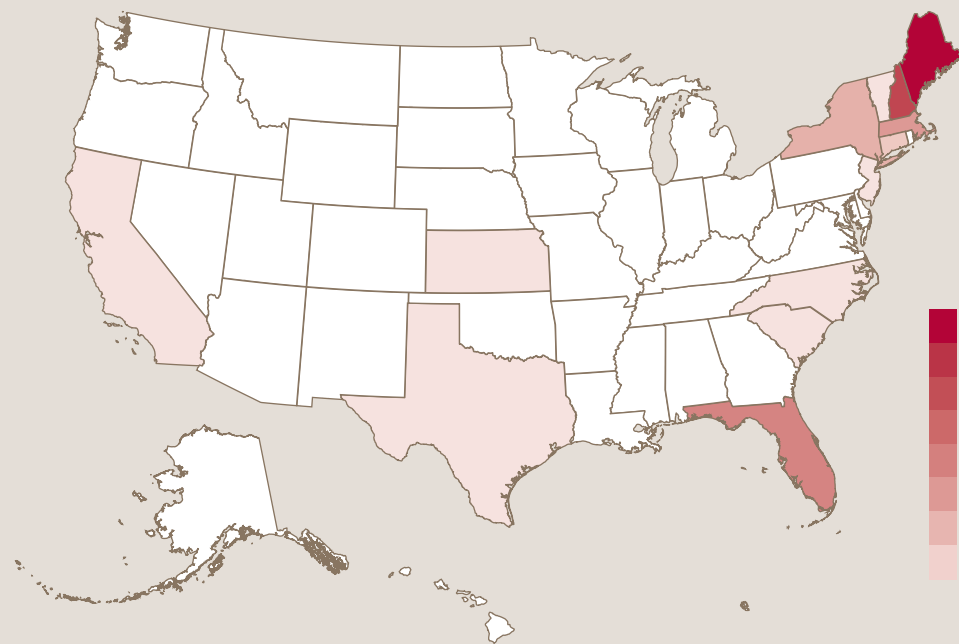


2015 Quality Outcomes Report

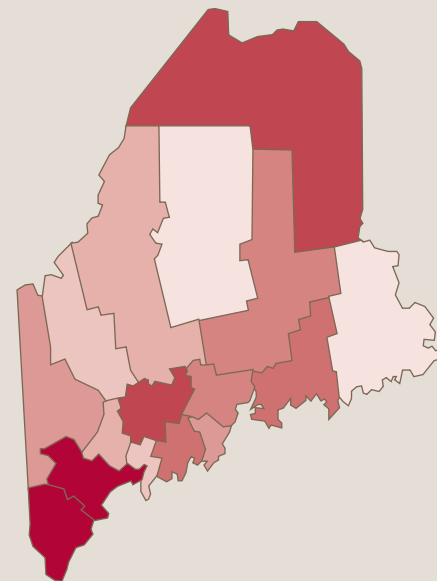


Our Reach & Our Roots

Patients by State
2014



Patients by Maine County
2014



Recognition



Joint Commission Gold Seal of Approval for both Hip and Knee Joint Replacement



2015 Quality Outcomes Report

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Maine Medical
PARTNERS
Orthopedics & Sports Medicine

A department of Maine Medical Center

Maine Medical Center
MaineHealth

centered around you

Northern New England's
leading hip, knee, and
shoulder experts are
right here in Portland

Introduction

Over the last year we have seen the continued growth of our orthopedic offerings at Maine Medical Partners and Maine Medical Center (MMC), as joint replacement and fracture and trauma care were joined by sports medicine. All along, the teams of dedicated people that deliver joint replacement care at MMC have remained justifiably proud of the objective excellence of care each and every one of our patient's receive. Our true focus is to perform the best, most atraumatic hip, knee, and shoulder replacements possible. The program's success is seen through transparent quality data, honestly reported in the following pages. Maine Medical

Partners - Orthopedics & Sports Medicine doesn't simply rest on these laurels, visiting peer joint replacement practices around the country to glean insights into the latest techniques and technologies, ultimately benefitting our patients with developments to come, right here in Maine. Our goal will always be to constantly refine the details of the entire process, measuring our performance through rigorous data collection. This is the foundation that must be laid, in order to realize the true joy of seeing each patient once more down the road, enjoying activities - and living full lives - that they weren't sure would ever be a reality again.



