

Total Hip and Knee Replacements

FISCAL YEAR 2002: JULY 1, 2001 TO JUNE 30, 2002



PENNSYLVANIA HEALTH CARE COST CONTAINMENT COUNCIL

JUNE 2005



The Pennsylvania Health Care Cost Containment Council (PHC4) was established as an independent state agency by the General Assembly and the Governor of the Commonwealth of Pennsylvania in 1986. To help improve the quality and restrain the cost of health care, PHC4 promotes health care competition through the collection, analysis and public dissemination of uniform cost and quality-related information.

Key Findings

- Total hip and knee replacements have steadily increased in Pennsylvania. Between 1993 and 2002 the number of knee replacements increased by 70.1 percent, and the number of total hip replacements increased by 48.6 percent.
- Readmissions due to deep joint infection or device problem resulted in approximately \$30 million in charges and 6,095 hospital days, those for blood clot (lung/leg) resulted in \$2.4 million in charges and 889 hospital days, and those for wound infection resulted in \$2.7 million in charges and 703 hospital days.
- The statewide complication rate for deep joint infection or device problem was 2.4 percent. The statewide blood clot (lung/leg) rate was 1.3 percent. For wound infection the statewide rate was 0.5 percent.
- In 2002 the average number of days a patient spent in the hospital following a total hip or knee replacement was 3.7 days. This does not include additional care, such as rehabilitative care, that, on average, added 7.7 days for the patients in this study.
- “Bilateral total joint replacements,” in which both knees or both hips are replaced during the same hospital stay under one anesthesia, have been more popular in recent years. Between 1993 and 2002, the percent of bilateral knee replacements in Pennsylvania nearly tripled – from 3.4 percent of all knee replacements to 9.0 percent. The percent of bilateral total hip replacements also increased, from 1.2 percent in 1993 to 2.2 percent in 2002.



Understanding the Report

Why is it important to look at total hip and knee replacements?

Total hip and knee replacements are frequently performed, costly surgeries. Over the last 10 years the number of joint replacements has continually increased. This increase is related to several factors: people are living longer, the proportion of elderly is increasing, and the incidence of arthritis – the number one reason for disability in United States – is increasing. During this time there have also been important changes to the devices used in joint replacement and the clinical management of joint replacements. There have been changes in hospital lengths of stay and subsequent inpatient rehabilitation hospital stays. While some studies have focused on smaller groups or population subsets, there is little information available from large-scale studies such as that contained in this analysis.

Given the many changes surrounding total hip and knee replacements, the Council chose to evaluate and report patient care outcomes for joint replacements performed in Pennsylvania. Current medical literature suggests that assessing patient outcomes, such as complications and readmissions, can provide important insights into the quality of care. Not only does this report provide information to consumers and payors of health care services, it is also a useful tool for hospitals and surgeons to use when examining their processes and considering changes that may improve quality of care.

What is joint replacement?

Joints provide motion and flexibility to the human frame. They are formed where two or more bones meet and are connected by tissue called cartilage. Healthy cartilage provides a

protective “cushion,” allowing smooth, low-friction movement of the joint. If the cartilage becomes damaged, the tissues around the joint become inflamed, causing pain. With time, the cartilage wears away, allowing the rough edges of bones to rub against each other, causing more pain.¹ To help alleviate this pain and improve functional status, a physician may recommend joint replacement.

Joint replacement is a major surgical procedure in which certain parts of a damaged or arthritic joint are removed and replaced with an artificial joint.² The artificial joint is designed to move like a normal, healthy joint and is generally composed of a metal piece that fits closely into a matching sturdy plastic piece. Plastic bone cement may be used to anchor the artificial joint into the bone. Joint replacements also can be implanted without cement when the artificial joint and the bone are designed to fit and lock together directly.³ While joint replacements are performed on other joints – including the ankle, foot, shoulder, elbow and fingers – total hip and knee replacements are the most common and can either be total or partial. Total hip, total knee, and partial knee replacements are primarily performed to treat arthritis and other forms of cartilage damage. Partial hip replacements are primarily related to the repair of hip fractures.

In a total hip replacement, the damaged ball (the upper end of the femur – often referred to as the thigh bone) is replaced by a metal ball attached to a metal stem fitted into the femur, and a plastic socket is implanted into the pelvis, replacing the damaged socket. In a knee replacement, the damaged ends of the bones and cartilage are replaced with metal and plastic surfaces that are shaped to restore knee movement and function.⁴ Surgery is performed using a variety of surgical techniques.

¹ Food and Drug Administration.

² WebMD.

³ American Academy of Orthopaedic Surgeons.

⁴ American Academy of Orthopaedic Surgeons.



The “traditional” or “open” technique involves making a larger incision compared to minimally invasive surgery, which may involve one or more smaller incisions. A computer may also be used to assist the surgeon during surgery.

After the joint replacement is completed, most patients stay in the hospital for a few days. The recovery period continues with rehabilitative care in various settings. The length of the recovery period depends on a patient’s general health, age and other factors, but many people can resume their normal activities within several weeks of surgery.

There are several reasons why someone may need a total hip or knee replacement. Osteoarthritis – a degenerative joint disease caused by the breakdown of cartilage – is the most common reason. Factors that can lead to damaged cartilage and osteoarthritis are conditions such as defective joints or cartilage present at birth, excessive body weight, joint trauma such as fractures, ligament tears and other injuries that have led to joint deterioration. Likewise, the symptoms of rheumatoid arthritis – a chronic inflammation of the joint lining, which causes pain, stiffness and swelling – may also be alleviated by joint replacement. Other reasons for joint replacement include loss of bone caused by poor blood supply and bone tumors;⁵ these conditions, however, are considered clinically complex and joint replacements due to these conditions are not included in this report.

⁵ Food and Drug Administration.

What is included in this report?

This report includes information on approximately 9,800 total hip replacements and 20,000 total or partial knee replacements performed in Pennsylvania between July 1, 2001 and June 30, 2002, at an average charge

of more than \$27,000 and \$26,000, respectively. Only the performance of hospitals and surgeons with 30 or more cases (hip and knee replacements combined) was evaluated to determine if outcomes were within normal limits, extremely high or extremely low.

Accounting for high-risk patients

Some patients who undergo joint replacements have more complex conditions than others. These conditions may be associated with the condition for which the joint replacement is being performed and/or other chronic diseases such as diabetes, heart disease or hypertension. In order to report fair comparisons among hospitals and surgeons, PHC4 developed a complex mathematical formula to “risk-adjust” the data, meaning that the formula takes into consideration differences among individual patients that had the potential to influence hospitals’ and surgeons’ outcomes. Risk-adjusting the data is important because sicker patients might be more likely to develop complications following joint replacements, be readmitted, or stay in the hospital longer. A comprehensive description of how these adjustments are made can be found in the Technical Notes document posted on PHC4’s Web site at www.phc4.org. With the exception of Number of Cases and Average Hospital Charge, all of the following measures are adjusted for differences in patient risk factors.

What is measured in this report and why are these measures important?

- **Total Cases** – This is the number of total hip and total or partial knee replacements analyzed in this report. The number of cases gives an idea of the experience that



hospitals and surgeons have in performing these types of procedures. It is important to note, however, that some total hip and knee replacement patients were not included in this analysis, for example, those that had a replacement due to a bone fracture or bone cancer or those who had a “revision” of a previously replaced joint. Therefore, the actual number of procedures performed by a hospital or surgeon may be higher. Also, this report does not include information about partial hip replacements, which are often performed to treat conditions other than those treated by total hip replacements.

Complications

- **Deep Joint Infection or Device**

Problem – Deep joint infection or problems with the device are very serious and may ultimately result in the removal of the implanted joint. The statistical ratings in this measure represent whether the percentage of total hip or knee replacement patients who were treated for a deep joint infection or a device problem during the initial hospitalization, or in a subsequent general acute care hospitalization that was within 365 days of the original joint replacement, was within normal limits, extremely high or extremely low. Because deep joint infections and device problems generally do not surface early on, this measure follows total hip and knee replacement patients for a full year.

- **Blood Clot Lung/Leg** – Blood clots can occur when a vein is damaged or when decreased physical activity causes the flow

of blood to slow down or stop. This measure includes blood clots in the lung (pulmonary embolism) or leg (deep vein thrombosis). The statistical ratings represent whether or not the percentage of total hip or knee replacement patients who had a blood clot in their lung or leg during the initial hospitalization, or in a subsequent general acute care hospitalization that was within 45 days of the original joint replacement, was within normal limits, extremely high or extremely low. Precautionary measures – such as the use of blood thinning medications (anticoagulants), elastic stockings and exercises to increase blood flow in the leg muscles – may help to avoid blood clots. Because blood clots most often surface either a few days following surgery or a few weeks later, this analysis includes a 45-day follow-up period on blood clots that may be a complication of the joint replacement.

- **Wound Infection** – Wound infections are caused by bacteria contaminating the surgical incision and may involve different layers of the skin and soft tissue. This measure is reported for hospitals only. It does not include deep joint infections, which are captured under the deep joint infection or device problem measure. The statistical ratings represent whether or not the percentage of total hip or knee replacement patients who had a wound infection during the initial hospitalization or in a subsequent general acute care hospitalization that was within 30 days of

More Data on PHC4's Web Site

Additional information is posted on the PHC4 Web site at www.phc4.org:

- Numbers behind the outcome figures and symbols.
- Technical Notes.
- Hospital and surgeon comments about the report.



the original joint replacement, was within normal limits, extremely high or extremely low. High quality care may reduce the risk of infection, which in turn may lessen the risk of readmissions and/or deep joint infections.

Other Measures

- **Readmission (within 30 days)** – Some patients are readmitted to the hospital following joint replacement surgery. The statistical ratings represent whether or not the percentage of total hip or knee replacement patients who were readmitted to a Pennsylvania hospital within 30 days of being discharged from the hospital where the original total hip or knee replacement was performed, was within normal limits, extremely high or extremely low. Readmissions may be planned or unplanned. However, whether the readmission is planned or unplanned cannot be distinguished in the data submitted to PHC4, so any readmission, planned or unplanned, was included in this measure. Readmission rates are important from both a quality of care and cost standpoint. While some readmissions are planned and/or unavoidable, high quality care may lessen the need for subsequent hospitalizations.
- **Post-Operative Length of Stay** – This measure represents how long a patient stayed in the hospital after undergoing a total hip or knee replacement. Length of stay is reported in average days. The post-operative length of stay represents the immediate recovery period in the hospital. Upon discharge, patients often receive rehabilitative care in other settings.
- **Average Hospital Charge** – The amount a hospital bills for a patient’s care is known as the charge. The charges do not include professional fees (e.g., physician fees) or other additional post-discharge costs, such as rehabilitation treatment, long term care and/or home health care. Hospitals generally do not receive full reimbursement of their charges because insurance companies or other large purchasers of health care services generally negotiate discounts with hospitals. The amount collected by the hospital, therefore, may differ substantially from the charge. Hospital charges are averaged and regional adjustments were made because charge components often vary by regions of the state. Despite their limitations, charges are a commonly reported surrogate for health care costs.

Uses of the report

This report can be used as a tool to examine short-term hospital and patient outcomes for total hip and knee replacements. It is not intended to be a sole source of information in making decisions about joint replacements, nor should it be used to generalize about the overall quality of care provided by a hospital or a surgeon. Readers of this report should use it in discussions with their physicians who can answer specific questions and concerns about total hip and knee replacements.

- **Patients/consumers** can use this report to aid in making decisions about where and with whom to seek treatment involving total hip and knee replacements. This report should be used in conjunction with a physician or other experienced health care provider when making decisions about joint replacements.



- **Group benefits purchasers/insurers** can use this report as part of a process to determine which hospitals and surgeons are providing high quality joint replacement care for their employees, subscribers, members or participants.
- **Health care providers** can use this report to compare their results to other providers around the state and as an aid in identifying opportunities for quality improvement and cost containment.
- **Policy makers/public officials** can use this report to enhance their understanding of health care issues, to ask insightful questions, to raise public awareness of important issues and to help constituents identify quality health care options.
- **Everyone** can use this information to better understand the delivery of care options in Pennsylvania and raise important questions about why differences exist among hospitals and surgeons.

Where does the data come from?

Pennsylvania hospitals are required by law to submit certain information to PHC4. The data used for this analysis was submitted by acute care hospitals in Pennsylvania that perform total hip and/or knee replacements. It encompasses inpatient hospital discharges from July 1, 2001 to June 30, 2002 in which the patient underwent a total hip or knee replacement. The information that hospitals are required to submit includes data used to indicate the health status of the patient and the treatments received. Data from subsequent hospitalizations was also used to identify deep joint infections or device problems, blood clots

in lung/leg, wound infections and readmissions occurring within specified timeframes following the total hip or knee replacement.

All of the data included in the report was subject to a multi-phase verification process by PHC4 and the hospitals submitting the data. Hospitals were requested to assure the accuracy of the data for the hospitalizations in which the joint replacement was performed and to confirm that all cases had the correct surgeon assignment. Surgeons were requested to perform a patient level review of these records and then attest to the accuracy of the data and surgeon assignment.

To further ensure the quality of the data included in this report, PHC4 contracted with an independent auditing company to determine the reliability of data submitted to PHC4 compared to the information included in the medical record. For additional information, see the Technical Notes associated with this report on PHC4's Web site at www.phc4.org.

Hospitals and surgeons may have commented on their data. These comments are posted on the PHC4 Web site.

Limitations of the report

Many surgeons consider improved functional status – the measure of an individual's level of independence in performing normal activities of life – to be the gold standard of joint replacement outcomes. Because functional status is not included in the information that hospitals are required to send to the Council, it is not covered in this report.

