



American Joint Replacement Registry

Executive summary of 2019 annual report

The American Joint Replacement Registry (AJRR) joined the American Academy of Orthopedic Surgeons (AAOS) Registry Program as the inaugural registry in 2017. With oversight from the AAOS Registry Oversight Committee and the AJRR Steering Committee, AJRR continues to work toward the AAOS registry goal. Since then, the AAOS Registry Program has continued to grow adding registries from other anatomic sites and orthopedic areas including the Shoulder & Elbow Registry and Musculoskeletal Tumor Registry while maintaining AJRR as the cornerstone.

The past year has been marked by a multitude of successes and growth for AJRR. This Annual Report represents over 1.5 million hip and knee procedures and over 1200 enrolled sites with an overall cumulative procedural volume growth of 28.5% compared to the previous year. Much attention has been paid ensuring AJRR maintains as the national registry for total joint arthroplasty. Additional highlights for the year include the following:

Ambulatory surgical centers (ASCs) have historically not been strongly represented in AJRR as much of the procedural information in the Registry has come from hospitals. Wanting to provide ASCs and private practices access to data quality, analysis, and benchmarking, AAOS began implementing plans to better serve these sites. The first step was to focus on actively recruiting, educating, and engaging ASCs. This strategic refocus has been successful, as the number of ASCs participating in the Registry grew by 38.7% between July 1, 2018 and August 1, 2019. To continue this trend, AAOS partnered with the Ambulatory Surgery Center Association and began a pilot program that provides the data submission framework necessary for ASCs with low-volume and/or limited technical capabilities. This partnership enables ASCs to demonstrate their value as viable sources of healthcare.

Patient-reported outcome measures (PROMs) are increasingly being utilized to evaluate success of a hip or knee arthroplasty procedure. Many orthopedic stakeholders are finding benefit in capturing this patient perspective to best provide a full picture for surgical outcome evaluation. Recognizing this, AJRR has made a commitment to facilitating capture of this useful data. Specifically, AJRR continues to support the RegistryInsights PROM platform for facilities to easily collect and upload PROM submissions to the Registry. Additionally, AJRR has formed multiple partnerships, expanding our Authorized Vendor Program, to include even more PROM technological vendors. These efforts have led to substantial growth in PROMs capture. By the end of 2018, 61 sites out of 821 (7.4%) submitted PROMs, compared to 6.3% the year prior. As of June 30, 2019, this number has more than doubled to 155.

Tracking and monitoring outcomes with longitudinal patient information continues to be a focus of the AAOS Registry Program. To help sites best utilize Registry data for this purpose, RegistryInsights has been expanded and enhanced over the past year. This allows individual participating institutions access to their own

real-time dashboard comparing their metrics to the AJRR national benchmark. Separately, the sites' surgeons have the ability to view their own dashboard based on data submitted on procedures they performed. Finally, for those needing more custom capabilities, AJRR offers either sites of service or surgeon-specific custom reports. This past year, AJRR has provided these reports allowing surgeons and participating institutions the ability to reuse their Registry data for internal performance measures or benchmarks.

Publications and presentations based on AJRR data have been an important focus of AJRR over the past year through continuing education presentations at the 2019 National Association of Orthopedic Nurses annual meeting to podium presentations and posters at the 2018 American Association of Hip and Knee Surgeons, 2019 AAOS, 2019 International Society of Arthroplasty Registries, 2019 The Knee Society, and 2019 The Hip Society Annual Meetings. Topics have included PROMs, infection, femoral neck fixation, migration, dual mobility, and more. This year, AJRR has been fortunate to publish in a number of peer-reviewed journals. The articles include "Perioperative periprosthetic femur fractures are strongly correlated with fixation method: an analysis from the American Joint Replacement Registry (AJRR)" (Journal of Arthroplasty), "Early results from the American Joint Replacement Registry: a comparison with other national registries" (Journal of Arthroplasty), and "What are the migration patterns for U.S. primary total joint arthroplasty patients?" (Clinical Orthopedics and Related Research)."

The ability to reuse registry data to enable performance measurement as well as facilitate national registry-driven quality improvement programs has been a concentration of the Registry over the past year. Now, AJRR data can be reused toward the following:

- The Joint Commission (TJC) Advanced Certification for Total Hip and Total Knee Replacement
- American Board of Orthopedic Surgeons (ABOS) Maintenance of Certification (MOC) program for Part II Self-Assessment Examination (SAE) credit
- Centers for Medicare & Medicaid Services (CMS) Bundled Payments for Care Improvement Advanced (BPCI-A) for the 2021 reporting year
- CMS Comprehensive Care for Joint Replacement (CJR) Model
- CMS Merit-based Incentive Payment System (MIPS) Promoting Interoperability (PI) and Quality Payment Program (QPP)
- Accreditation Association for Ambulatory Health Care (AAAHC) Advanced Orthopedic Certification
- BlueCross BlueShield Blue Distinction Specialty Care
- Blue Shield of California waiver of prior authorization for their patients' hip or knee replacement procedures
- Bree Collaborative

- DNV GL Orthopedic Center of Excellence
- The Alliance QualityPath

To find out more about these and other ways to reuse Registry data please click [here](#).

2019 AJRR annual report highlights

The 2019 AJRR Annual Report represents 1,525,435 primary and revision hip and knee arthroplasty procedures performed between 2012 and 2018. Primary knee (54.4%) and primary hip (32.7%) procedures made up the majority. Sex breakdown was 59.0% female and 41.0% male for all cases. The average age of a hip arthroplasty patient was 67.4 and 66.7 years for all knee cases. Most of the patients in the data were white (72.1%) although race was unreported in 18.7% of cases. Among AJRR surgeons performing elective primary total hip arthroplasty and separately total knee procedures, the mean procedure count was 32.0 and 44.8 respectively.

Many trends identified in previous AJRR Annual Reports remain consistent. For hip arthroplasty procedures, there is still a trend toward increased ceramic heads and enhanced polyethylene liners. Usage of dual-mobility constructs has continued to increase in both the primary and revision setting and for the treatment of femoral neck fractures while hemiarthroplasties still predominate,

total hip arthroplasty usage has increased. For total knee arthroplasties, the number of medial and lateral unicompartmental knee arthroplasty procedures still remains low at just 2.2% of all primary knee arthroplasties reported to AJRR for 2018. Although cemented fixation still predominates, the use of cementless fixation has seen an overall increase since 2012. Similar to past years, more than half of all primary total knee arthroplasty procedures in 2018 utilized posterior stabilized implants and there has been little change in the use of mobile-bearing designs in the revision setting which fluctuates from 17.0% to 19.1%.

Finally, enhanced analytics is always the goal of each Annual Report. With the continued growth of AJRR, analyses with Registry data will continue to mature. This year represents the second year completing survivorship curves and utilizing CMS data. Much time was spent establishing a consensus-driven methodology determined by multiple stakeholders. This framework provides a foundation ensuring strength in all analyses moving forward, progressing toward more sophisticated and detailed survivorship curves in the future.

Link to 2019 American Joint Replacement Registry annual report: <http://ajrr.net/publications-data/annual-reports>.

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