Anne Arundel Medical Center is located in Annapolis, the state capital of Maryland, which is rich in history. Our beautiful facility includes all private rooms, free parking and is easily accessible from major highways.
Dear Colleague:

Welcome to the inaugural Anne Arundel Medical Center Joint Center Outcomes Report. It contains a summary of data for pain and mobility, length of stay (LOS), patient satisfaction, surgical approach and more. We use this data to manage clinical improvements and patient satisfaction across the full continuum of care.

The AAMC Joint Center is comprised of a multi-disciplinary team of both operative and non-operative specialists who provide care for patients at every stage of their hip and knee pain. Consistently remaining the busiest joint replacement program in the state, AAMC now performs more than 1,900 surgeries a year. Patients come from all over Maryland and neighboring states to regain independence and improve their quality of life.

This report is designed to highlight our program by providing accurate and timely information about patient care. We believe that publishing healthcare outcomes will result in a culture of continuous improvement and increasing value for patients.

Our goal is to increase the depth and breadth of reporting. Each year we are committed to updating our program summary to demonstrate continuous progress.

Respectfully,

Paul J. King, MD
Director, AAMC Joint Center
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Contact

We invite you to learn more about the AAMC Joint Center online at askAAMC.org/Joint.

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As a regional center of excellence, the joint program at Anne Arundel Medical Center has cared for patients from 27 states and the District of Columbia over the past 5 years.

- **1,907** Joint procedures performed in 2014*, the most in Maryland.
- **1,103** More procedures than the second busiest program in Maryland over the past 5 years.
- **9.5%** Lower average length of stay** (ALOS) than the Maryland hospital average over the past 5 years.
- **16.6%** Lower charge per case than the Maryland hospital average over the past 5 years.

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* 2014 fiscal year (July 2013-June 2014)
**Case mix adjusted
IN SUMMARY

Considered a national model of knee and hip replacement, Anne Arundel Medical Center’s program has grown to be one of the largest in the region. Through relentless attention to improving care, AAMC continues to advance quality, decrease cost, and excel in patient satisfaction.

This outcomes report includes clinical, quality and cost data. We are reporting using fiscal years (July-June), including FY’14. Areas highlighted include:

- **VOLUME GROWTH** of 6% annually for the past five years. In our most recent year, a record number of 1,907 knees and hips were replaced.

- **CONTINUOUS PERFORMANCE IMPROVEMENT**, resulting in decreased length of stay, collaboration between anesthesiologists and surgeons on multimodal pain management, and decreased costs. These were achieved by streamlining processes throughout each patient’s continuum of care, from their initial visit to the surgeon’s office to their post-operative rehabilitation plan.

- **SPECIALIZED STAFF**, including nurses—who have received Magnet® designation—in the operating room to inpatient unit along with dedicated therapists providing prehabilitation, inpatient and post-discharge care.

- **A NURSE NAVIGATOR** who coordinates care and education

- **A PATIENT- AND FAMILY-CENTERED APPROACH** for patient education and engagement. Our patient satisfaction ranks in the top 5% nationally.

- **INVESTIGATOR INITIATED AND SPONSORED CLINICAL TRIALS** to support innovation, training and technology development. Our innovation lab, the SAIL Center, offers opportunities for cadaver labs, simulation training, research and education.

- **CLINICAL SPOTLIGHT ON THE ANTERIOR HIP APPROACH**, a muscle sparing technique which is frequently sought by patients.

As Maryland’s leader in joint replacement, Anne Arundel Medical Center continues to advance outcomes and build all our care processes around our patients.
AAMC performed 1,907 joint replacements in 2014*, more than any other hospital in Maryland.

* 2014 fiscal year (July 2013-June 2014)
AAMC JOINT VOLUME: 5-YEAR TREND

Hip and knee procedure volume at AAMC has grown 6% annually over the past 5 years.