The longevity of the joint replacements, another important aspect of measuring treatment effectiveness, is not captured in this report. Many joints have been found to be functioning successfully after 10 years, and in



Total Hip and Knee Replacements

| | |
|---|----------|
| Total number of cases: | 29,710 |
| Total number of hip cases: | 9,769 |
| Total number of knee cases: | 19,941 |
| Deep joint infection or device problem rate: | 2.4% |
| Blood clot (lung/leg) rate:..... | 1.3% |
| Wound infection rate: | 0.5% |
| Readmission rate:..... | 4.4% |
| Average post-operative length of stay: | 3.7 days |
| Average hospital charge for total hip replacement | \$27,759 |
| Average hospital charge for knee replacement | \$26,015 |

What do the symbols mean?

The symbols in this report represent the patient outcome results of hospitals and surgeons who performed total hip and knee replacements. A statistical test is done to determine whether differences in the results are simply due to chance or random variation. A difference is called “statistically significant” when there is a 95 percent confidence level that the difference is not likely to result from chance or random variation. Using wound infection as an example:

- Lower than expected (meaning that there were fewer wound infections than expected after accounting for how sick the patients were in that hospital or for that surgeon)
- Same as expected (meaning that the number of wound infections was the same as expected after accounting for how sick the patients were in that hospital or for that surgeon)
- Higher than expected (meaning that there were more wound infections than expected after accounting for how sick the patients were in that hospital or for that surgeon)

some cases as long as 20 years. With current improvements in materials, prosthetic designs and surgical techniques, artificial joints implanted today may last even longer.

The data used in this analysis is a subset of information documented in the patient’s medical record and hospital’s billing record. Additional data may be useful to better understand differences in the care process from one hospital to another and one surgeon to another even within the same hospital. Despite careful efforts by hospitals, surgeons and Council staff, variability may still exist due to differences in the diagnostic tests used, interpretation of test results and in documentation. Finally, orthopaedics is a specialty of immense breadth and variety. The field of orthopaedics encompasses a wide variety of diseases and conditions, including but not limited to, fractures and dislocations, torn ligaments, tendon injuries, ruptured discs and low back pain, bone tumors, muscular dystrophy and cerebral palsy. Because this report focuses on total hip and knee replacements, it may include only a portion of the work that an orthopaedic surgeon performs.

Acknowledgements

PHC4 wishes to acknowledge and thank the Pennsylvania hospitals and surgeons who participated in the data collection and verification process used for this report.

PHC4 also wishes to thank our Technical Advisory Group and the orthopaedic surgeons who advised us during the development of this report.



Hospitals

| Hospital | Hip Cases | Knee Cases | Total Cases | Complications | | | Readmission | Post-op Length of Stay | Average Hospital Charge | |
|---------------------------|--------------|---------------|---------------|--|---------------------|-----------------|-------------|------------------------|-------------------------|-----------------|
| | | | | Deep Joint Infection or Device Problem | Blood Clot Lung/Leg | Wound Infection | | | Hip | Knee |
| Statewide | 9,769 | 19,941 | 29,710 | | | | | 3.7 | \$27,759 | \$26,015 |
| Abington Memorial | 146 | 204 | 350 | ⊙ | ⊙ | ⊙ | ⊙ | 3.8 | \$58,884 | \$46,622 |
| Albert Einstein | 56 | 125 | 181 | ⊙ | ⊙ | ⊙ | ○ | 2.7 | \$40,073 | \$42,321 |
| Aliquippa Community | 12 | 26 | 38 | ⊙ | ⊙ | ⊙ | ● | 2.9 | \$28,180 | \$24,168 |
| Alle-Kiski | 84 | 222 | 306 | ⊙ | ⊙ | ⊙ | ○ | 3.8 | \$24,745 | \$21,063 |
| Allegheny General | 133 | 289 | 422 | ⊙ | ● | ⊙ | ⊙ | 4.6 | \$29,477 | \$23,370 |
| Altoona | 55 | 179 | 234 | ⊙ | ⊙ | ⊙ | ⊙ | 3.3 | \$21,733 | \$20,239 |
| Armstrong County Memorial | 15 | 61 | 76 | ⊙ | ⊙ | ⊙ | ⊙ | 3.6 | \$41,476 | \$36,115 |
| Bloomsburg | 24 | 93 | 117 | ⊙ | ⊙ | ⊙ | ⊙ | 3.2 | \$15,840 | \$16,687 |
| Bon Secours Holy Family | 44 | 115 | 159 | ⊙ | ⊙ | ⊙ | ⊙ | 2.9 | \$16,985 | \$16,379 |
| Bradford Regional | 11 | 23 | 34 | ⊙ | ⊙ | ⊙ | ⊙ | 3.7 | \$24,573 | \$22,770 |
| Brandywine | 43 | 75 | 118 | ⊙ | ⊙ | ⊙ | ⊙ | 3.6 | \$33,974 | \$33,512 |
| Brownsville General | 8 | 31 | 39 | ● | ⊙ | ⊙ | ⊙ | 3.3 | \$24,373 | \$21,958 |
| Butler Memorial | 50 | 121 | 171 | ● | ⊙ | ⊙ | ⊙ | 3.8 | \$13,424 | \$11,312 |
| Canonsburg General | 36 | 87 | 123 | ⊙ | ⊙ | ⊙ | ⊙ | 3.4 | \$19,643 | \$17,916 |
| Carlisle Regional | 54 | 150 | 204 | ● | ⊙ | ● | ⊙ | 4.1 | \$31,279 | \$30,404 |
| Central Montgomery | 26 | 59 | 85 | ● | ⊙ | ⊙ | ⊙ | 4.7 | \$32,738 | \$31,552 |
| Centre Community | 146 | 284 | 430 | ⊙ | ⊙ | ⊙ | ⊙ | 3.3 | \$19,938 | \$18,838 |
| Chambersburg | 70 | 141 | 211 | ⊙ | ⊙ | ⊙ | ● | 3.9 | \$18,531 | \$17,446 |
| Charles Cole Memorial | 18 | 45 | 63 | ⊙ | ⊙ | ⊙ | ⊙ | 3.4 | \$23,434 | \$17,548 |
| Chester County | 48 | 88 | 136 | ⊙ | ⊙ | ⊙ | ⊙ | 3.9 | \$20,615 | \$17,639 |
| Chestnut Hill | 27 | 41 | 68 | ⊙ | ⊙ | ⊙ | ⊙ | 4.9 | \$43,005 | \$51,634 |
| Clarion | 29 | 58 | 87 | ⊙ | ⊙ | ⊙ | ⊙ | 2.8 | \$14,421 | \$15,958 |
| Clearfield | 20 | 35 | 55 | ⊙ | ⊙ | ● | ⊙ | 4.1 | \$25,875 | \$24,949 |
| Community Lancaster | 24 | 41 | 65 | ● | ⊙ | ⊙ | ⊙ | 3.8 | \$24,593 | \$23,442 |
| Community/Scranton | 83 | 163 | 246 | ⊙ | ⊙ | ⊙ | ⊙ | 3.9 | \$29,940 | \$26,469 |
| Conemaugh Valley Memorial | 89 | 194 | 283 | ⊙ | ⊙ | ⊙ | ⊙ | 4.3 | \$28,944 | \$27,400 |
| Crozer-Chester | 63 | 181 | 244 | ⊙ | ⊙ | ⊙ | ⊙ | 3.6 | \$50,664 | \$49,799 |

The complications, readmission, and length of stay results account for varying illness levels among patients.

Complications were counted when a deep joint infection or device problem occurred within 365 days, a blood clot occurred within 45 days, and/or a wound infection occurred within 30 days of the surgery. A readmission was counted when a patient was readmitted to an acute care hospital for any reason (except rehabilitation) within 1-30 days of the discharge date of the hospitalization in which the hip or knee replacement was performed. Length of stay is the average number of days spent in the hospital following the surgery.

Only hospitals with 30 or more hip and knee replacements (combined) are reported here. Case counts for those with fewer than 30 cases are on page 24.

- Lower than expected
- ⊙ Same as expected
- Higher than expected

Hospitals



| Hospital | Hip Cases | Knee Cases | Total Cases | Complications | | | Readmission | Post-op Length of Stay | Average Hospital Charge | |
|--------------------------|-----------|------------|-------------|--|---------------------|-----------------|-------------|------------------------|-------------------------|----------|
| | | | | Deep Joint Infection or Device Problem | Blood Clot Lung/Leg | Wound Infection | | | Hip | Knee |
| Delaware County Memorial | 63 | 162 | 225 | ⊙ | ⊙ | ⊙ | ⊙ | 5.5 | \$62,126 | \$47,112 |
| Doylestown | 79 | 124 | 203 | ⊙ | ⊙ | ⊙ | ● | 2.9 | \$35,488 | \$33,860 |
| DuBois Regional | 45 | 79 | 124 | ⊙ | ⊙ | ⊙ | ⊙ | 3.1 | \$19,177 | \$19,229 |
| Easton | 57 | 101 | 158 | ⊙ | ● | ⊙ | ○ | 3.4 | \$22,755 | \$24,090 |
| Elk Regional | 37 | 114 | 151 | ⊙ | ● | ⊙ | ⊙ | 2.9 | \$12,594 | \$12,469 |
| Ellwood City | 11 | 35 | 46 | ⊙ | ⊙ | ⊙ | ⊙ | 3.6 | \$20,126 | \$19,616 |
| Ephrata Community | 51 | 102 | 153 | ⊙ | ⊙ | ● | ⊙ | 4.0 | \$17,964 | \$16,068 |
| Evangelical Community | 46 | 146 | 192 | ⊙ | ⊙ | ● | ⊙ | 3.3 | \$14,091 | \$11,243 |
| Forbes Regional | 101 | 228 | 329 | ⊙ | ⊙ | ⊙ | ⊙ | 3.7 | \$26,222 | \$26,451 |
| Frankford | 53 | 163 | 216 | ⊙ | ⊙ | ⊙ | ⊙ | 3.8 | \$38,627 | \$59,906 |
| Frick | 8 | 49 | 57 | ⊙ | ⊙ | ● | ● | 3.2 | \$17,869 | \$14,158 |
| Geisinger Wyoming Valley | 69 | 135 | 204 | ○ | ⊙ | ⊙ | ⊙ | 3.7 | \$18,214 | \$16,807 |
| Geisinger/Danville | 150 | 249 | 399 | ⊙ | ⊙ | ⊙ | ⊙ | 4.0 | \$17,988 | \$17,538 |
| Gettysburg | 26 | 56 | 82 | ⊙ | ⊙ | ⊙ | ⊙ | 3.3 | \$17,897 | \$18,601 |
| Gnaden Huetten Memorial | 8 | 32 | 40 | ⊙ | ⊙ | ⊙ | ⊙ | 3.2 | \$13,763 | \$16,402 |
| Good Samaritan Regional | 13 | 26 | 39 | ⊙ | ⊙ | ⊙ | ⊙ | 6.3 | \$19,773 | \$20,475 |
| Good Samaritan/Lebanon | 55 | 151 | 206 | ⊙ | ● | ⊙ | ⊙ | 3.5 | \$19,667 | \$17,704 |
| Graduate | 13 | 75 | 88 | ⊙ | ⊙ | ● | ⊙ | 5.2 | NR | \$97,031 |
| Grand View | 77 | 159 | 236 | ⊙ | ⊙ | ⊙ | ⊙ | 3.6 | \$24,947 | \$26,600 |
| Greene County Memorial | 9 | 27 | 36 | ⊙ | ⊙ | ⊙ | ⊙ | 4.4 | \$16,438 | \$14,696 |
| Hahnemann University | 59 | 122 | 181 | ⊙ | ⊙ | ⊙ | ⊙ | 4.0 | \$79,849 | \$90,670 |
| Hamot | 126 | 356 | 482 | ● | ○ | ⊙ | ⊙ | 3.0 | \$27,690 | \$24,752 |
| Hanover | 43 | 133 | 176 | ⊙ | ⊙ | ⊙ | ● | 4.0 | \$21,221 | \$18,157 |
| Hazleton General | 21 | 39 | 60 | ⊙ | ⊙ | ⊙ | ⊙ | 3.8 | \$21,810 | \$25,701 |
| Holy Redeemer | 67 | 189 | 256 | ⊙ | ⊙ | ⊙ | ⊙ | 3.2 | \$51,508 | \$51,659 |
| Holy Spirit | 98 | 220 | 318 | ⊙ | ⊙ | ⊙ | ⊙ | 4.1 | \$18,710 | \$17,882 |
| Hospital University PA | 28 | 23 | 51 | ⊙ | ⊙ | ⊙ | ⊙ | 3.9 | \$56,404 | \$46,642 |
| Indiana Regional | 56 | 97 | 153 | ○ | ⊙ | ⊙ | ⊙ | 3.4 | \$26,592 | \$23,594 |

- Lower than expected
- ⊙ Same as expected
- Higher than expected
- NR Too few cases to report

The complications, readmission, and length of stay results account for varying illness levels among patients.

Complications were counted when a deep joint infection or device problem occurred within 365 days, a blood clot occurred within 45 days, and/or a wound infection occurred within 30 days of the surgery. A readmission was counted when a patient was readmitted to an acute care hospital for any reason (except rehabilitation) within 1-30 days of the discharge date of the hospitalization in which the hip or knee replacement was performed. Length of stay is the average number of days spent in the hospital following the surgery.

Only hospitals with 30 or more hip and knee replacements (combined) are reported here. Case counts for those with fewer than 30 cases are on page 24.