George Babikian, M.D.
Chief of Orthopedics, Maine Medical Center



Providers

GEORGE M. BABIKIAN, M.D.

Fellowship: AO Trauma, Chur, Switzerland
Fellowship: Trauma and Critical Care, Buffalo
Medical School: State University of New York at Buffalo School of Medicine
Residency: State University of New York at Buffalo Consortium

MICHAEL W. BECKER, M.D.

Fellowship: Hospital for Special Surgery
Medical School: State University of New York at Buffalo School of Medicine
Residency: Columbia Presbyterian Medical Center

DONALD P. ENDRIZZI, M.D.

Fellowship: A.S.I.F. Foundation, Regional Kantonsepital, Chur, Switzerland
Medical School: Columbia College of Physicians and Surgeons
Residency: Columbia Presbyterian Medical Center

PETER E. GUAY, D.O.

Medical School: University of New England College of Osteopathic Medicine
Residency: Brighton Medical Center

BRIAN J. MCGRORY, M.D.

Fellowship: Massachusetts General Hospital
Medical School: Columbia College of Physicians and Surgeons
Residency: Mayo Clinic

ADAM J. RANA, M.D.

Fellowship: Hospital for Special Surgery
Medical School: State University of New York Downstate Medical Center
Residency: Boston Medical Center

PAUL J. EVANS, PA-C

RUPI S. GILL, PA-C

ANGELA M. JAGOUTZ, FNP

AMELIA KNOWLES, PA-C

BRIGHAM R. MCKENNEY, MPAS, PA-C

MICHELLE B. STIRLING, FNP

Publications

Our surgeons are heavily involved in research on both a local, and national scale.

Abstracts • 2012-present

Payson A, McGrory BJ, MacKenzie J. High intra-articular cobalt and chromium levels in mechanically assisted crevice corrosion (MACC). Submitted: Orthopaedic Research Society.

Sana M, Morozov P, McGrory BJ, Farrarher SW, Abrahams TG. MRI findings of adverse local tissue reaction due to mechanically assisted crevice corrosion in total hip replacement. Submitted Radiological Society of North America.

Duralde XD, Endrizzi DP. Humeral Resurfacing for Compensated Cuff Tear Arthropathy.

Endrizzi DP, Henry P, Mackenzie JM. Early debris formation with a porous tantalum glenoid component. A radiographic analysis with 2 year minimum follow-up.

Publications • 2012-present

McGrory BJ, McKenney B. Revision for taper corrosion at the head-neck junction: pearls and pitfalls. Accepted: Curr Rev Musculoskelet Med.

Chang J, McGrory BJ, Rana AJ, Becker M, Babikian G, Smith K. Current orthopaedic surgeon practices for non-arthroplasty treatment of osteoarthritis of the adult hip and knee. Accepted: J Surg Orthop Advances.

Tetreault AK, McGrory BJ. Use of locking plates for fixation of the greater trochanter in patients with hip replacement. Submitted: Bone and Joint Journal

Seufert C, McGrory BJ. Treatment of arthritis associated with Legg-Calve-Perthes disease with modular THA. J Arthroplasty. 30(10), 1743-46.

McGrory BJ, MacKenzie J, Babikian G. A high prevalence of corrosion at the head-neck taper with contemporary Zimmer non-cemented femoral hip components. J Arthroplasty. 30, 1265-1268: 2015.

Velott T, McGrory BJ, Rana A. A Second Generation Constrained Acetabular Component for Treatment of Complex Hip Replacement Instability. Current Orthop Practice. 26(2), 136-141: March/April: 2015.

Creighton-Smith M, McGrory BJ, Tolocica I. Permanent Tattooing as a Manifestation of Metallosis in Acetabular Wear-through in THA. Accepted Current Orthop Practice.

Yates A, McGrory BJ, et al. Optimizing the Non-Arthroplasty Management of OA of the Knee. JAAOS.28(3), 245-249: April. 2014.

Rana AJ, Bozic KJ. Bundled Payments in Orthopaedics. Clin Orthop Relat Res. 2014 Feb 20.