MARYLAND JOINT VOLUME: 5-YEAR CUMULATIVE COMPARISON TO TOP TEN MARYLAND HOSPITALS

Over the past 5 years, AAMC has completed 8,221 joint replacements, the most in the state of Maryland and 15% more than the second busiest program in the state. During this time, AAMC performed 55% more joint procedures than the average of the top ten programs in the state of Maryland.
The AAMC Joint Center is recognized for its dedication to high quality, as measured by shorter average length of stay (ALOS), increased mobility with a decrease in pain, high patient satisfaction, continual increase in volume and low cost.
The AAMC Joint Center is led by a core group of fellowship-trained surgeons who lead monthly multidisciplinary team meetings where every aspect of the care process is reviewed. Continuous performance improvement initiatives have led to enhancements in all our care processes, from the initial meeting in the surgeons’ office, throughout patients’ hospitalization and follow-up care.

Multimodal pain management during and after surgery nearly eliminates the use of intravenous post-operative narcotics, reducing related side effects and allowing patients to move more quickly.

AAMC is 6.3% lower than the state on average over the past 5 years.

AAMC is 11.1% lower than the state on average over the past 5 years.
Surgeons and staff **collaborate in continuing education** efforts to constantly review complex cases, new technology and equipment and advances in the field of joint replacement.

Orthopedic staff at AAMC includes **11 surgeons** performing joint replacement procedures with our **orthopedic team anesthesiologists**.

**Preoperative and intraoperative surgical nurses**, who exclusively work on the joint team, manage the surgical and throughput processes guided by performance-based metrics to continuously measure quality.

**Our team includes** inpatient nurses, rehabilitation medicine specialists, physician assistants and care management and discharge planners. Our dedicated inpatient physical and occupational therapists manage all therapy needs, including same day evaluation and walking as appropriate, in collaboration with each patient’s surgeon.

**5-YEAR CASE WEIGHT ADJUSTED ALOS FOR HIPS AND KNEES (DAYS)**

AAMC’s case mix adjusted ALOS was 9.5% lower than the Maryland hospital average over the past 5 years.
The ALOS for total hip procedures was 2.43 days over the last year. The ALOS has declined by 4% over this period.

The ALOS for total knee procedures was 2.58 days over the last year. The ALOS has declined by 21% over this period.

The % of hip procedures with a 1 day LOS increased by 28.3 percentage points over the last year.

The % of knee procedures with a 1 day LOS increased by 19.5 percentage points over the last year.
Mobility and Pain

The AAMC Joint Center has obtained patient reported outcomes on thousands of patients, studying data from the preoperative period throughout the first year postoperatively. We use the outcomes data to study and improve our care processes. Using tools such as the Modified Harris Hip Score and the Knee Society Score, we have been able to measure our quality continuously.

MODIFIED HARRIS HIP SCORES

The Modified Harris Hip Score evaluates hip function related to pain and mobility. It is widely used to evaluate both the rate of improvement and overall success of hip surgery. We found that our patients averaged a 52 point increase from preoperative score of 37.5 to a score of 90.4 of a possible 91 within three to six months postoperatively after hip replacement.

KNEE SOCIETY SCORES

The Knee Society Score looks at both patient reported function and objective measurements of knee alignment, stability, and motion. A maximum score of 100 is possible for both the patient reported function and surgeon reported objective findings. On average our patients’ score for surgeon reported objective findings increased by 41 points and for patient reported function by 53 points three to six months postoperatively after knee replacement.

Abnormality is measured by: range of motion, pain, contracture, alignment and stability. Functionality is measured by: walking, stairs and the use of aids.
Patient Satisfaction

TOP 5% IN THE NATION
compared to other joint replacement programs.

The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) provides a standardized survey for measuring patients’ perspectives on hospital care and overall satisfaction. The tool measures key topics including communication, responsiveness, pain management, hospital environment, discharge information and transition of care. AAMC ranks in the 95th percentile of joint replacement programs in the nation.

*Surveys are from patients discharged between July 2013 and June 2014.