Hospitals

| Hospital | Hip Cases | Knee Cases | Total Cases | Complications | | | Readmission | Post-op Length of Stay | Average Hospital Charge | |
|--------------------------|-----------|------------|-------------|--|---------------------|-----------------|-------------|------------------------|-------------------------|----------|
| | | | | Deep Joint Infection or Device Problem | Blood Clot Lung/Leg | Wound Infection | | | Hip | Knee |
| J C Blair Memorial | 19 | 29 | 48 | ⊙ | ⊙ | ⊙ | ⊙ | 4.6 | \$22,309 | \$21,553 |
| Jameson Memorial | 35 | 100 | 135 | ⊙ | ⊙ | ⊙ | ⊙ | 4.0 | \$21,018 | \$18,305 |
| Jeanes | 50 | 95 | 145 | ⊙ | ● | ⊙ | ⊙ | 4.4 | \$39,877 | \$60,154 |
| Jeannette Memorial | 18 | 61 | 79 | ⊙ | ⊙ | ⊙ | ⊙ | 3.4 | \$23,792 | \$24,531 |
| Jefferson Regional | 137 | 302 | 439 | ⊙ | ⊙ | ⊙ | ⊙ | 4.0 | \$18,863 | \$17,610 |
| Lancaster General | 207 | 417 | 624 | ● | ⊙ | ⊙ | ⊙ | 3.5 | \$16,195 | \$15,094 |
| Lancaster Regional | 53 | 127 | 180 | ⊙ | ⊙ | ⊙ | ⊙ | 3.6 | \$35,023 | \$33,088 |
| Latrobe Area | 65 | 142 | 207 | ⊙ | ⊙ | ⊙ | ⊙ | 3.5 | \$19,231 | \$17,985 |
| Lehigh Valley | 265 | 436 | 701 | ○ | ⊙ | ⊙ | ⊙ | 3.2 | \$25,608 | \$22,934 |
| Lehigh Valley/Muhlenberg | 50 | 78 | 128 | ⊙ | ⊙ | ⊙ | ⊙ | 3.6 | \$21,156 | \$20,845 |
| Lewistown | 16 | 33 | 49 | ⊙ | ⊙ | ⊙ | ⊙ | 3.6 | \$18,498 | \$17,166 |
| Main Line Bryn Mawr | 147 | 275 | 422 | ⊙ | ⊙ | ⊙ | ⊙ | 3.6 | \$25,906 | \$29,182 |
| Main Line Lankenau | 51 | 86 | 137 | ⊙ | ⊙ | ⊙ | ⊙ | 4.1 | \$31,010 | \$32,234 |
| Main Line Paoli | 78 | 162 | 240 | ⊙ | ⊙ | ⊙ | ⊙ | 3.4 | \$30,096 | \$29,508 |
| Marian Community | 17 | 48 | 65 | ⊙ | ⊙ | ⊙ | ⊙ | 3.7 | \$15,549 | \$17,271 |
| Meadville | 59 | 138 | 197 | ⊙ | ⊙ | ⊙ | ⊙ | 2.8 | \$17,072 | \$18,241 |
| Medical Center Beaver | 75 | 180 | 255 | ⊙ | ● | ⊙ | ● | 3.9 | \$15,873 | \$14,880 |
| Memorial York | 53 | 95 | 148 | ⊙ | ⊙ | ⊙ | ⊙ | 3.4 | \$15,692 | \$15,485 |
| Memorial/Towanda | 24 | 60 | 84 | ⊙ | ⊙ | ⊙ | ⊙ | 3.6 | \$30,745 | \$32,923 |
| Mercy Fitzgerald | 16 | 46 | 62 | ⊙ | ⊙ | ⊙ | ⊙ | 3.0 | \$40,392 | \$37,968 |
| Mercy Pittsburgh | 61 | 100 | 161 | ⊙ | ⊙ | ⊙ | ⊙ | 3.8 | \$31,166 | \$28,341 |
| Mercy Suburban | 14 | 36 | 50 | ⊙ | ⊙ | ⊙ | ⊙ | 4.0 | \$30,873 | \$29,179 |
| Mercy/Scranton | 56 | 113 | 169 | ⊙ | ⊙ | ⊙ | ⊙ | 3.8 | \$24,642 | \$22,287 |
| Mercy/Wilkes-Barre | 34 | 65 | 99 | ⊙ | ⊙ | ⊙ | ⊙ | 3.4 | \$25,676 | \$22,940 |
| Milton S Hershey | 99 | 124 | 223 | ⊙ | ⊙ | ⊙ | ⊙ | 2.4 | \$18,693 | \$15,757 |
| Monongahela Valley | 37 | 161 | 198 | ⊙ | ⊙ | ⊙ | ● | 3.5 | \$21,393 | \$24,248 |
| Montgomery | 65 | 211 | 276 | ○ | ⊙ | ⊙ | ⊙ | 3.9 | \$32,482 | \$28,160 |
| Moses Taylor | 61 | 174 | 235 | ⊙ | ⊙ | ⊙ | ⊙ | 3.5 | \$14,510 | \$14,440 |

The complications, readmission, and length of stay results account for varying illness levels among patients.

Complications were counted when a deep joint infection or device problem occurred within 365 days, a blood clot occurred within 45 days, and/or a wound infection occurred within 30 days of the surgery. A readmission was counted when a patient was readmitted to an acute care hospital for any reason (except rehabilitation) within 1-30 days of the discharge date of the hospitalization in which the hip or knee replacement was performed. Length of stay is the average number of days spent in the hospital following the surgery.

Only hospitals with 30 or more hip and knee replacements (combined) are reported here. Case counts for those with fewer than 30 cases are on page 24.

- Lower than expected
- ⊙ Same as expected
- Higher than expected

Hospitals



| Hospital | Hip Cases | Knee Cases | Total Cases | Complications | | | Readmission | Post-op Length of Stay | Average Hospital Charge | |
|-------------------------|-----------|------------|-------------|--|---------------------|-----------------|-------------|------------------------|-------------------------|----------|
| | | | | Deep Joint Infection or Device Problem | Blood Clot Lung/Leg | Wound Infection | | | Hip | Knee |
| Nason | 8 | 37 | 45 | ⊙ | ⊙ | ⊙ | ⊙ | 4.1 | \$15,347 | \$14,577 |
| Nazareth | 16 | 68 | 84 | ⊙ | ⊙ | ⊙ | ⊙ | 2.8 | \$21,683 | \$25,260 |
| Ohio Valley General | 34 | 69 | 103 | ⊙ | ⊙ | ⊙ | ⊙ | 3.1 | \$23,617 | \$19,471 |
| Pennsylvania | 504 | 1,099 | 1,603 | ⊙ | ○ | ⊙ | ⊙ | 3.7 | \$46,133 | \$41,489 |
| Phoenixville | 37 | 63 | 100 | ⊙ | ⊙ | ● | ⊙ | 4.4 | \$32,361 | \$30,114 |
| Pinnacle Health | 262 | 687 | 949 | ● | ⊙ | ⊙ | ⊙ | 3.5 | \$21,218 | \$21,656 |
| Pocono | 36 | 38 | 74 | ⊙ | ● | ⊙ | ⊙ | 3.7 | \$19,149 | \$21,096 |
| Pottstown Memorial | 27 | 52 | 79 | ⊙ | ⊙ | ⊙ | ⊙ | 4.1 | \$48,065 | \$41,851 |
| Pottsville Warne Clinic | 48 | 92 | 140 | ⊙ | ⊙ | ⊙ | ○ | 4.0 | \$19,120 | \$18,202 |
| Presbyterian | 24 | 57 | 81 | ⊙ | ⊙ | ⊙ | ⊙ | 3.3 | \$32,942 | \$29,772 |
| Reading | 203 | 470 | 673 | ⊙ | ○ | ⊙ | ○ | 3.6 | \$13,032 | \$11,388 |
| Riddle Memorial | 40 | 139 | 179 | ⊙ | ⊙ | ⊙ | ⊙ | 4.0 | \$36,229 | \$36,571 |
| Robert Packer | 115 | 160 | 275 | ⊙ | ⊙ | ⊙ | ⊙ | 3.1 | \$16,176 | \$14,955 |
| Roxborough Memorial | 8 | 28 | 36 | ⊙ | ⊙ | ⊙ | ⊙ | 3.5 | \$27,471 | \$23,960 |
| Sacred Heart/Allentown | 55 | 124 | 179 | ⊙ | ⊙ | ⊙ | ○ | 3.9 | \$21,252 | \$19,058 |
| Saint Vincent Health | 113 | 166 | 279 | ● | ⊙ | ⊙ | ● | 3.4 | \$22,634 | \$23,070 |
| Sewickley Valley | 211 | 302 | 513 | ○ | ⊙ | ⊙ | ⊙ | 4.0 | \$21,690 | \$20,500 |
| Shamokin Area Community | 11 | 32 | 43 | ⊙ | ⊙ | ⊙ | ⊙ | 3.2 | \$16,986 | \$15,109 |
| Sharon Regional | 57 | 126 | 183 | ⊙ | ⊙ | ⊙ | ⊙ | 3.6 | \$30,064 | \$28,145 |
| Soldiers & Sailors | 17 | 27 | 44 | ● | ⊙ | ⊙ | ⊙ | 4.6 | \$22,237 | \$21,134 |
| Somerset Center Health | 9 | 24 | 33 | ⊙ | ⊙ | ⊙ | ⊙ | 4.8 | \$18,565 | \$17,940 |
| St Clair Memorial | 99 | 201 | 300 | ⊙ | ⊙ | ⊙ | ⊙ | 4.3 | \$16,993 | \$16,748 |
| St Joseph/Reading | 71 | 277 | 348 | ● | ● | ⊙ | ● | 2.7 | \$19,474 | \$15,861 |
| St Luke's Miners | 2 | 30 | 32 | ● | ⊙ | ⊙ | ⊙ | 5.1 | NR | \$29,090 |
| St Luke's Quakertown | 17 | 43 | 60 | ⊙ | ⊙ | ⊙ | ⊙ | 4.5 | \$29,791 | \$27,110 |
| St Luke's/Bethlehem | 116 | 263 | 379 | ⊙ | ● | ⊙ | ⊙ | 3.9 | \$19,276 | \$19,658 |
| St Mary | 45 | 69 | 114 | ⊙ | ⊙ | ⊙ | ⊙ | 4.4 | \$27,976 | \$28,924 |
| Suburban General/Pgh | 29 | 47 | 76 | ⊙ | ⊙ | ⊙ | ⊙ | 3.8 | \$22,903 | \$15,584 |

- Lower than expected
- ⊙ Same as expected
- Higher than expected
- NR Too few cases to report

The complications, readmission, and length of stay results account for varying illness levels among patients.

Complications were counted when a deep joint infection or device problem occurred within 365 days, a blood clot occurred within 45 days, and/or a wound infection occurred within 30 days of the surgery. A readmission was counted when a patient was readmitted to an acute care hospital for any reason (except rehabilitation) within 1-30 days of the discharge date of the hospitalization in which the hip or knee replacement was performed. Length of stay is the average number of days spent in the hospital following the surgery.

Only hospitals with 30 or more hip and knee replacements (combined) are reported here. Case counts for those with fewer than 30 cases are on page 24.



Hospitals

| Hospital | Hip Cases | Knee Cases | Total Cases | Complications | | | Readmission | Post-op Length of Stay | Average Hospital Charge | |
|--------------------------|-----------|------------|-------------|--|---------------------|-----------------|-------------|------------------------|-------------------------|----------|
| | | | | Deep Joint Infection or Device Problem | Blood Clot Lung/Leg | Wound Infection | | | Hip | Knee |
| Sunbury Community | 8 | 69 | 77 | ⊙ | ⊙ | ⊙ | ⊙ | 3.3 | \$19,485 | \$17,575 |
| Temple East/Northeastern | 12 | 55 | 67 | ⊙ | ● | ⊙ | ⊙ | 4.4 | \$35,416 | \$37,951 |
| Temple Lower Bucks | 16 | 56 | 72 | ⊙ | ⊙ | ⊙ | ⊙ | 3.6 | \$43,709 | \$39,389 |
| Temple University | 44 | 90 | 134 | ● | ⊙ | ⊙ | ⊙ | 4.8 | \$66,542 | \$72,293 |
| Thomas Jefferson Univ | 992 | 830 | 1,822 | ○ | ● | ⊙ | ⊙ | 3.8 | \$39,217 | \$46,093 |
| Uniontown | 53 | 134 | 187 | ⊙ | ⊙ | ⊙ | ⊙ | 4.0 | \$11,466 | \$12,791 |
| United Community | 12 | 47 | 59 | ⊙ | ⊙ | ⊙ | ⊙ | 4.2 | \$23,415 | \$21,610 |
| UPMC Braddock | 21 | 24 | 45 | ⊙ | ⊙ | ⊙ | ⊙ | 3.4 | \$16,776 | \$16,664 |
| UPMC Horizon | 106 | 291 | 397 | ⊙ | ⊙ | ⊙ | ⊙ | 4.3 | \$17,229 | \$16,830 |
| UPMC Lee Regional | 53 | 143 | 196 | ⊙ | ● | ⊙ | ⊙ | 3.8 | \$21,582 | \$22,706 |
| UPMC McKeesport | 25 | 75 | 100 | ⊙ | ⊙ | ⊙ | ⊙ | 3.5 | \$16,406 | \$14,480 |
| UPMC Northwest | 37 | 80 | 117 | ⊙ | ⊙ | ⊙ | ⊙ | 2.9 | \$13,960 | \$12,734 |
| UPMC Passavant | 93 | 206 | 299 | ⊙ | ⊙ | ⊙ | ⊙ | 3.4 | \$21,588 | \$22,112 |
| UPMC Presbyterian | 38 | 78 | 116 | ⊙ | ⊙ | ⊙ | ⊙ | 3.5 | \$52,565 | \$37,386 |
| UPMC Shadyside | 249 | 382 | 631 | ⊙ | ⊙ | ⊙ | ⊙ | 3.7 | \$41,635 | \$37,946 |
| UPMC South Side | 28 | 94 | 122 | ⊙ | ⊙ | ⊙ | ⊙ | 3.1 | \$19,379 | \$16,501 |
| UPMC St Margaret | 120 | 328 | 448 | ⊙ | ⊙ | ⊙ | ⊙ | 3.9 | \$22,771 | \$19,523 |
| Warminster | 29 | 62 | 91 | ⊙ | ⊙ | ⊙ | ● | 3.3 | \$56,438 | \$61,957 |
| Warren General | 33 | 49 | 82 | ⊙ | ⊙ | ⊙ | ⊙ | 3.9 | \$32,466 | \$34,609 |
| Washington | 82 | 218 | 300 | ⊙ | ⊙ | ⊙ | ⊙ | 3.4 | \$19,195 | \$18,620 |
| Wayne Memorial | 11 | 24 | 35 | ⊙ | ⊙ | ⊙ | ⊙ | 5.2 | \$22,795 | \$23,940 |
| Waynesboro | 11 | 30 | 41 | ⊙ | ⊙ | ⊙ | ⊙ | 3.2 | \$16,468 | \$16,134 |
| Western Pennsylvania | 185 | 239 | 424 | ⊙ | ⊙ | ⊙ | ○ | 3.6 | \$26,988 | \$23,967 |
| Westmoreland Regional | 85 | 168 | 253 | ⊙ | ⊙ | ⊙ | ⊙ | 3.8 | \$21,308 | \$17,477 |
| Williamsport | 116 | 289 | 405 | ○ | ⊙ | ⊙ | ⊙ | 3.3 | \$18,100 | \$19,853 |
| WVHCS | 69 | 150 | 219 | ⊙ | ● | ⊙ | ⊙ | 3.9 | \$27,003 | \$25,561 |
| York | 126 | 270 | 396 | ⊙ | ⊙ | ● | ⊙ | 3.9 | \$14,703 | \$15,371 |

The complications, readmission, and length of stay results account for varying illness levels among patients.

