Inova Joint Replacement Center
2014 Annual Report

At a Glance

Inova Mount Vernon Hospital*
Home to Inova Joint Replacement Center

<table>
<thead>
<tr>
<th>Metric</th>
<th>Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Licensed hospital beds</td>
<td>237</td>
</tr>
<tr>
<td>Emergency room visits</td>
<td>40,899</td>
</tr>
<tr>
<td>Outpatient surgeries</td>
<td>1,547</td>
</tr>
<tr>
<td>Admissions</td>
<td>10,568</td>
</tr>
<tr>
<td>Employees</td>
<td>1,013</td>
</tr>
<tr>
<td>Volunteers</td>
<td>367</td>
</tr>
<tr>
<td>Volunteer hours</td>
<td>37,869</td>
</tr>
<tr>
<td>Active physicians</td>
<td>377</td>
</tr>
<tr>
<td>Medical specialties</td>
<td>30+</td>
</tr>
<tr>
<td>Dedicated joint replacement staff</td>
<td>60+</td>
</tr>
</tbody>
</table>

*2014 statistics
Medical Director’s Message

I am pleased to present the Inova Joint Replacement Center’s (IJRC) Annual Report for 2014. With continuously advancing capabilities and state-of-art services and procedures, the Center remains in the forefront of joint replacement technology worldwide.

IJRC at Inova Mount Vernon Hospital is the largest single hospital-based program in the Mid-Atlantic region. Our joint replacement specialists perform more than 2,200 surgeries annually. Our patients, who come from every state and over 30 countries worldwide, benefit from our advanced joint replacement techniques and technologies that enable our physicians to perform ultra-precise, minimally invasive procedures, thus improving outcomes and long-term effectiveness.

Inova Mount Vernon Hospital is one of a very few programs in the Commonwealth of Virginia to earn the Gold Seal of Approval™ for hip and knee replacements. This special designation means that the Inova Joint Replacement Center has met or exceeded rigorous quality standards. This Gold Seal of Approval™ also allows patients to make informed decisions about where they might seek to have joint replacement surgery performed. We are truly proud of our joint team for achieving this award in 2008 and being recertified for the Gold Seal in 2011 and 2013.

In addition to board-certified orthopedic surgeons, our skilled staff includes a team of specially-trained nurses, therapists and healthcare professionals who work together to ensure that patients receive high-quality care tailored to meet their individual needs. Our commitment to quality shows in our outcomes — IJRC average lengths of stay, rates of patients going directly home, and patient satisfaction scores consistently and significantly outperform national averages.

Because of this commitment to excellence, through our focus on our patients, and by remaining steadfast to our clinical pathways, we provide the highest-quality care and superior clinical outcomes to our joint replacement patients.

Thank you for allowing me this opportunity to share the fine work of the Inova Joint Replacement Center.

C. Anderson Engh, MD
Medical Director
Inova Joint Replacement Center
Inova Mount Vernon Hospital
Working collaboratively with the Inova Joint Replacement Center, the Anderson Orthopaedic Research Institute (AORI) conducts clinically-relevant research related to hip and knee implants to improve the care and quality of life for current and future joint replacement patients. To evaluate contemporary bearing surfaces, implant designs and surgical techniques, AORI is conducting prospective, randomized clinical trials to determine how different types of hip replacements, surgical procedures and post-operative management strategies affect patient outcome. AORI is also conducting studies to evaluate the outcome of different knee replacement designs, surgical techniques and implant fixation methods. AORI’s clinical trials offer patients the option to receive cutting-edge technology and the results of the studies provide important information that supports the practice of evidence-based medicine. Using data from thousands of joint replacement procedures archived in an institutional database, AORI also tracks the outcome of particular implant designs and investigates mechanisms that contribute to failure. In addition to conducting its own research, AORI participates in multi-center studies with other institutions including the Harris Orthopaedics Lab at Massachusetts General Hospital, the Scripps Clinic in La Jolla, California, the Washington University in St. Louis, Missouri, the OrthoCarolina Research Institute in Charlotte, North Carolina, the Office of Science and Engineering Laboratories at the United States Food and Drug Administration and the London Health Science Centre at the University of Western Ontario in Canada.

Among its most important research results published during 2014, AORI found that the cobalt and chromium levels in the blood of patients who received hip replacements with metal-on-metal bearings were elevated compared to patients who received metal-on-polyethylene (plastic) bearings. Patients with metal-on-metal hips that had large diameter (36-mm) femoral heads also showed increasing blood metal levels between two and five years after surgery. As a consequence, the physicians affiliated with AORI are continuing to monitor the outcome of all patients who have had metal-on-metal hip replacements. The findings from other studies demonstrated that a portable compression device worn by hip and knee replacement patients after surgery was associated with a high (94.7%) satisfaction rate and prevented symptomatic venous thromboembolism (blood clots) with an effectiveness that was similar to pharmacological medications. To ensure that AORI’s findings are available to the worldwide orthopaedic community, AORI-affiliated physicians publish their studies in medical journals, author book chapters and present their findings at national and international orthopaedic meetings. In 2014, 21 papers and two book chapters were published. Forty-four talks and five posters were also presented at scientific meetings.