Fromson MI, Rana AJ, White RE, Marschall A, Schutzer SF, Healy WL, Naas P, Daubert G, Iorio R, Parsley B: Bundles Payments For Care Improvement Initiative: The Next Evolution of Payment Formulations: AAHKS Bundled Payment Task Force. Journal of Arthroplasty, 2013 SEPT;28(8 Suppl):157-65.

Rana AJ, Patel J, Vira, S. Insall & Scott: Surgery of the Knee, 6th Edition. "New Payment Paradigms".

Gilbert SL, Rana AJ, Lipman JD, Wright TM, Westrich GH. Design changes improve contact patterns and articular surface damage in total knee arthroplasty. The Knee. 2014 Dec;21(6):1129-34. doi: 10.1016/j.knee.2014.07.022.

McGrory BJ. Trochanteric Fixation with Locking Plates. Techniques in Ortho. 28(3), 245-249: Sept. 2013.

Henry PD, Endrizzi DP, Mckee MD. Treatment of Periprosthetic Fractures of the Shoulder. Techniques in Orthopaedics. 28(3): 238-244 Sept 2013.

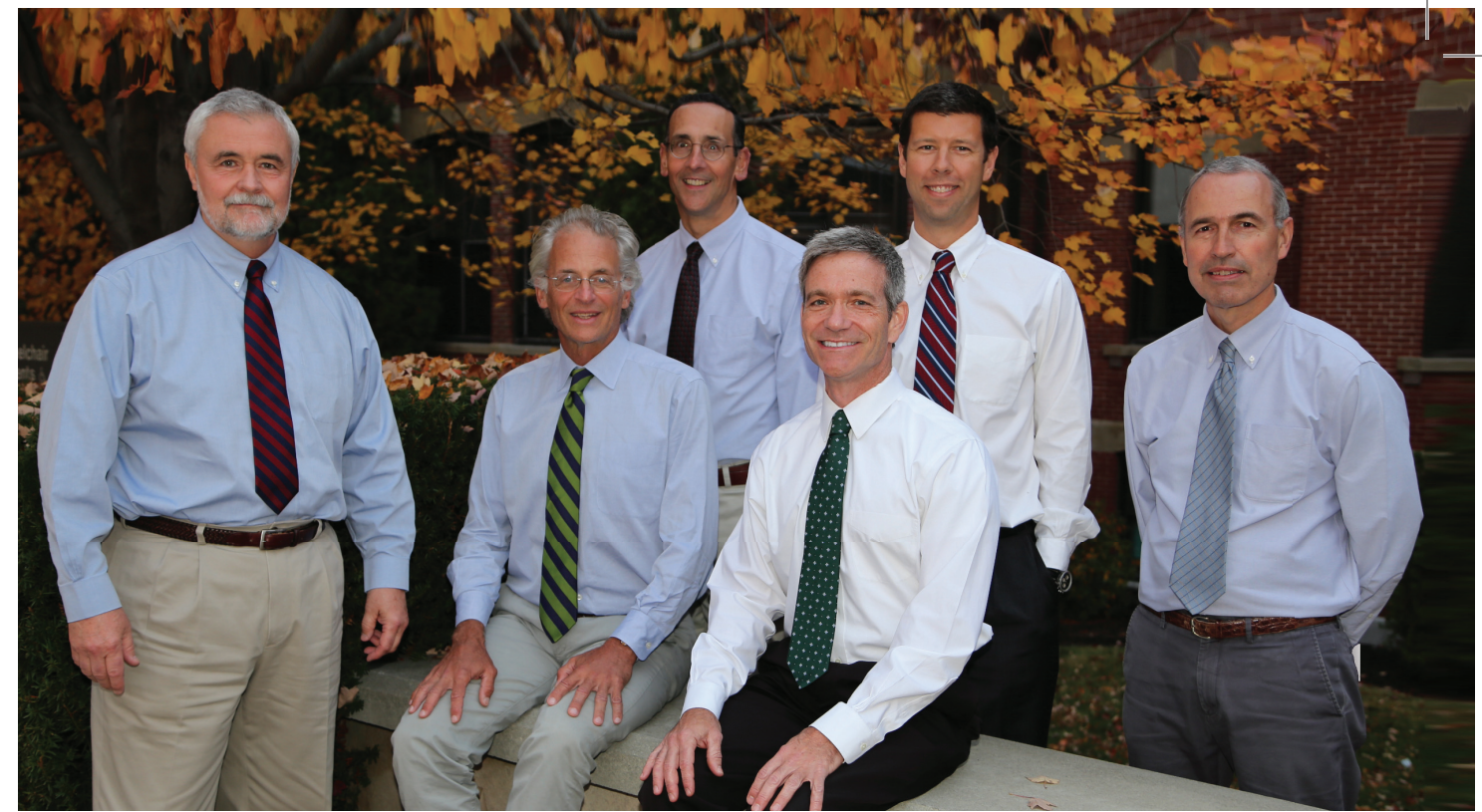
McGrory BJ, Pawar V, Salehi A. Surface Characteristics of retrieved LFIT cobalt-chromium femoral heads with and without dislocation. Current Orthop Practice. 24(5), 498-503: Sept/Oct 2013.