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Only hospitals with 30 or more hip and knee replacements (combined) are reported here. Case counts for those with fewer than 30 cases are on page 24.

| | |
|---|----------------------|
| ○ | Lower than expected |
| ⊙ | Same as expected |
| ● | Higher than expected |

Surgeons



| Surgeon | Hip Cases | Knee Cases | Total Cases | Complications | | Readmission | Post-op Length of Stay |
|---------------------------|-----------|------------|-------------|--|---------------------|-------------|------------------------|
| | | | | Deep Joint Infection or Device Problem | Blood Clot Lung/Leg | | |
| Abraham, William D. | 16 | 24 | 40 | ○ | ○ | ○ | 3.8 |
| Agnew, D. Kelly | 17 | 60 | 77 | ○ | ○ | ○ | 3.3 |
| Allardyce, Thomas J. | 27 | 33 | 60 | ○ | ○ | ○ | 3.6 |
| Armstrong, Robert | 54 | 94 | 148 | ○ | ○ | ○ | 2.6 |
| Avallone, John A. | 6 | 27 | 33 | ○ | ○ | ○ | 4.1 |
| Avolio Jr., Armando | 15 | 51 | 66 | ○ | ○ | ○ | 4.1 |
| Bailey, John H. | 20 | 43 | 63 | ○ | ○ | ○ | 2.9 |
| Baker, David C. | 9 | 38 | 47 | ● | ● | ○ | 4.5 |
| Baker, Robert H. | 7 | 24 | 31 | ○ | ○ | ○ | 6.8 |
| Balasubramanian, Easwaran | 15 | 58 | 73 | ○ | ● | ○ | 4.4 |
| Balog, Balint | 16 | 27 | 43 | ○ | ● | ○ | 3.5 |
| Balsamo, Anthony J. | 26 | 54 | 80 | ○ | ○ | ○ | 3.3 |
| Baron, Scott L. | 33 | 107 | 140 | ○ | ○ | ○ | 3.7 |
| Bartolozzi, Arthur R. | 0 | 64 | 64 | ○ | ○ | ○ | 3.5 |
| Batman, Brian A. | 6 | 42 | 48 | ○ | ○ | ○ | 3.3 |
| Beachler, John S. | 6 | 25 | 31 | ○ | ○ | ○ | 5.2 |
| Becker II, Carl E. | 43 | 49 | 92 | ○ | ○ | ○ | 3.5 |
| Beight, John L. | 11 | 30 | 41 | ○ | ○ | ○ | 4.0 |
| Benner IV, John H. | 17 | 31 | 48 | ○ | ○ | ○ | 4.0 |
| Bennett, Craig H. | 0 | 59 | 59 | ○ | ○ | ○ | 2.7 |
| Bhayani, Shabir | 10 | 21 | 31 | ○ | ○ | ○ | 3.7 |
| Bisignani, Gregory A. | 25 | 36 | 61 | ○ | ○ | ○ | 3.5 |
| Boal, Richard J. | 34 | 46 | 80 | ○ | ○ | ○ | 3.9 |
| Bonier, Jerome H. | 13 | 18 | 31 | ○ | ○ | ○ | 3.4 |
| Booth Jr., Robert E. | 26 | 567 | 593 | ○ | ○ | ○ | 3.8 |
| Boran Jr., Robert P. | 21 | 50 | 71 | ○ | ○ | ○ | 4.0 |
| Bosacco, David N. | 10 | 34 | 44 | ○ | ○ | ○ | 4.6 |

- Lower than expected
- ◉ Same as expected
- Higher than expected

The complications, readmission, and length of stay results account for varying illness levels among patients.

Complications were counted when a deep joint infection or device problem occurred within 365 days and/or a blood clot occurred within 45 days of the surgery. A readmission was counted when a patient was readmitted to an acute care hospital for any reason (except rehabilitation) within 1-30 days of the discharge date of the hospitalization in which the hip or knee replacement was performed. Length of stay is the average number of days spent in the hospital following the surgery.

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Surgeons

| Surgeon | Hip Cases | Knee Cases | Total Cases | Complications | | Readmission | Post-op Length of Stay |
|-------------------------|-----------|------------|-------------|--|---------------------|-------------|------------------------|
| | | | | Deep Joint Infection or Device Problem | Blood Clot Lung/Leg | | |
| Brockmeyer, Thomas F. | 29 | 93 | 122 | ⊙ | ⊙ | ⊙ | 3.7 |
| Bumgardner, James L. | 0 | 37 | 37 | ⊙ | ⊙ | ⊙ | 4.0 |
| Burrows, Charles B. | 35 | 58 | 93 | ⊙ | ⊙ | ⊙ | 3.0 |
| Burton, Paul D. | 37 | 64 | 101 | ⊙ | ⊙ | ⊙ | 3.4 |
| Busch, Michael | 22 | 37 | 59 | ⊙ | ⊙ | ⊙ | 3.7 |
| Buseck, Mark S. | 18 | 21 | 39 | ⊙ | ⊙ | ● | 3.1 |
| Butera, Vincent | 24 | 42 | 66 | ⊙ | ⊙ | ⊙ | 4.0 |
| Byron, Thomas W. | 15 | 50 | 65 | ⊙ | ● | ⊙ | 3.8 |
| Caggiano, John D. | 12 | 22 | 34 | ⊙ | ⊙ | ⊙ | 3.7 |
| Callenberger, Ronald W. | 11 | 24 | 35 | ⊙ | ⊙ | ⊙ | 4.8 |
| Canterna, Anthony C. | 3 | 34 | 37 | ⊙ | ● | ● | 2.7 |
| Carey, Patrick J. | 0 | 42 | 42 | ⊙ | ⊙ | ⊙ | 4.1 |
| Casey Jr., John D. | 16 | 15 | 31 | ⊙ | ⊙ | ⊙ | 3.9 |
| Cautilli, George P. | 23 | 56 | 79 | ⊙ | ⊙ | ○ | 3.3 |
| Cesare, Joseph G. | 27 | 69 | 96 | ⊙ | ⊙ | ⊙ | 3.5 |
| Cherry, Kenneth L. | 105 | 165 | 270 | ○ | ⊙ | ⊙ | 3.2 |
| Chollak, William L. | 16 | 22 | 38 | ⊙ | ⊙ | ⊙ | 4.2 |
| Christian, Eugene P. | 4 | 26 | 30 | ⊙ | ⊙ | ⊙ | 3.7 |
| Ciccotti, Michael G. | 0 | 34 | 34 | ⊙ | ● | ⊙ | 4.3 |
| Cohen, David L. | 14 | 23 | 37 | ⊙ | ⊙ | ⊙ | 3.9 |
| Cohen, Peter Z. | 22 | 32 | 54 | ⊙ | ⊙ | ⊙ | 4.3 |
| Cohen, Robert E. | 100 | 139 | 239 | ⊙ | ⊙ | ⊙ | 3.1 |
| Cole Jr., Charles L. | 0 | 167 | 167 | ⊙ | ⊙ | ⊙ | 3.1 |
| Conrad, Wayne R. | 0 | 117 | 117 | ● | ⊙ | ⊙ | 3.7 |
| Cortina, Gary J. | 12 | 27 | 39 | ● | ⊙ | ⊙ | 3.6 |
| Craft, David V. | 12 | 54 | 66 | ⊙ | ⊙ | ⊙ | 3.4 |
| Crossett, Lawrence S. | 101 | 138 | 239 | ⊙ | ● | ⊙ | 3.7 |

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Only surgeons with 30 or more hip and knee replacements (combined) are reported here. Case counts for those with fewer than 30 cases are on pages 25-28.

- Lower than expected
- ⊙ Same as expected
- Higher than expected

Surgeons



| Surgeon | Hip Cases | Knee Cases | Total Cases | Complications | | Readmission | Post-op Length of Stay |
|------------------------|-----------|------------|-------------|--|---------------------|-------------|------------------------|
| | | | | Deep Joint Infection or Device Problem | Blood Clot Lung/Leg | | |
| Cuce, Frank L. | 6 | 24 | 30 | ○ | ○ | ○ | 4.3 |
| D'Antonio, James A. | 91 | 97 | 188 | ○ | ○ | ○ | 4.1 |
| D'Arco, Daniel J. | 18 | 34 | 52 | ○ | ○ | ○ | 3.4 |
| Dahmus, Robert R. | 21 | 33 | 54 | ○ | ○ | ○ | 3.7 |
| Davila, Ramon A. | 4 | 26 | 30 | ● | ○ | ○ | 3.1 |
| Davis, Charles M. | 45 | 73 | 118 | ○ | ○ | ○ | 2.3 |
| Dearolf III, Walter W. | 19 | 42 | 61 | ○ | ○ | ○ | 3.5 |
| DeLong Jr., William G. | 16 | 22 | 38 | ○ | ○ | ○ | 4.1 |
| Demuth, William W. | 19 | 20 | 39 | ● | ○ | ○ | 3.5 |
| DeVita, Dennis M. | 15 | 31 | 46 | ○ | ○ | ○ | 3.5 |
| DiGioia, Anthony M. | 160 | 176 | 336 | ○ | ○ | ○ | 3.5 |
| Dilorio, Emil J. | 7 | 45 | 52 | ○ | ● | ○ | 3.7 |
| DiSimone, Ronald E. | 23 | 62 | 85 | ○ | ○ | ● | 2.7 |
| Doherty Jr., John H. | 36 | 63 | 99 | ○ | ○ | ○ | 3.7 |
| Dominick, Thomas F. | 38 | 23 | 61 | ○ | ○ | ○ | 3.6 |
| Donofrio, Robert J. | 19 | 30 | 49 | ○ | ○ | ○ | 4.0 |
| Dragann, Raymond D. | 6 | 40 | 46 | ○ | ○ | ○ | 3.7 |
| Elia, Eugene A. | 26 | 53 | 79 | ○ | ○ | ○ | 6.4 |
| Ellis, Thomas J. | 0 | 44 | 44 | ● | ○ | ○ | 3.2 |
| Ellison, James H. | 29 | 79 | 108 | ○ | ○ | ○ | 3.8 |
| Engle, Carolyn P. | 12 | 31 | 43 | ○ | ○ | ● | 3.0 |
| Eshbach, Ted B. | 13 | 38 | 51 | ○ | ○ | ○ | 3.0 |
| Fanelli, Gregory C. | 0 | 48 | 48 | ○ | ○ | ○ | 4.1 |
| Faralli, Victor J. | 40 | 89 | 129 | ○ | ○ | ○ | 3.6 |
| Fessler, Thomas J. | 34 | 44 | 78 | ● | ○ | ○ | 3.3 |
| Fowler, David P. | 17 | 43 | 60 | ○ | ○ | ○ | 3.7 |
| Frankeny II, John R. | 21 | 44 | 65 | ● | ○ | ○ | 3.5 |

- Lower than expected
- ◉ Same as expected
- Higher than expected

The complications, readmission, and length of stay results account for varying illness levels among patients.