Accreditation and Awards

Inova Mount Vernon Hospital, home to Inova Joint Replacement Center, is accredited by The Joint Commission.

Inova Mount Vernon Hospital has earned a Gold Seal of Approval™ for outstanding care in hip and knee replacements by The Joint Commission, the national accrediting organization for hospitals and healthcare facilities. To earn this distinction in joint replacement the Center underwent an extensive, on-site evaluation by a team of reviewers from the Joint Commission.

Inova Joint Replacement Center is one of only a few programs in the Commonwealth of Virginia to earn the Gold Seal of Approval™ for hip and knee replacements. This special designation, originally awarded in 2008 and again recertified in 2011 and 2013, means that Inova Mount Vernon Hospital’s Inova Joint Replacement Center met rigorous quality standards and performed well in patient and staff interviews. The Gold Seal of Approval™ will also help patients make informed decisions about where they seek joint replacement surgeries.

The Inova Joint Replacement Center Team includes:

- Board-certified orthopedic surgeons specializing in joint replacement surgery
- Nurses who work solely with joint replacement patients and have advanced certifications in orthopedics, pain management and geriatrics
- Physical therapists who work solely with joint replacement patients
- Case managers who monitor patient pathways pre-surgery to post-discharge
- Volunteers who have had joint replacement surgery and who counsel patients
- Special planning teams of physicians, nurses and operating room staff that review each case and provide input before surgery
- Inova Rehabilitation Center and Inova VNA Home Health specialists who provide additional services after surgery
- Administrative support staff who keep the unit running smoothly
- Orthopedic fellows chosen from among the nation’s brightest young surgeons to learn the Inova Joint Replacement Center’s techniques and protocols
Pre-op Teaching = Better Outcomes = Coach on Board

Statistics show that patients who have an identified coach and receive our pre-op teaching and orientation have better outcomes, with the following specific benefits:

- Significantly less anxiety about surgery and hospitalization
- Better pain management
- Overall decreased length of stay
- Less home health or subacute care
- Increased satisfaction with procedure overall

Patients are encouraged to choose a coach to accompany them beginning with orientation all the way through discharge from the hospital.

In 2014, two-thirds of our patients arranged to have a coach accompany them to pre-op and post-op sessions. Research has shown that an effective coach contributes to shorter hospital stays and increases the likelihood of being discharged directly home.

In 2014, more than 80% of our patients attended an orientation session, viewed an orientation video, or were excused from orientation because they had joint replacement surgery within the past 12 months or were an emergency case.

Patient Satisfaction

91 percent of our patients rate our overall quality of care as very good or excellent.

Joint Replacement Services

The Inova Joint Replacement Center offers a continuum of services designed to make the patient experience as seamless and convenient as possible. These include:

- Single point of contact for all insurance needs
- Pre-op appointments and one-on-one meetings with a care team, scheduled on the same day
- Pre-surgery online orientation
- Rehabilitation services
- Case management services
- Arrangement of special equipment at discharge
- Coordination of home health services
- All private rooms
- Dedicated joint replacement unit

Average Patient Age

In 2013, because of the center’s expertise and reputation for providing specialty case services, the Inova Joint Replacement Center continued to treat a higher percentage of younger patients than the national average.

Percentage of Patients/Patient Age (years) 2014

- 20-29: 0.5% 486
- 30-39: 6.5% 128
- 40-49: 22.6% 447
- 50-59: 24.6% 728
- 60-69: 36.8% 797
- 70-79: 8.4% 167
- 80+: 0.1% 5

All Procedures 2014

- Male: 40.3% 797
- Female: 59.7% 1,181
Discharge Destination: Home

As inpatients at the Inova Joint Replacement Center, our patients receive one-on-one rehabilitation. This reflects our philosophy of preparing our patients to go directly home — where they can recover in familiar and comfortable surroundings — rather than to a nursing facility.

Number of Procedures 2014
Total = 1,978

Directory of Services

<table>
<thead>
<tr>
<th>Service</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial Specialist (insurance/benefits)</td>
<td>703.664.7079</td>
</tr>
<tr>
<td>Inova Blood Donor Services</td>
<td>703.664.7229</td>
</tr>
<tr>
<td>Case Management</td>
<td>703.664.7606 or 7398</td>
</tr>
<tr>
<td>Executive Director, Inova Joint Replacement Center</td>
<td>703.664.7493</td>
</tr>
<tr>
<td>Inova VNA Home Health</td>
<td>571.432.3100</td>
</tr>
<tr>
<td>Inpatient Therapy</td>
<td>703.664.7602</td>
</tr>
<tr>
<td>Joint Replacement Unit (fourth floor)</td>
<td>703.664.7012</td>
</tr>
<tr>
<td>Inova Mount Vernon Hospital main number</td>
<td>703.664.7000</td>
</tr>
<tr>
<td>Joint Navigator Office</td>
<td>703.664.7545</td>
</tr>
</tbody>
</table>

Inova Joint Replacement Center offers tours of its facilities on weekdays. To schedule a tour, call 703.664.7493.