AAHKS Workforce. Obesity and Total Joint Arthroplasty-A Literature Based Review. J Arthroplasty. 28, 714-721: 2013. Rana, AJ

Endrizzi DP, Editor Peter McCann. Biceps Tendon: Tenodesis with Suture Anchor. Video Atlas of Shoulder Surgery. Jaypee Brothers Medical Publishers, Philadelphia, 2013.

McGrory BJ, Ruterbories J, Pawar V, Thomas R, Salehi A. Surface Characteristics of retrieved cobalt- chromium femoral heads with and without ion implantation. J Arthroplasty. 27(1):109-15: 2012.

Endrizzi DP. Better and Better: Adopting Advances in Shoulder Surgery. Am J. Orthop. 41(2) 2012:62.



Pictured (left to right): Peter Guay, D.O., George Babikian, M.D., Donald Endrizzi, M.D., Brian McGrory, M.D., Adam Rana, M.D., Michael Becker, M.D.

2014 JOINT REPLACEMENTS AT A GLANCE

1,704	Joint replacement procedures performed
100%	Board Certified Orthopedic Surgeons
87%	Discharged home
67 years	Average age of our joint replacement patients
53%	Female
3	Operating rooms dedicated to orthopedics

Surgical Case Volume

In 2014, Maine Medical Partners – Orthopedics & Sports Medicine performed 1,704 joint replacements, a 5% increase over 2013, and a 20% increase from 2012.

“Patients managed at hospitals, and by surgeons, with greater volumes of total knee replacement have lower risks of perioperative adverse events following primary total knee replacement”

(Katz et al. 2004).

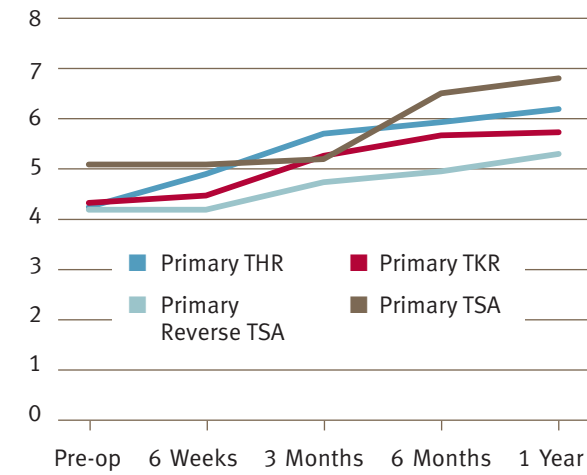
“Patients treated at hospitals, and by surgeons, with higher annual caseloads of primary and revision total hip replacement had lower rates of mortality and of selected complications”

(Katz et al. 2001).