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Surgeons

| Surgeon | Hip Cases | Knee Cases | Total Cases | Complications | | Readmission | Post-op Length of Stay |
|------------------------|-----------|------------|-------------|--|---------------------|-------------|------------------------|
| | | | | Deep Joint Infection or Device Problem | Blood Clot Lung/Leg | | |
| Fritz, William D. | 13 | 46 | 59 | ○ | ○ | ○ | 2.5 |
| Frndak, Philip A. | 57 | 136 | 193 | ○ | ○ | ○ | 2.8 |
| Fulchiero, Gregory J. | 19 | 44 | 63 | ○ | ○ | ○ | 3.2 |
| Fultz, Craig W. | 10 | 59 | 69 | ○ | ○ | ○ | 3.7 |
| Gaffney, Michael B. | 10 | 25 | 35 | ● | ○ | ○ | 4.6 |
| Gardner, Stuart A. | 8 | 28 | 36 | ○ | ○ | ○ | 4.1 |
| Garino, Jonathan P. | 113 | 36 | 149 | ● | ○ | ○ | 3.8 |
| Gehl, Richard S. | 12 | 22 | 34 | ● | ○ | ○ | 4.3 |
| Giammattei, Frank P. | 39 | 119 | 158 | ○ | ○ | ○ | 3.5 |
| Giannotti, Bradley F. | 18 | 45 | 63 | ○ | ○ | ○ | 3.4 |
| Gillick, Alan P. | 17 | 22 | 39 | ○ | ○ | ○ | 4.0 |
| Gingrich, Kevin A. | 10 | 29 | 39 | ○ | ○ | ○ | 2.9 |
| Godbout, Brett P. | 10 | 30 | 40 | ○ | ● | ○ | 3.6 |
| Good, Robert P. | 81 | 151 | 232 | ○ | ○ | ○ | 3.6 |
| Goodman, Mark A. | 11 | 21 | 32 | ○ | ○ | ○ | 4.3 |
| Gordon, Stuart L. | 20 | 56 | 76 | ○ | ○ | ○ | 3.5 |
| Gottwald, Dan H. | 12 | 22 | 34 | ○ | ○ | ○ | 3.7 |
| Graham, Timothy S. | 8 | 27 | 35 | ○ | ○ | ○ | 4.4 |
| Green, Thomas J. | 7 | 28 | 35 | ○ | ○ | ○ | 4.0 |
| Greene, Thomas E. | 8 | 23 | 31 | ● | ○ | ○ | 4.2 |
| Groff, Steven K. | 9 | 27 | 36 | ○ | ○ | ○ | 4.6 |
| Gunnlaugson, Brian E. | 39 | 82 | 121 | ○ | ○ | ○ | 3.5 |
| Haffner, Daniel L. | 12 | 24 | 36 | ○ | ○ | ○ | 4.1 |
| Hallock, Richard H. | 27 | 90 | 117 | ○ | ○ | ○ | 3.1 |
| Hanks, Gregory A. | 7 | 25 | 32 | ○ | ○ | ○ | 3.7 |
| Harner, Christopher D. | 0 | 64 | 64 | ○ | ○ | ○ | 2.5 |
| Hartmann, David B. | 17 | 50 | 67 | ○ | ○ | ○ | 3.8 |

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Surgeons



| Surgeon | Hip Cases | Knee Cases | Total Cases | Complications | | Readmission | Post-op Length of Stay |
|--------------------------|-----------|------------|-------------|--|---------------------|-------------|------------------------|
| | | | | Deep Joint Infection or Device Problem | Blood Clot Lung/Leg | | |
| Harvey, Charles J. | 39 | 5 | 44 | ○ | ○ | ○ | 3.2 |
| Hawk, Gregor M. | 12 | 27 | 39 | ○ | ○ | ○ | 2.8 |
| Hely, Daniel P. | 16 | 38 | 54 | ● | ○ | ○ | 4.0 |
| Hennessey, Barry J. | 22 | 28 | 50 | ○ | ○ | ○ | 4.5 |
| Henzes, Jack | 19 | 84 | 103 | ○ | ○ | ○ | 3.5 |
| Heppenstall, R. Bruce | 11 | 25 | 36 | ○ | ○ | ○ | 3.8 |
| Herbert, Rex A. | 19 | 52 | 71 | ○ | ○ | ○ | 4.0 |
| Hershock, Bruce A. | 14 | 19 | 33 | ○ | ○ | ○ | 4.2 |
| Hill, Edward B. | 11 | 42 | 53 | ○ | ○ | ○ | 4.3 |
| Hirsch, Bernard | 12 | 23 | 35 | ○ | ○ | ○ | 3.9 |
| Hofmann, Douglas J. | 24 | 24 | 48 | ○ | ○ | ○ | 3.3 |
| Honkala, Timothy K. | 31 | 41 | 72 | ○ | ○ | ○ | 3.7 |
| Horwitz, Brett R. | 10 | 20 | 30 | ○ | ○ | ○ | 4.2 |
| Hottenstein, Jonathan E. | 55 | 75 | 130 | ○ | ○ | ○ | 3.8 |
| Hozack, William J. | 364 | 179 | 543 | ○ | ○ | ○ | 3.4 |
| Hribar, Stephen R. | 9 | 21 | 30 | ● | ○ | ○ | 3.7 |
| Hughes, David P. | 18 | 33 | 51 | ● | ○ | ○ | 3.5 |
| Hume, Eric L. | 65 | 122 | 187 | ○ | ○ | ○ | 3.8 |
| Hung, Gregory L. | 25 | 47 | 72 | ○ | ○ | ○ | 3.7 |
| Hussain, Shabbar | 9 | 22 | 31 | ○ | ○ | ○ | 3.7 |
| Ialeggio, John J. | 16 | 37 | 53 | ○ | ● | ○ | 3.9 |
| Israelite, Craig | 31 | 83 | 114 | ○ | ○ | ○ | 3.5 |
| Janeway, Timothy | 22 | 40 | 62 | ○ | ● | ○ | 3.6 |
| Jason, William J. | 7 | 35 | 42 | ○ | ○ | ○ | 3.9 |
| Jenter, Martin W. | 6 | 47 | 53 | ○ | ○ | ○ | 2.9 |
| Jewell, Brian F. | 13 | 33 | 46 | ○ | ○ | ○ | 3.5 |
| Johanson, Norman A. | 41 | 78 | 119 | ○ | ○ | ● | 4.0 |

- Lower than expected
- ◉ Same as expected
- Higher than expected

The complications, readmission, and length of stay results account for varying illness levels among patients.

Complications were counted when a deep joint infection or device problem occurred within 365 days and/or a blood clot occurred within 45 days of the surgery. A readmission was counted when a patient was readmitted to an acute care hospital for any reason (except rehabilitation) within 1-30 days of the discharge date of the hospitalization in which the hip or knee replacement was performed. Length of stay is the average number of days spent in the hospital following the surgery.

Only surgeons with 30 or more hip and knee replacements (combined) are reported here. Case counts for those with fewer than 30 cases are on pages 25-28.



Surgeons

| Surgeon | Hip Cases | Knee Cases | Total Cases | Complications | | Readmission | Post-op Length of Stay |
|-----------------------|-----------|------------|-------------|--|---------------------|-------------|------------------------|
| | | | | Deep Joint Infection or Device Problem | Blood Clot Lung/Leg | | |
| Johe, David H. | 19 | 54 | 73 | ○ | ● | ○ | 2.8 |
| Johnson, Van W. | 19 | 22 | 41 | ○ | ○ | ○ | 4.0 |
| Johnson, William J. | 11 | 27 | 38 | ○ | ○ | ○ | 3.6 |
| Johnstone, Graham F. | 12 | 37 | 49 | ○ | ○ | ○ | 3.3 |
| Jones, Frederick L. | 23 | 47 | 70 | ○ | ○ | ○ | 4.7 |
| Jones, Thomas B. | 16 | 48 | 64 | ○ | ○ | ○ | 3.9 |
| Jules, Arnold J. | 15 | 19 | 34 | ○ | ○ | ○ | 5.1 |
| Kaneda, Robert R. | 27 | 56 | 83 | ○ | ○ | ○ | 3.3 |
| Kappakas, George S. | 26 | 47 | 73 | ○ | ○ | ○ | 3.6 |
| Kastrup, John J. | 16 | 37 | 53 | ○ | ○ | ○ | 3.0 |
| Kates, Jonathan L. | 9 | 22 | 31 | ○ | ○ | ○ | 4.8 |
| Katz, Ian | 14 | 27 | 41 | ○ | ○ | ○ | 4.4 |
| Kaye, Andrew S. | 10 | 43 | 53 | ● | ● | ○ | 3.9 |
| Keblish Jr., Peter A. | 50 | 79 | 129 | ● | ○ | ○ | 3.3 |
| Keller, Greg S. | 4 | 33 | 37 | ○ | ○ | ○ | 3.8 |
| Kelly, Edward G. | 40 | 72 | 112 | ○ | ○ | ○ | 3.8 |
| Kennen, E. William | 19 | 95 | 114 | ○ | ○ | ● | 3.4 |
| Kohl, E. James | 13 | 20 | 33 | ○ | ○ | ○ | 3.6 |
| Kolessar, David J. | 23 | 48 | 71 | ○ | ○ | ○ | 3.4 |
| Kozicky, Peter W. | 34 | 44 | 78 | ○ | ● | ○ | 4.3 |
| Krum, Seth D. | 8 | 24 | 32 | ○ | ○ | ○ | 2.8 |
| Krywicki, William J. | 42 | 87 | 129 | ○ | ○ | ○ | 3.8 |
| Larkin, Michael J. | 13 | 49 | 62 | ○ | ○ | ○ | 3.5 |
| Larson, Thomas J. | 29 | 44 | 73 | ○ | ○ | ○ | 3.7 |
| Lauro, Gregory R. | 37 | 91 | 128 | ○ | ○ | ○ | 3.2 |
| Leggon, Robert E. | 19 | 12 | 31 | ○ | ● | ○ | 4.8 |
| Lehman, John D. | 20 | 36 | 56 | ○ | ○ | ○ | 3.9 |

The complications, readmission, and length of stay results account for varying illness levels among patients. Complications were counted when a deep joint infection or device problem occurred within 365 days and/or a blood clot occurred within 45 days of the surgery. A readmission was counted when a patient was readmitted to an acute care hospital for any reason (except rehabilitation) within 1-30 days of the discharge date of the hospitalization in which the hip or knee replacement was performed. Length of stay is the average number of days spent in the hospital following the surgery.

Only surgeons with 30 or more hip and knee replacements (combined) are reported here. Case counts for those with fewer than 30 cases are on pages 25-28.

- Lower than expected
- Same as expected
- Higher than expected

Surgeons



| Surgeon | Hip Cases | Knee Cases | Total Cases | Complications | | Readmission | Post-op Length of Stay |
|---------------------------|-----------|------------|-------------|--|---------------------|-------------|------------------------|
| | | | | Deep Joint Infection or Device Problem | Blood Clot Lung/Leg | | |
| Leslie Jr., Merle R. | 8 | 27 | 35 | ○ | ○ | ○ | 4.0 |
| Levine, Michael | 42 | 80 | 122 | ○ | ○ | ○ | 3.8 |
| Liefeld, Paul A. | 18 | 42 | 60 | ○ | ○ | ○ | 3.2 |
| Lillmars, Steven A. | 16 | 39 | 55 | ○ | ○ | ○ | 3.6 |
| Lippe, Ronald W. | 53 | 149 | 202 | ○ | ○ | ○ | 3.6 |
| Litton, Jason J. | 10 | 26 | 36 | ○ | ○ | ○ | 3.5 |
| Lonergan, Robert P. | 11 | 45 | 56 | ● | ● | ○ | 4.9 |
| Longenecker, Stephen C. | 47 | 117 | 164 | ○ | ○ | ○ | 3.4 |
| Lonner, Jess H. | 26 | 77 | 103 | ○ | ○ | ○ | 4.0 |
| Lorei, Matthew P. | 33 | 62 | 95 | ● | ○ | ● | 4.7 |
| Lotke, Paul A. | 32 | 153 | 185 | ○ | ○ | ○ | 4.2 |
| Lowry, Don A. | 15 | 43 | 58 | ○ | ○ | ○ | 4.4 |
| Lyet, J. Paul | 76 | 0 | 76 | ○ | ○ | ○ | 3.6 |
| Mackell, Thomas E. | 20 | 27 | 47 | ○ | ○ | ○ | 2.8 |
| Maggitti, Michael J. | 8 | 22 | 30 | ○ | ○ | ○ | 4.0 |
| Malloy, Edwin | 17 | 24 | 41 | ○ | ○ | ● | 4.7 |
| Mannherz, Robert E. | 1 | 30 | 31 | ○ | ○ | ○ | 3.2 |
| Markmann, William J. | 39 | 75 | 114 | ○ | ● | ○ | 4.0 |
| Mason, Gregg C. | 22 | 34 | 56 | ○ | ○ | ○ | 3.2 |
| Mauriello Jr., Anthony J. | 15 | 46 | 61 | ● | ○ | ● | 3.0 |
| McCarthy III, John J. | 30 | 50 | 80 | ○ | ○ | ○ | 4.3 |
| McClain III, Edward J. | 26 | 47 | 73 | ○ | ○ | ○ | 4.2 |
| McKirgan, Craig C. | 9 | 23 | 32 | ○ | ○ | ○ | 3.4 |
| McPhilemy, John J. | 6 | 28 | 34 | ○ | ○ | ○ | 4.6 |
| Meade, Thomas D. | 9 | 43 | 52 | ○ | ○ | ○ | 3.3 |
| Mehok, Ronald G. | 26 | 50 | 76 | ○ | ○ | ○ | 3.8 |
| Menkowitz, Bruce J. | 21 | 115 | 136 | ○ | ○ | ○ | 3.6 |

- Lower than expected
- ◉ Same as expected
- Higher than expected

The complications, readmission, and length of stay results account for varying illness levels among patients. Complications were counted when a deep joint infection or device problem occurred within 365 days and/or a blood clot occurred within 45 days of the surgery. A readmission was counted when a patient was readmitted to an acute care hospital for any reason (except rehabilitation) within 1-30 days of the discharge date of the hospitalization in which the hip or knee replacement was performed. Length of stay is the average number of days spent in the hospital following the surgery.