AAMC Joint Center Patient Demographics

64.79 is the average age of AAMC Joint Center patients.

29.52 is the average BMI of AAMC Joint Center patients.

![Gender Demographics](chart)

- **Joint Gender**
  - Male 41%
  - Female 59%

- **Hip Gender**
  - Male 44%
  - Female 56%

- **Knee Gender**
  - Male 38%
  - Female 62%
The AAMC Joint Center demonstrates a strong commitment to providing high quality, low cost care.
The AAMC Joint Center leverages its high volume and lean methodologies to provide efficient care at a low cost per patient. An interdisciplinary team, including clinical and performance improvement staff, continually evaluate operations to ensure that patient care is delivered in the most streamlined manner, while our large case volume is utilized to secure the best possible pricing for supplies and implants. These initiatives translate into tangible savings for our patients in comparison to other Maryland hospitals.

5-YEAR AVERAGE CHARGE PER CASE

AAMC’s charge per case was 16.6% lower than the Maryland hospital average over the past 5 years.

AAMC Joint Center performance improvement initiatives completed to date:

› Expanded joint operating room teams

› Utilized electronic medical records (EMR) to streamline discharge processes and facilitate communication across the care team

› Achieved 1 day length of stay (LOS) for appropriate patients

› Improved surgeon office practices to include care management planning at the time surgery is scheduled

› Maximized the percentage of patients receiving same day post-operative physical therapy
Clinical Profile

ANTERIOR HIP REPLACEMENT

The anterior hip replacement procedure is done without having to cut any muscles around the hip, which may result in a quicker recovery and a lower risk of dislocation after surgery.
The majority of the hip replacements performed at the AAMC Joint Center are now done through the direct anterior approach. This procedure is done in the supine position with an anterior incision, utilizing an intermuscular and internervous interval between the tensor fascia lata and sartorius. The procedure is performed on a highly specialized operating room table, under real-time fluoroscopic guidance.

The procedure is done without having to cut any muscles around the hip. Patients often ambulate the same day as surgery and may experience a quicker return to function. The use of fluoroscopy during the procedure allows for very accurate placement of the prosthesis, and may decrease the risk and magnitude of post-operative leg length discrepancy that is sometimes associated with hip replacement surgery. The procedure, which is technically more difficult, should only be done by a team with adequate training and experience. The surgeons who are performing the procedure at AAMC have extensive training and experience with this technique.

Lou and Phyllis LaBorwit of Bowie are serious walkers. They are the only Americans to complete The Great Outdoors Challenge more than 10 times. The Challenge includes backpacking 200 miles across the Northern Highlands of Scotland on foot over 15 days, carrying 30 pounds of goods and equipment.

Dr. LaBorwit, a retired audiologist, had pain in his left hip for about a year, and it was affecting his gait, back and knees. He attended an AAMC joint seminar, where he met the AAMC Joint Center team.

Shortly thereafter he underwent hip replacement. His surgeon used the direct anterior hip procedure, which avoids the division of hip muscles through the use of a special table that allows the surgeon to manipulate a patient’s leg in precise positions.

Two months later, Dr. LaBorwit and his wife completed a 10-mile hike along the C&O Canal. A year later, they completed their combined 29th trek across Scotland.
AAMC serves the community through investigator-initiated and sponsored clinical trials. Trials include those to assess short- and long-term clinical outcomes in state-of-the-art prostheses.
The AAMC Joint Center is actively involved in numerous clinical research projects focusing on perioperative care and outcomes after surgery. Ongoing studies are evaluating the potential benefits of very early ambulation after joint replacement surgery and how to safely and quickly return patients to their home environment after surgery. We collect substantial amounts of blinded data on each case, which we carefully study for ways to improve care processes. Surgeons meet frequently to discuss complex or challenging cases and ongoing research projects with their peers and with the multidisciplinary team, focusing on continual process improvement. A full-time clinical research coordinator oversees the projects and is a resource for patients interested in clinical trials.

