled
250.72	Diabetes with peripheral circulatory disorders, type II or unspecified type, uncontrolled
250.73	Diabetes with peripheral circulatory disorders, type I [juvenile type], uncontrolled
250.8	Diabetes with other specified manifestations
250.80	Diabetes with other specified manifestations, type II or unspecified type, not stated as uncontrolled
250.81	Diabetes with other specified manifestations, type I [juvenile type], not stated as uncontrolled
250.82	Diabetes with other specified manifestations, type II or unspecified type, uncontrolled
250.83	Diabetes with other specified manifestations, type I [juvenile type], uncontrolled
250.9	Diabetes with unspecified complication

## Comorbidities

### *Definition and Codes Related with Comorbidities*

#### Diabetes

##### ICD-9-

##### Procedure code

##### Definition

250.90	Diabetes with unspecified complication, type II or unspecified type, not stated as uncontrolled
250.91	Diabetes with unspecified complication, type I [juvenile type], not stated as uncontrolled
250.92	Diabetes with unspecified complication, type II or unspecified type, uncontrolled
250.93	Diabetes with unspecified complication, type I [juvenile type], uncontrolled

### **1. Mobile and fixed-bearing (all-polyethylene tibial component) total knee arthroplasty designs. A prospective randomized trial.**

Authors; Gioe TJ, Glynn J, Sembrano J, Suthers K, Santos ER, Singh J.

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*BACKGROUND: Proponents of mobile-bearing total knee arthroplasty believe that it has potential advantages over a fixed-bearing design in terms of diminished wear and improved motion and/or function, but these advantages have not been demonstrated in a randomized clinical comparison to our knowledge. We conducted a patient-blinded, prospective, randomized clinical trial to compare mobile-bearing and fixed-bearing cruciate-substituting total knee arthroplasties of the same design.*

*METHODS: Patients between the ages of sixty and eighty-five years were prospectively randomized to receive a cruciate-substituting rotating-platform design or a fixed-bearing design with an all-polyethylene tibial component. There were no significant differences in the demographic characteristics (mean age, 72.2 years; mean American Society of Anesthesiologists score, 2.7; mean body mass index, 31.8 kg/m(2)) or preoperative clinical or radiographic measures between the groups. Routine clinical and radiographic follow-up measures included the Knee Society score (KSS), Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC), and Short Form-36 (SF-36) outcome measures.*

*RESULTS: The results of 312 arthroplasties (136 with an all-polyethylene tibial component and 176 rotating-platform designs) in 273 patients were analyzed at a minimum of two years (mean, forty-two months) postoperatively. Although there was significant improvement in both groups, there was no significant difference between the groups with regard to the mean postoperative range of motion (110.9 degrees and 109.1 degrees, respectively;  $p = 0.21$ ), the mean KSS clinical score (90.4 and 88.2 points;  $p = 0.168$ ), or the mean KSS pain score (44.9 and 43.1 points;  $p = 0.108$ ) at this follow-up point. There were ten revisions: seven because of infection, one because of patellar fracture, one because of instability, and one because of aseptic loosening.*

### **2. Early mobilization after total knee replacement reduces the incidence of deep venous thrombosis.**

Authors; Chandrasekaran S, Ariaretnam SK, Tsung J, Dickison D.

Published: J Surg Orthop Adv. 2009 Jul;79(7-8):526-9.

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*Both chemical and mechanical methods of prophylaxis have reduced the incidence of thromboembolic complications following total knee replacement (TKR). Only a few studies have shown that mobilization on the first post-operative day further reduces the incidence of thromboembolic phenomena. We conducted a prospective study to verify not only if early mobilization but also whether the distance mobilized on the first post-operative day after TKR reduced the incidence of thromboembolic complications. The incidence of deep venous thrombosis and pulmonary embolism were compared in 50 consecutive patients who underwent TKR from July 2006 following a change in the mobilization protocol with 50 consecutive patients who underwent TKR before the protocol was instigated. The mobilization protocol changed from strict bed rest the first post-operative day to mobilization on the first post-operative day. Mobilization was defined as sitting out of bed or walking for at least 15-30 min twice a day. The distance mobilized was accurately recorded by the physiotherapists. All patients underwent duplex scans of both lower limbs on the fourth post-operative day. There was a significant reduction in the incidence of thromboembolic complications in the mobilization group (seven in total) compared with the control group (16 in total) ( $P= 0.03$ ). Furthermore, in the mobilization group the odds of developing a thromboembolic complication was significantly reduced the greater the distance the patient mobilized (Chi-squared linear trend = 8.009,  $P= 0.0047$ ). Early mobilization in the first 24 h after TKR is a cheap and effective way to reduce the incidence of post-operative deep venous thrombosis.*

Procedures 2005-2013 est

Total Knee Replacement (ICD-9-P-81.54)					
Year	Annual Patient (US)	Male	% of Total	Female	% of Total
2005	534,000	192,483	36.0%	341,517	64.0%
2006	542,000	198,223	36.6%	343,777	63.4%
2007	581,730	210,854	36.2%	370,894	63.8%
2008	592,783	219,250	37.0%	373,549	63.0%
2009E	591,005	217,490	36.8%	373,515	63.2%
2010E	608,144	225,621	37.1%	382,523	62.9%
2011E	629,429	235,406	37.4%	394,023	62.6%
2012E	659,641	248,025	37.6%	411,616	62.4%
2013E	663,335	247,424	37.3%	415,911	62.7%
<b>Average</b>	<b>600,230</b>	<b>221,642</b>	<b>36.9%</b>	<b>378,592</b>	<b>63.1%</b>

*\*PearlDiver National Estimates are based on the sample size of PD Database.*