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Surgeons

| Surgeon | Hip Cases | Knee Cases | Total Cases | Complications | | Readmission | Post-op Length of Stay |
|-------------------------|-----------|------------|-------------|--|---------------------|-------------|------------------------|
| | | | | Deep Joint Infection or Device Problem | Blood Clot Lung/Leg | | |
| Michael, Stanley P. | 8 | 25 | 33 | ○ | ○ | ○ | 5.2 |
| Miller Jr., Ivan L. | 13 | 25 | 38 | ○ | ○ | ○ | 3.0 |
| Miller, Curt D. | 17 | 34 | 51 | ● | ○ | ○ | 4.6 |
| Miller, Lawrence S. | 0 | 39 | 39 | ○ | ○ | ○ | 3.8 |
| Miller, Michael D. | 69 | 187 | 256 | ○ | ○ | ○ | 3.3 |
| Mitrick, Michael F. | 30 | 51 | 81 | ○ | ○ | ○ | 3.3 |
| Mogerman, Jeffrey A. | 12 | 25 | 37 | ○ | ○ | ○ | 3.6 |
| Moritz, Michael J. | 15 | 21 | 36 | ○ | ○ | ○ | 3.4 |
| Moses, J. Michael | 24 | 63 | 87 | ○ | ○ | ○ | 4.0 |
| Mutschler, Thomas A. | 83 | 101 | 184 | ○ | ○ | ○ | 3.7 |
| Nazar, Jose E. | 24 | 60 | 84 | ○ | ○ | ○ | 3.6 |
| Nazarian, David G. | 263 | 175 | 438 | ○ | ○ | ○ | 3.6 |
| Nelson, Charles L. | 62 | 69 | 131 | ○ | ○ | ○ | 3.9 |
| Nelson, Owen A. | 34 | 70 | 104 | ○ | ○ | ○ | 3.9 |
| Neuschwander, David C. | 0 | 39 | 39 | ○ | ○ | ○ | 3.9 |
| Nevulis, John J. | 13 | 21 | 34 | ○ | ○ | ○ | 4.2 |
| Nord, D. Scott | 10 | 22 | 32 | ○ | ○ | ○ | 3.5 |
| O'Brien III, Frank D. | 10 | 25 | 35 | ○ | ○ | ○ | 3.7 |
| O'Malley Jr., Donald F. | 18 | 37 | 55 | ○ | ○ | ○ | 3.9 |
| O'Neill, James P. | 17 | 26 | 43 | ○ | ○ | ○ | 3.9 |
| Pan, Edward L. | 13 | 55 | 68 | ● | ○ | ○ | 3.5 |
| Papas, Spiro N. | 9 | 30 | 39 | ○ | ○ | ○ | 4.1 |
| Parenti, John M. | 14 | 16 | 30 | ○ | ○ | ○ | 3.5 |
| Parrish, William M. | 40 | 46 | 86 | ○ | ○ | ○ | 2.4 |
| Patney, Michael J. | 9 | 29 | 38 | ○ | ○ | ○ | 2.7 |
| Pell, John J. | 22 | 36 | 58 | ○ | ○ | ○ | 4.4 |
| Piasio, Mark A. | 13 | 24 | 37 | ○ | ○ | ○ | 4.1 |

The complications, readmission, and length of stay results account for varying illness levels among patients. Complications were counted when a deep joint infection or device problem occurred within 365 days and/or a blood clot occurred within 45 days of the surgery. A readmission was counted when a patient was readmitted to an acute care hospital for any reason (except rehabilitation) within 1-30 days of the discharge date of the hospitalization in which the hip or knee replacement was performed. Length of stay is the average number of days spent in the hospital following the surgery.

Only surgeons with 30 or more hip and knee replacements (combined) are reported here. Case counts for those with fewer than 30 cases are on pages 25-28.

- Lower than expected
- Same as expected
- Higher than expected

Surgeons



| Surgeon | Hip Cases | Knee Cases | Total Cases | Complications | | Readmission | Post-op Length of Stay |
|---------------------------|-----------|------------|-------------|--|---------------------|-------------|------------------------|
| | | | | Deep Joint Infection or Device Problem | Blood Clot Lung/Leg | | |
| Pifer, Gerald W. | 12 | 53 | 65 | ● | ○ | ○ | 4.4 |
| Piston, Robert W. | 50 | 112 | 162 | ○ | ○ | ○ | 3.6 |
| Polacheck Jr., William J. | 21 | 48 | 69 | ○ | ○ | ○ | 3.6 |
| Polintan, Rodolfo | 19 | 30 | 49 | ○ | ○ | ○ | 3.9 |
| Pollice, Paul F. | 50 | 53 | 103 | ○ | ○ | ○ | 3.7 |
| Poon, Edward D. | 19 | 40 | 59 | ○ | ○ | ○ | 3.8 |
| Port, Joshua | 0 | 110 | 110 | ○ | ○ | ○ | 3.1 |
| Puglisi, Anthony S. | 10 | 30 | 40 | ○ | ○ | ○ | 2.6 |
| Puleo, Samuel M. | 20 | 56 | 76 | ○ | ○ | ○ | 4.3 |
| Purtill, James J. | 39 | 48 | 87 | ○ | ○ | ○ | 3.9 |
| Rackish, Mark A. | 56 | 27 | 83 | ○ | ○ | ○ | 3.3 |
| Raklewicz, Michael C. | 17 | 46 | 63 | ○ | ○ | ○ | 3.7 |
| Ray, Richard L. | 25 | 80 | 105 | ○ | ○ | ○ | 4.9 |
| Reese, Evan C. | 17 | 16 | 33 | ○ | ○ | ○ | 3.6 |
| Reid, James H. | 10 | 20 | 30 | ○ | ● | ○ | 3.2 |
| Renz, Thomas J. | 25 | 32 | 57 | ○ | ○ | ○ | 3.5 |
| Resnick, Paul H. | 17 | 70 | 87 | ○ | ○ | ○ | 3.9 |
| Respet, Patrick B. | 15 | 22 | 37 | ○ | ○ | ○ | 3.3 |
| Richards Jr., Robert N. | 20 | 26 | 46 | ○ | ○ | ● | 4.0 |
| Ripepi, Vincent J. | 11 | 28 | 39 | ○ | ○ | ● | 3.3 |
| Robertson, Roger J. | 31 | 70 | 101 | ○ | ○ | ○ | 4.0 |
| Rodgers, John C. | 14 | 31 | 45 | ○ | ○ | ○ | 3.9 |
| Roeshot, Douglas E. | 38 | 40 | 78 | ○ | ○ | ○ | 3.6 |
| Rogal, Michael J. | 26 | 62 | 88 | ○ | ○ | ○ | 3.7 |
| Rogers, Vincent P. | 33 | 119 | 152 | ○ | ○ | ○ | 2.9 |
| Rogusky, Edwin J. | 14 | 19 | 33 | ○ | ● | ○ | 3.3 |
| Rothacker Jr., Gerald W. | 34 | 61 | 95 | ○ | ○ | ○ | 3.3 |

- Lower than expected
- ◉ Same as expected
- Higher than expected

The complications, readmission, and length of stay results account for varying illness levels among patients.

Complications were counted when a deep joint infection or device problem occurred within 365 days and/or a blood clot occurred within 45 days of the surgery. A readmission was counted when a patient was readmitted to an acute care hospital for any reason (except rehabilitation) within 1-30 days of the discharge date of the hospitalization in which the hip or knee replacement was performed. Length of stay is the average number of days spent in the hospital following the surgery.

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Surgeons

| Surgeon | Hip Cases | Knee Cases | Total Cases | Complications | | Readmission | Post-op Length of Stay |
|-----------------------------|-----------|------------|-------------|--|---------------------|-------------|------------------------|
| | | | | Deep Joint Infection or Device Problem | Blood Clot Lung/Leg | | |
| Rothenberg, Mitchell H. | 8 | 32 | 40 | ○ | ○ | ○ | 3.4 |
| Rothman, Richard H. | 346 | 210 | 556 | ○ | ○ | ○ | 4.1 |
| Rubbo, Ernest R. | 7 | 24 | 31 | ○ | ○ | ○ | 3.6 |
| Rubin, Jeffrey F. | 57 | 47 | 104 | ○ | ○ | ○ | 3.6 |
| Ruggiero, Robert A. | 31 | 90 | 121 | ○ | ○ | ○ | 3.0 |
| Ruht, Barry A. | 21 | 50 | 71 | ○ | ○ | ○ | 3.2 |
| Ruth, Robert M. | 18 | 16 | 34 | ○ | ○ | ○ | 3.7 |
| Rychak, John S. | 17 | 62 | 79 | ○ | ○ | ○ | 3.8 |
| Sachdev, Ranjan | 36 | 39 | 75 | ○ | ○ | ○ | 4.0 |
| Scarpino, Leo J. | 48 | 81 | 129 | ○ | ○ | ○ | 3.4 |
| Schaaf, H. William | 25 | 35 | 60 | ○ | ○ | ○ | 4.4 |
| Schmaltz, Harry W. | 51 | 121 | 172 | ○ | ○ | ○ | 3.6 |
| Schroeder, Richard D. | 16 | 37 | 53 | ● | ● | ○ | 4.8 |
| Scornavacchi Jr., Joseph M. | 33 | 93 | 126 | ○ | ○ | ○ | 3.6 |
| Scullin III, John P. | 33 | 63 | 96 | ○ | ○ | ○ | 4.3 |
| Sharkey, Peter F. | 178 | 228 | 406 | ○ | ● | ○ | 3.7 |
| Shatouhy, Joseph | 9 | 33 | 42 | ○ | ○ | ○ | 2.8 |
| Sicuranza, Michael J. | 6 | 44 | 50 | ○ | ○ | ○ | 4.4 |
| Sieger, David D. | 12 | 19 | 31 | ○ | ○ | ○ | 3.9 |
| Simmons Jr., Cheston | 20 | 26 | 46 | ○ | ○ | ○ | 3.7 |
| Singer, Robert J. | 7 | 35 | 42 | ○ | ○ | ○ | 3.7 |
| Sinha, Raj K. | 40 | 44 | 84 | ○ | ○ | ○ | 3.4 |
| Smith, Donald B. | 22 | 40 | 62 | ○ | ○ | ○ | 3.3 |
| Smith, Gary L. | 26 | 41 | 67 | ○ | ○ | ○ | 4.1 |
| Smith, Jack D. | 24 | 49 | 73 | ○ | ○ | ○ | 3.8 |
| Smith, Stephen H. | 9 | 30 | 39 | ○ | ○ | ○ | 4.3 |
| Soffer, Stephen R. | 10 | 42 | 52 | ○ | ○ | ○ | 4.0 |

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- Lower than expected
- Same as expected
- Higher than expected

Surgeons



| Surgeon | Hip Cases | Knee Cases | Total Cases | Complications | | Readmission | Post-op Length of Stay |
|--------------------------|-----------|------------|-------------|--|---------------------|-------------|------------------------|
| | | | | Deep Joint Infection or Device Problem | Blood Clot Lung/Leg | | |
| Sotereanos, Nicholas G. | 75 | 114 | 189 | ⊙ | ● | ⊙ | 4.6 |
| Sotos, Lazaros N. | 10 | 29 | 39 | ⊙ | ⊙ | ⊙ | 3.5 |
| Spingola, Charles E. | 18 | 24 | 42 | ⊙ | ⊙ | ⊙ | 3.6 |
| Stabler, Craig L. | 1 | 63 | 64 | ⊙ | ⊙ | ⊙ | 3.7 |
| Stapor, David J. | 27 | 48 | 75 | ⊙ | ⊙ | ⊙ | 4.1 |
| Star, Andrew M. | 60 | 86 | 146 | ⊙ | ⊙ | ⊙ | 3.9 |
| Steele, John F. | 34 | 106 | 140 | ⊙ | ⊙ | ⊙ | 4.0 |
| Stefanovski, Nick | 16 | 31 | 47 | ⊙ | ⊙ | ⊙ | 3.3 |
| Stelmach, John P. | 67 | 203 | 270 | ⊙ | ⊙ | ⊙ | 2.5 |
| Stracci, Joseph P. | 9 | 40 | 49 | ⊙ | ⊙ | ⊙ | 3.8 |
| Straley, Richard K. | 12 | 44 | 56 | ⊙ | ⊙ | ⊙ | 3.4 |
| Suarez, Paul A. | 15 | 21 | 36 | ⊙ | ⊙ | ⊙ | 2.9 |
| Suprock, Mark D. | 40 | 135 | 175 | ● | ⊙ | ⊙ | 2.9 |
| Sutherland, Robert D. | 11 | 41 | 52 | ⊙ | ⊙ | ⊙ | 3.5 |
| Sybing, Eugenio A. | 7 | 25 | 32 | ⊙ | ⊙ | ⊙ | 4.8 |
| Terefenko, Kevin M. | 19 | 38 | 57 | ⊙ | ⊙ | ⊙ | 4.0 |
| Theis, Steven W. | 31 | 101 | 132 | ⊙ | ⊙ | ⊙ | 3.3 |
| Thomas, Stephen J. | 25 | 52 | 77 | ⊙ | ⊙ | ⊙ | 4.0 |
| Thomas, Victor J. | 28 | 53 | 81 | ⊙ | ⊙ | ⊙ | 3.3 |
| Thompson, John | 11 | 34 | 45 | ⊙ | ⊙ | ⊙ | 3.3 |
| Tomaszewski, Theodore J. | 11 | 24 | 35 | ⊙ | ⊙ | ⊙ | 3.2 |
| Tranovich, Michael A. | 6 | 35 | 41 | ⊙ | ⊙ | ⊙ | 3.4 |
| Triantafyllou, Steven J. | 11 | 19 | 30 | ⊙ | ⊙ | ⊙ | 3.5 |
| Tripi, Joseph E. | 8 | 24 | 32 | ⊙ | ⊙ | ⊙ | 3.4 |