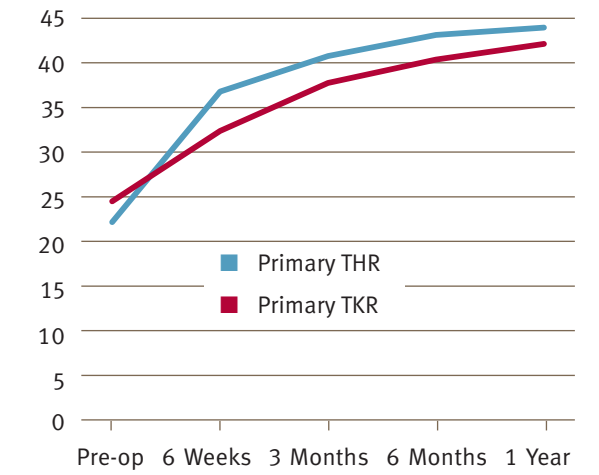
2014 PROCEDURAL VOLUME

All Joint Replacement Procedures	1704
Hip Replacement	930
Primary	821
Anterolateral Minimally Invasive	744
Posterior	43
Bilateral	17
Revision	78
Hip Fracture	31
Total Hip	26
Partial Hip Replacement	3
Knee Replacement	640
Primary	594
Partial Knee Replacement	15
Revision	31
Shoulder Replacement	134
Anatomic	56
Primary Reverse	75
Partial	3

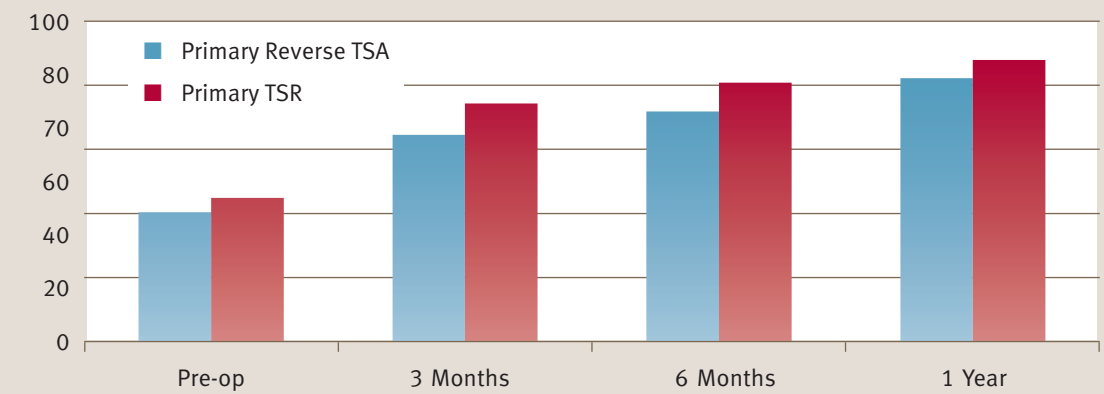
UCLA (Activity) Score by Follow-up Time



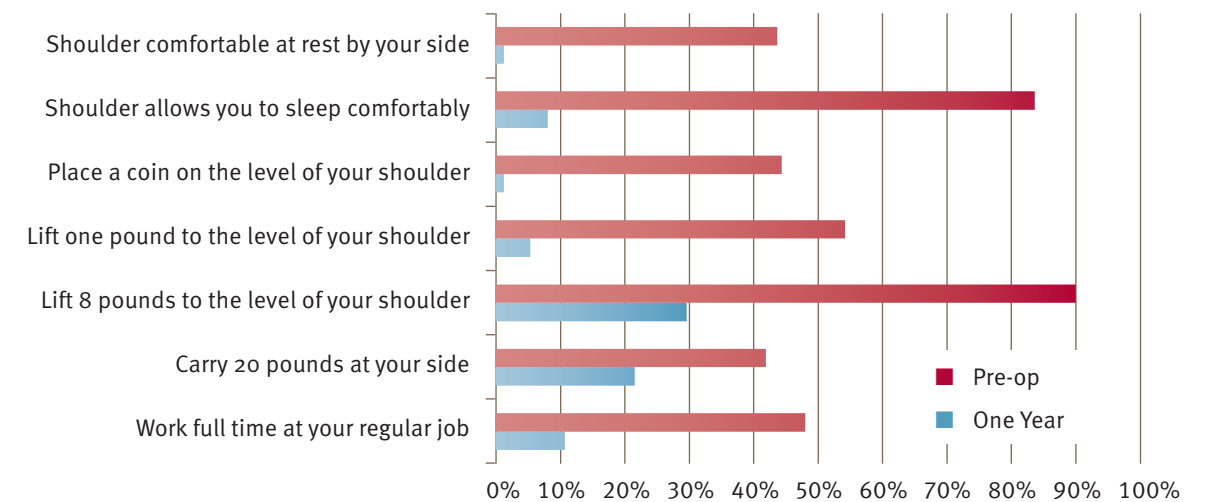
Oxford Score by Follow-up Time



ASES Score (Shoulder Function Score) by Follow-up Time



Percent of Patients Unable (from the Simple Shoulder Test)