Clinical trials aim to improve quality of care, provide the most current innovative treatment options and the ultimate advancement of orthopedic surgery.

Our high volume and integrated care processes have made us a sought after partner for industry sponsored research projects. We have been recruited to participate in ongoing multi-center, international trials designed to study the long-term outcomes of FDA approved modern implants.

Our surgeons are regularly invited to present their ongoing research and expertise in the area of joint replacements in a variety of settings, and frequently sponsor and teach courses about joint replacement topics in the James and Sylvia Earl SAIL Center.

At the SAIL Center, our medical and surgical simulation and training facility, we offer a sophisticated surgery simulation lab where physicians, nurses and other healthcare professionals can get lifelike training on the latest medical and surgical technologies. We seek to improve the delivery of healthcare and the practice of medicine by offering cadaver labs, teleconferences, lectures, research, and large group sessions for surgical education. Through a variety of partnerships, industry sponsored cadaveric courses have been held for orthopedic and other specialty surgeons. Additionally, the SAIL Center offers opportunities for clinical research to foster creation, co-development and evaluation. Learn more about the SAIL center at askAAMC.org/SAIL.
Centered on Patients

All of our care processes have been designed around the patient; from the decision to have surgery to their post-operative care, we provide an integrated, surgeon-led plan with specialized care teams built around each phase of care.
A dedicated nurse navigator oversees all phases of the patient experience and care.

Patient preparation and education are a team effort.

Customized prehabilitation physical therapy programs ensure patients are prepared.

Patient and coach reunion luncheons provide feedback to continually improve care.

We partner with community physical therapists, including AAMC’s five physical therapy locations.

Operating room teams participate in monthly surgeon led education. Surgeons serve as a referral base for other orthopedic surgeons for complex and revision procedures.

Our operating room and inpatient nurses—who have received Magnet® designation—are dedicated to joint replacements.

Former AAMC Joint Center patient volunteers participate in the care of the patients during recovery.

Hackerman-Patz House, our on campus hospitality house, allows patients and families to stay close by.

Focused orthopedic rehabilitation teams care for all inpatients in collaboration with the surgeon and nursing team.
About Us

AAMC JOINT REPLACEMENT SURGEONS

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Stephen Faust, MD
Justin Hoover, MD
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A not-for-profit regional health system headquartered in Annapolis, Maryland, Anne Arundel Medical Center serves an area of more than one million people. AAMC is recognized for orthopedic care, emergency heart attack response and cancer care. A leader in women’s services, AAMC ranks second in Maryland for number of births annually and has a Level III neonatal intensive care unit.

FACTS AND FIGURES FISCAL YEAR 2014 (July 2013–June 2014)

- Total licensed beds .................384
- Pathways, substance use and mental health treatment ..........40
- Inpatient admissions ........26,395
- Surgeries .........................21,910
- Joint replacements ..............1,907
- Births ....................................5,379
- Emergency visits ...............93,475
- Outpatient visits ..............102,000+
- Medical staff .....................1,000+
- Employees .........................4,000+
- Operating revenue .... $590 million

- The state’s third busiest hospital (measured by inpatient discharges)
- Outpatient locations in Bowie, Kent Island, Pasadena, Odenton, and Waugh Chapel
- A multi-specialty medical group in 40+ locations throughout the region
- An accountable care organization (ACO) participating in the Medicare Shared Savings Program
- A research institute with a simulation and innovation center

HONORS

- Magnet® Recognition by the American Nurses Credentialing Center (ANCC)
- Delmarva Foundation Excellence Award for Quality Improvement
- Exemplar recognition for family presence awarded by the Institute for Patient- and Family-Centered Care (IPFCC)
- Top 25 of the Nation’s Best Practices in Patient and Family Centered Care by the Caregiver Action Network
- HealthStream Award for Highest Community Perception of Quality
- Association of Community Cancer Centers Innovator Award
- Maryland Patient Safety Center Circle of Honor Award