- ⊙ Lower than expected
- ⊙ Same as expected
- Higher than expected

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Surgeons

| Surgeon | Hip Cases | Knee Cases | Total Cases | Complications | | Readmission | Post-op Length of Stay |
|-------------------------|-----------|------------|-------------|--|---------------------|-------------|------------------------|
| | | | | Deep Joint Infection or Device Problem | Blood Clot Lung/Leg | | |
| Tymon, Timothy P. | 0 | 31 | 31 | ⊙ | ⊙ | ⊙ | 3.5 |
| Vangiesen, Peter J. | 16 | 42 | 58 | ⊙ | ⊙ | ⊙ | 4.0 |
| Vena, Vincent E. | 14 | 33 | 47 | ⊙ | ⊙ | ⊙ | 4.1 |
| Vernace, Joseph V. | 36 | 74 | 110 | ⊙ | ⊙ | ⊙ | 3.5 |
| Ververeli, Prodromos A. | 87 | 138 | 225 | ○ | ⊙ | ⊙ | 2.8 |
| Weidner, Paul L. | 77 | 121 | 198 | ⊙ | ⊙ | ⊙ | 3.5 |
| Weiss Jr., Carl B. | 18 | 65 | 83 | ⊙ | ⊙ | ⊙ | 3.7 |
| Weiss, Michael W. | 13 | 49 | 62 | ⊙ | ⊙ | ⊙ | 3.4 |
| Weiss, Robert F. | 13 | 43 | 56 | ⊙ | ⊙ | ⊙ | 4.0 |
| Westphal, Thomas R. | 4 | 69 | 73 | ⊙ | ⊙ | ⊙ | 3.0 |
| Wheeler, Thomas B. | 5 | 32 | 37 | ● | ⊙ | ⊙ | 5.2 |
| Wigle, A. Roger | 13 | 25 | 38 | ⊙ | ⊙ | ⊙ | 3.3 |
| Williams Jr., John T. | 42 | 78 | 120 | ⊙ | ⊙ | ⊙ | 2.7 |
| Williams, John M. | 12 | 32 | 44 | ⊙ | ⊙ | ⊙ | 3.7 |
| Williams, Mark S. | 14 | 38 | 52 | ⊙ | ⊙ | ⊙ | 2.8 |
| Wolf, Laurence R. | 41 | 42 | 83 | ⊙ | ⊙ | ⊙ | 4.1 |
| Wolfgang, Gary L. | 81 | 91 | 172 | ⊙ | ⊙ | ⊙ | 4.0 |
| Worrall, Vernon T. | 24 | 87 | 111 | ⊙ | ⊙ | ⊙ | 3.9 |
| Yakish, Samuel D. | 25 | 51 | 76 | ⊙ | ● | ⊙ | 3.8 |
| Yanoff, David B. | 9 | 24 | 33 | ⊙ | ⊙ | ⊙ | 3.0 |
| Zartman, Gary M. | 30 | 60 | 90 | ⊙ | ● | ⊙ | 3.8 |
| Zurbach, James M. | 9 | 27 | 36 | ⊙ | ⊙ | ● | 4.1 |

The complications, readmission, and length of stay results account for varying illness levels among patients. Complications were counted when a deep joint infection or device problem occurred within 365 days and/or a blood clot occurred within 45 days of the surgery. A readmission was counted when a patient was readmitted to an acute care hospital for any reason (except rehabilitation) within 1-30 days of the discharge date of the hospitalization in which the hip or knee replacement was performed. Length of stay is the average number of days spent in the hospital following the surgery.

Only surgeons with 30 or more hip and knee replacements (combined) are reported here. Case counts for those with fewer than 30 cases are on pages 25-28.

- Lower than expected
- ⊙ Same as expected
- Higher than expected

Hospitals with fewer than 30 cases (hip and knee combined).

| Hospital | Hip Cases | Knee Cases | Total Cases |
|---------------------------|------------------|-------------------|--------------------|
| Ashland Regional | 1 | 3 | 4 |
| Berwick | 7 | 19 | 26 |
| Brookville | 9 | 12 | 21 |
| Corry Memorial | 7 | 14 | 21 |
| Hazleton St Joseph | 5 | 6 | 11 |
| Highlands | 3 | 10 | 13 |
| Hospital Fox Chase Cancer | 5 | 0 | 5 |
| Jennersville Regional | 13 | 12 | 25 |
| Jersey Shore | 5 | 13 | 18 |
| Kane Community | 12 | 16 | 28 |
| Mercy Philadelphia | 10 | 11 | 21 |
| Mercy Providence | 7 | 16 | 23 |
| Methodist Division/TJUH | 6 | 10 | 16 |
| Millcreek Community | 6 | 11 | 17 |
| Miners | 1 | 3 | 4 |
| Palmerton | 13 | 12 | 25 |
| Philipsburg Area | 5 | 13 | 18 |
| Punxsutawney Area | 7 | 10 | 17 |
| St Agnes | 3 | 11 | 14 |
| St Joseph's/Philadelphia | 4 | 6 | 10 |
| Titusville Area | 12 | 17 | 29 |
| Tyler Memorial | 6 | 7 | 13 |
| Tyrone | 2 | 4 | 6 |
| Windber | 7 | 17 | 24 |

Surgeons with fewer than 30 cases (hip and knee combined).

| Surgeon | Hip Cases | Knee Cases | Total Cases |
|--------------------------|-----------|------------|-------------|
| Abboudi, Jack | 1 | 0 | 1 |
| Abraham, David J. | 4 | 0 | 4 |
| Adolph, Carl M. | 3 | 4 | 7 |
| Aita, Daren J. | 2 | 2 | 4 |
| Aksu, Kenan | 0 | 3 | 3 |
| Aland, Christopher M. | 0 | 3 | 3 |
| Altman, Daniel T. | 9 | 7 | 16 |
| Amalfitano, Thomas G. | 3 | 17 | 20 |
| Andreychik, David A. | 16 | 10 | 26 |
| Antin, Mitchell E. | 8 | 10 | 18 |
| Avallone Jr., Vincent R. | 4 | 24 | 28 |
| Avart, Mark D. | 0 | 4 | 4 |
| Babins, David M. | 15 | 13 | 28 |
| Balduini, Frederick C. | 0 | 18 | 18 |
| Ball, David J. | 3 | 24 | 27 |
| Banas, Michael P. | 7 | 7 | 14 |
| Barnes, Frederick J. | 17 | 12 | 29 |
| Bartolet, Terry L. | 0 | 5 | 5 |
| Barua, Subrata P. | 0 | 4 | 4 |
| Basile, Joseph A. | 2 | 3 | 5 |
| Beck, Thomas D. | 3 | 16 | 19 |
| Bell, Lawrence D. | 5 | 9 | 14 |
| Berger, Winfried M. | 2 | 3 | 5 |
| Berman, Arnold T. | 9 | 18 | 27 |
| Bixler, Brian L. | 0 | 14 | 14 |
| Bizousky, David T. | 4 | 4 | 8 |
| Black, Jonathan D. | 3 | 3 | 6 |
| Bleday, Raymond M. | 3 | 5 | 8 |
| Bloomstine, Mark T. | 8 | 13 | 21 |
| Born, Christopher T. | 6 | 16 | 22 |
| Bosacco, Stephen J. | 5 | 2 | 7 |
| Boylan, Douglas N. | 0 | 5 | 5 |
| Boyle, Scott J. | 6 | 18 | 24 |
| Bradley, James P. | 0 | 23 | 23 |
| Brigham, Mark P. | 3 | 3 | 6 |
| Brody, Leonard A. | 6 | 15 | 21 |
| Brogie, Patrick J. | 3 | 3 | 6 |
| Bromberg, Jonathan | 2 | 5 | 7 |
| Bruno, Anthony | 3 | 11 | 14 |
| Burke III, Charles J. | 6 | 21 | 27 |
| Butterfield, Spencer L. | 4 | 7 | 11 |
| Carson, James H. | 9 | 15 | 24 |

| Surgeon | Hip Cases | Knee Cases | Total Cases |
|--------------------------|-----------|------------|-------------|
| Caucchi, David | 2 | 2 | 4 |
| Cecchini, Albert J. | 0 | 1 | 1 |
| Cerciello, Mark J. | 1 | 12 | 13 |
| Charlton, William P. | 2 | 4 | 6 |
| Chiavacci, Eugene J. | 8 | 19 | 27 |
| Chidester, John H. | 4 | 11 | 15 |
| Christiansen, Gregory B. | 0 | 15 | 15 |
| Chu, Constance R. | 1 | 11 | 12 |
| Clabbers, Kim Marie | 2 | 7 | 9 |
| Cohen, Martin A. | 2 | 2 | 4 |
| Coleman, Martin R. | 1 | 0 | 1 |
| Collier Jr., Andrew J. | 3 | 8 | 11 |
| Connolly, Thomas C. | 4 | 8 | 12 |
| Cooke, Christopher C. | 5 | 5 | 10 |
| Cooper, Alan E. | 5 | 20 | 25 |
| Cooper, Mitchell E. | 2 | 0 | 2 |
| Corcoran, Thomas A. | 4 | 19 | 23 |
| Coyle, Alice R. | 3 | 3 | 6 |
| Cronkey, Joseph E. | 11 | 10 | 21 |
| D'Agata, Samuel D. | 0 | 29 | 29 |
| Dailey, Stephen W. | 2 | 4 | 6 |
| Davis, Steven S. | 5 | 13 | 18 |
| Dawson, Michael H. | 3 | 0 | 3 |
| Deforno, Donald J. | 1 | 2 | 3 |
| Demeo, Patrick J. | 0 | 1 | 1 |
| Dethoff, John C. | 9 | 16 | 25 |
| Dinsmore Jr., Harry H. | 1 | 2 | 3 |
| DiStefano, Vincent J. | 3 | 4 | 7 |
| Ditmars, Douglas D. | 8 | 12 | 20 |
| Diverio Jr., Donald D. | 2 | 10 | 12 |
| Dolecki, Michael | 11 | 14 | 25 |
| Donthineni-Rao, Rakesh | 0 | 2 | 2 |
| Duch, Michael R. | 1 | 0 | 1 |
| Eagle, Perry A. | 0 | 1 | 1 |
| Ecker, Malcolm L. | 8 | 12 | 20 |
| Eingorn, David S. | 3 | 2 | 5 |
| Emper, William D. | 0 | 18 | 18 |
| Esterhai Jr., John L. | 2 | 0 | 2 |
| Evans, Charles M. | 2 | 4 | 6 |
| Evans, Eric T. | 7 | 17 | 24 |
| Falatyn, Stephen P. | 1 | 0 | 1 |
| Federico, Dale J. | 0 | 1 | 1 |

Surgeons with fewer than 30 cases (hip and knee combined).

| Surgeon | Hip Cases | Knee Cases | Total Cases |
|-----------------------------|-----------|------------|-------------|
| Feinstein, Peter A. | 6 | 12 | 18 |
| Ferretti Jr., Anthony | 4 | 4 | 8 |
| Ferretti, Anthony J. | 2 | 8 | 10 |
| Fink, Bradley A. | 2 | 1 | 3 |
| Ford, Edward J. | 2 | 3 | 5 |
| Foster, Mark R. | 3 | 2 | 5 |
| Frame, David C. | 7 | 18 | 25 |
| Frankel, Andrew S. | 17 | 11 | 28 |
| Frederick, Robert W. | 0 | 1 | 1 |
| Freedman, Kevin B. | 1 | 0 | 1 |
| Friedman, Robert L. | 3 | 9 | 12 |
| Friedman, Shep J. | 2 | 6 | 8 |
| Frieman, Barbara G. | 0 | 9 | 9 |
| Fugate, Douglas S. | 4 | 4 | 8 |
| Gallant, Gregory G. | 1 | 4 | 5 |
| Gause, Trenton M. | 11 | 14 | 25 |
| Gavin Jr., J. Robert | 8 | 17 | 25 |
| German, David J. | 8 | 8 | 16 |
| Ghigiarelli, Christopher C. | 0 | 2 | 2 |
| Gibbons, John M. | 3 | 10 | 13 |
| Gick, Stephen A. | 5 | 22 | 27 |
| Girdany, David S. | 6 | 11 | 17 |
| Girton, Keith E. | 2 | 0 | 2 |
| Glasso Jr., Louis C. | 8 | 17 | 25 |
| Go Jr., William C. | 1 | 2 | 3 |
| Gokcen, Eric C. | 0 | 1 | 1 |
| Golobek, Donald | 6 | 3 | 9 |
| Gordon, Rodney G. | 1 | 0 | 1 |
| Grabias Jr., Stanley L. | 5 | 18 | 23 |
| Grob, Robert B. | 2 | 12 | 14 |
| Groff, Yram J. | 1 | 3 | 4 |
| Gruen, Gary S. | 2 | 0 | 2 |
| Guagliardo, Joseph P. | 2 | 5 | 7 |
| Guastavino, Thomas D. | 4 | 14 | 18 |
| Haas, Myron D. | 7 | 13 | 20 |
| Hahn, Jonathan F. | 19 | 0 | 19 |
| Hamilton, William C. | 5 | 6 | 11 |
| Hammond III, N. Leroy | 5 | 4 | 9 |
| Hamsher, James R. | 11 | 11 | 22 |
| Hasbach, Thomas J. | 11 | 11 | 22 |
| Haus, Mary M. | 0 | 11 | 11 |
| Heidenreich Jr., Fred P. | 6 | 13 | 19 |

| Surgeon | Hip Cases | Knee Cases | Total Cases |
|-------------------------|-----------|------------|-------------|
| Heintz, James J. | 10 | 8 | 18 |
| Helmold, Karl W. | 3 | 4 | 7 |
| Hibberd, Alan E. | 9 | 3 | 12 |
| Himmelwright, Brett A. | 0 | 25 | 25 |
| Hoffman, James K. | 8 | 17 | 25 |
| Hootman, Barry D. | 2 | 22 | 24 |
| Horenstein, Paul A. | 4 | 18 | 22 |
| Hubbard Jr., Charles J. | 7 | 13 | 20 |
| Hummer III, Charles D. | 7 | 19 | 26 |
| Huxster, Robert H. | 1 | 13 | 14 |
| Ignatius, Paul F. | 2 | 5 | 7 |
| Irwin, John T. | 4 | 9 | 13 |
| Jaeger, Randy | 0 | 23 | 23 |
| Jelen Jr., Joseph A. | 2 | 8 | 10 |
| Jeng, Clifford L. | 4 | 7 | 11 |
| Jurenovich, Michael J. | 1 | 5 | 6 |
| Kalenak, Alexander | 0 | 4 | 4 |
| Kann, Jeffrey N. | 0 | 11 | 11 |
| Kapcala, Jan S. | 1 | 1 | 2 |
| Keenan, Mary Ann | 1 | 3 | 4 |
| Kilkelly, Francis X. | 0 | 2 | 2 |
| Kim, Eugene D. | 2 | 3 | 5 |
| Klein, Alan H. | 13 | 15 | 28 |
| Kovalsky, Don A. | 1 | 2 | 3 |
| Kovalsky, Evan S. | 1 | 5 | 6 |
| Krajeski, R. Drew | 8 | 12 | 20 |
| Kramer, Thomas D. | 11 | 16 | 27 |
| Krot, Alexander | 12 | 15 | 27 |
| Kuklinski, Lawrence M. | 5 | 21 | 26 |
| Kunkle, Herbert L. | 6 | 13 | 19 |
| Lackman, Richard D. | 1 | 8 | 9 |
| Langhans, Mark J. | 14 | 15 | 29 |
| Laurencin, Cato T. | 3 | 5 | 8 |
| Lease, John R. | 3 | 1 | 4 |
| Lesh, Mark L. | 9 | 10 | 19 |
| Levin, Gene D. | 9 | 10 | 19 |
| Levy, Jon A. | 11 | 9 | 20 |
| Liss, Robert G. | 13 | 0 | 13 |
| Little, Thomas A. | 0 | 3 | 3 |
| Luchetti, Wayne T. | 1 | 8 | 9 |
| Lupo, Robert A. | 11 | 10 | 21 |
| Lyons, Christopher J. | 12 | 11 | 23 |

Surgeons with fewer than 30 cases (hip and knee combined).

| Surgeon | Hip Cases | Knee Cases | Total Cases |
|-------------------------|-----------|------------|-------------|
| Lyons, John C. | 5 | 17 | 22 |
| Macielak, James R. | 1 | 0 | 1 |
| Mackell Jr., James V. | 2 | 10 | 12 |
| MacPhail, John | 3 | 12 | 15 |
| Maley, Edward D. | 2 | 15 | 17 |
| Malumed, Jeffrey | 0 | 8 | 8 |
| Mancuso, Christopher J. | 2 | 0 | 2 |
| Mandarino, Michael J. | 2 | 8 | 10 |
| Mansmann, Kevin A. | 5 | 7 | 12 |
| Manta, John P. | 1 | 9 | 10 |
| Manziona, Marc | 1 | 4 | 5 |
| Marchinski, Leonard J. | 6 | 8 | 14 |
| Marcus, Andrew J. | 6 | 4 | 10 |
| Martin Jr., John A. | 0 | 17 | 17 |
| Martin, James S. | 4 | 16 | 20 |
| Martin, Thomas L. | 1 | 5 | 6 |
| Martinez, Zeferino | 8 | 20 | 28 |
| Mathews, Robert S. | 2 | 2 | 4 |
| Mattucci Jr., James M. | 0 | 1 | 1 |
| Mazur, Donald W. | 2 | 4 | 6 |
| McGann, Robert D. | 9 | 12 | 21 |
| McGlynn, James T. | 5 | 17 | 22 |
| McGuire, Daniel T. | 1 | 4 | 5 |
| McHugh, Dennis P. | 1 | 15 | 16 |
| McMaster, James H. | 10 | 19 | 29 |
| McWhirter, William R. | 2 | 15 | 17 |
| Mears, Dana C. | 3 | 2 | 5 |
| Mehm, Joseph W. | 8 | 20 | 28 |
| Meller, Menachem M. | 4 | 9 | 13 |
| Mendez, Armando A. | 4 | 11 | 15 |
| Menio, Gregory J. | 8 | 9 | 17 |
| Mino, David E. | 3 | 0 | 3 |
| Mira, Allan J. | 8 | 15 | 23 |
| Mitchell, Eric I. | 4 | 6 | 10 |
| Mitchell, William J. | 1 | 2 | 3 |
| Moran Jr., Theodore R. | 3 | 12 | 15 |
| Mulholland, Jeffrey B. | 0 | 12 | 12 |
| Muller, Gary W. | 6 | 21 | 27 |
| Muser, Daniel E. | 4 | 4 | 8 |
| Muzzonigro, Thomas S. | 2 | 6 | 8 |
| Mystakas, Fotis G. | 7 | 14 | 21 |
| Nabors, Eric D. | 5 | 11 | 16 |

| Surgeon | Hip Cases | Knee Cases | Total Cases |
|----------------------------|-----------|------------|-------------|
| Nachtigall, Dean A. | 9 | 15 | 24 |
| Nappi, Dominic F. | 0 | 3 | 3 |
| Nartatez, Mark A. | 6 | 19 | 25 |
| Nettrour, Lewis F. | 5 | 7 | 12 |
| Neuman, Paul C. | 3 | 1 | 4 |
| Nolan Jr., John P. | 1 | 2 | 3 |
| Nutt III, James N. | 8 | 9 | 17 |
| O'Brien, Brendan J. | 1 | 3 | 4 |
| O'Brien, Evan D. | 0 | 1 | 1 |
| Odgers IV, Charles J. | 1 | 0 | 1 |
| Okin, E. Michael | 0 | 17 | 17 |
| Oliveri, Marcelino P. | 0 | 3 | 3 |
| Oronoz Jr., Joaquin F. | 5 | 3 | 8 |
| Overholt, David J. | 8 | 7 | 15 |
| Palmaccio, Anthony J. | 2 | 3 | 5 |
| Pashman, David R. | 2 | 7 | 9 |
| Patterson, Donald A. | 6 | 6 | 12 |
| Peff, Thomas C. | 1 | 6 | 7 |
| Pellegrini Jr., Vincent D. | 14 | 5 | 19 |
| Perlmutter, Mark N. | 3 | 6 | 9 |
| Perry III, John F. | 1 | 2 | 3 |
| Petolillo Jr., John | 1 | 4 | 5 |
| Philippon, Marc J. | 27 | 0 | 27 |
| Polidora, Frank C. | 14 | 15 | 29 |
| Pollack, Lawrence S. | 5 | 14 | 19 |
| Pollock, Michael S. | 5 | 7 | 12 |
| Powers, Brian A. | 9 | 9 | 18 |
| Primiano, George A. | 1 | 7 | 8 |
| Propst-Proctor, Sandra | 7 | 9 | 16 |
| Puccio, Steven T. | 7 | 3 | 10 |
| Pullekines, Joseph W. | 13 | 14 | 27 |
| Puri, Lalit | 2 | 8 | 10 |
| Pushkarewicz, Michael J. | 13 | 12 | 25 |
| Rees, David B. | 7 | 22 | 29 |
| Reigel, Craig A. | 2 | 0 | 2 |
| Reinhardt, David E. | 1 | 4 | 5 |
| Rhodes, Anthony L. | 1 | 7 | 8 |
| Richman, Jory D. | 8 | 0 | 8 |
| Ridella, P. James | 9 | 15 | 24 |
| Rinker, R. James | 8 | 8 | 16 |
| Ritz, George | 5 | 16 | 21 |
| Rogers, Jonathan J. | 3 | 6 | 9 |

Surgeons with fewer than 30 cases (hip and knee combined).

| Surgeon | Hip Cases | Knee Cases | Total Cases |
|-------------------------|-----------|------------|-------------|
| Rosenfeld, Karl | 6 | 17 | 23 |
| Rosenfeld, Ronald N. | 2 | 9 | 11 |
| Rowe, Angela W. | 5 | 16 | 21 |
| Rubin, Morton L. | 4 | 22 | 26 |
| Ruggiero Jr., Robert A. | 7 | 5 | 12 |
| Rutter, Chad M. | 5 | 3 | 8 |
| Ryscavage, Thomas S. | 4 | 6 | 10 |
| Sacchetti, Mario P. | 6 | 15 | 21 |
| Sachs, Ira C. | 4 | 15 | 19 |
| Salvo, John P. | 5 | 6 | 11 |
| Schmidt, Richard G. | 10 | 1 | 11 |
| Schrantz, William F. | 0 | 2 | 2 |
| Schwartz, Todd D. | 11 | 18 | 29 |
| Searfoss, Rodger C. | 8 | 12 | 20 |
| Sebastianelli, Wayne J. | 2 | 9 | 11 |
| Seel, Michael J. | 8 | 20 | 28 |
| Sewecke, Jeffrey J. | 9 | 15 | 24 |
| Shakil, Mohammed S. | 0 | 4 | 4 |
| Sharps, Lewis S. | 8 | 19 | 27 |
| Shilling, Jack W. | 12 | 10 | 22 |
| Silver, Barry A. | 0 | 6 | 6 |
| Simonelli, Paul M. | 5 | 18 | 23 |
| Skura, Douglas S. | 4 | 14 | 18 |
| Slagle, Richard B. | 0 | 10 | 10 |
| Smart, Lawson C. | 1 | 2 | 3 |
| Snedden, Michael H. | 16 | 11 | 27 |
| Snyder, Barry J. | 0 | 8 | 8 |
| Soares, Manuel | 12 | 16 | 28 |
| Song, Suzette J. | 1 | 7 | 8 |
| Sotos, Peter N. | 1 | 18 | 19 |
| Spellman, William H. | 1 | 0 | 1 |
| Spinuzza, Philip J. | 2 | 14 | 16 |
| Stabile, Mark L. | 2 | 7 | 9 |
| Steinfeld, Paul H. | 9 | 19 | 28 |
| Stollsteimer, George T. | 0 | 19 | 19 |
| Stoudt, Calvin D. | 5 | 1 | 6 |
| Strzelecki, Zigmund F. | 4 | 8 | 12 |
| Stuart, Wayne C. | 1 | 1 | 2 |
| Suhey, Paul V. | 1 | 28 | 29 |
| Sullivan, Anne C. | 0 | 1 | 1 |
| Sullivan, Craig A. | 6 | 12 | 18 |
| Sunday, James M. | 2 | 2 | 4 |

| Surgeon | Hip Cases | Knee Cases | Total Cases |
|---------------------------|-----------|------------|-------------|
| Swanson, Ernest W. | 5 | 15 | 20 |
| Tase, Douglas S. | 1 | 15 | 16 |
| Terhaar, Peter J. | 3 | 11 | 14 |
| Thompson, Linda G. | 6 | 19 | 25 |
| Tissenbaum, Allan | 3 | 20 | 23 |
| Tonnies, David A. | 8 | 21 | 29 |
| Trabulsi, L. Richard | 1 | 3 | 4 |
| Trager, Stuart L. | 1 | 4 | 5 |
| Tran, Vinh Binh | 4 | 13 | 17 |
| Trevlyn, Dean W. | 3 | 18 | 21 |
| Trubia, Joseph R. | 1 | 4 | 5 |
| Tucker, Jon B. | 1 | 22 | 23 |
| Tuckman, Alan S. | 0 | 1 | 1 |
| Uberti, Edward J. | 5 | 12 | 17 |
| Vanett, Bruce B. | 0 | 1 | 1 |
| Vasilakis, Chris | 2 | 5 | 7 |
| Vermeire, David A. | 0 | 3 | 3 |
| Vresilovic Jr., Edward J. | 3 | 2 | 5 |
| Wang Jr., Peter | 1 | 4 | 5 |
| Ward, Michael J. | 1 | 1 | 2 |
| Watson, Anthony D. | 0 | 4 | 4 |
| Welker, David M. | 0 | 1 | 1 |
| Whittaker, Joseph M. | 12 | 16 | 28 |
| Whittaker, Richard P. | 6 | 2 | 8 |
| Winslow, Michael A. | 0 | 1 | 1 |
| Witkin, Evelyn D. | 1 | 3 | 4 |
| Wolf Jr., John H. | 16 | 13 | 29 |
| Wolfe, Raymond M. | 7 | 12 | 19 |
| Wong, Roger Y. | 6 | 10 | 16 |
| Woods, Lon D. | 5 | 4 | 9 |
| Woods, Robert M. | 9 | 8 | 17 |
| Wukich, Dane K. | 4 | 5 | 9 |
| Yanicko Jr., Daniel R. | 0 | 1 | 1 |
| Yardley, Trevor W. | 7 | 12 | 19 |
| Yarus, Lance O. | 0 | 4 | 4 |
| York, John H. | 8 | 17 | 25 |
| Yucha, Thomas J. | 3 | 9 | 12 |
| Zamarin, Richard I. | 5 | 15 | 20 |
| Zeliger, Keith L. | 8 | 19 | 27 |
| Ziegler, Richard W. | 4 | 11 | 15 |
| Zimet, Daniel L. | 9 | 14 | 23 |
| Zimmerman, Marc S. | 1 | 4 | 5 |
| Ziran, Bruce H. | 2 | 4 | 6 |



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