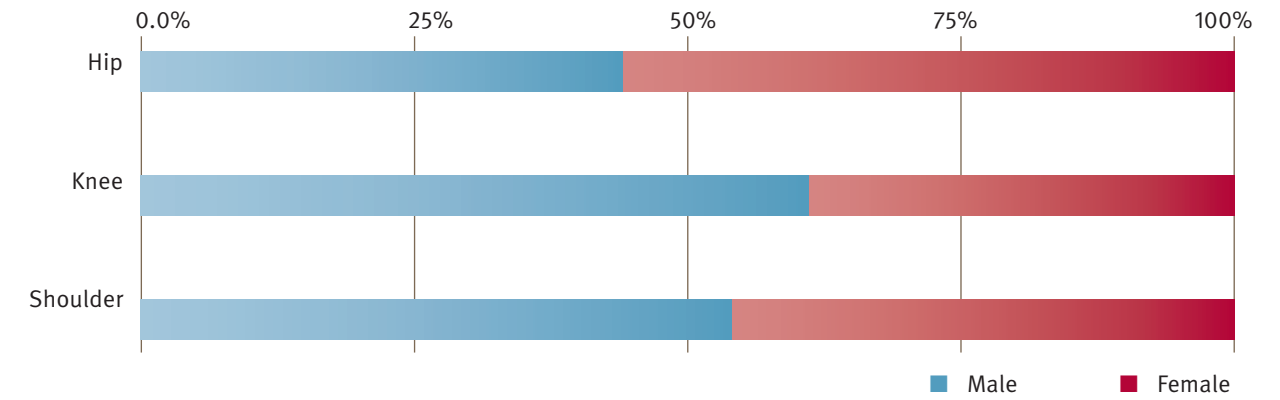
Outcomes from the Patient Perspective

By continually monitoring patient reported outcomes we're ensuring the best care for our patients.

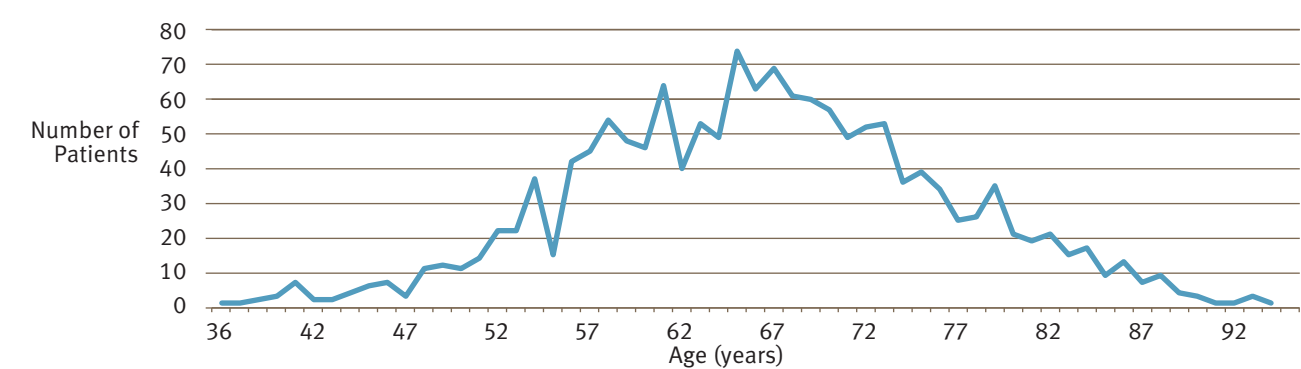
The following graphs represent the results of our joint replacement registry — from implementation in October 2013 to May 2015. This data is made available publically to our patients, and internally reviewed to evaluate the surgeries.

JOINT REPLACEMENT PATIENT CHARACTERISTICS

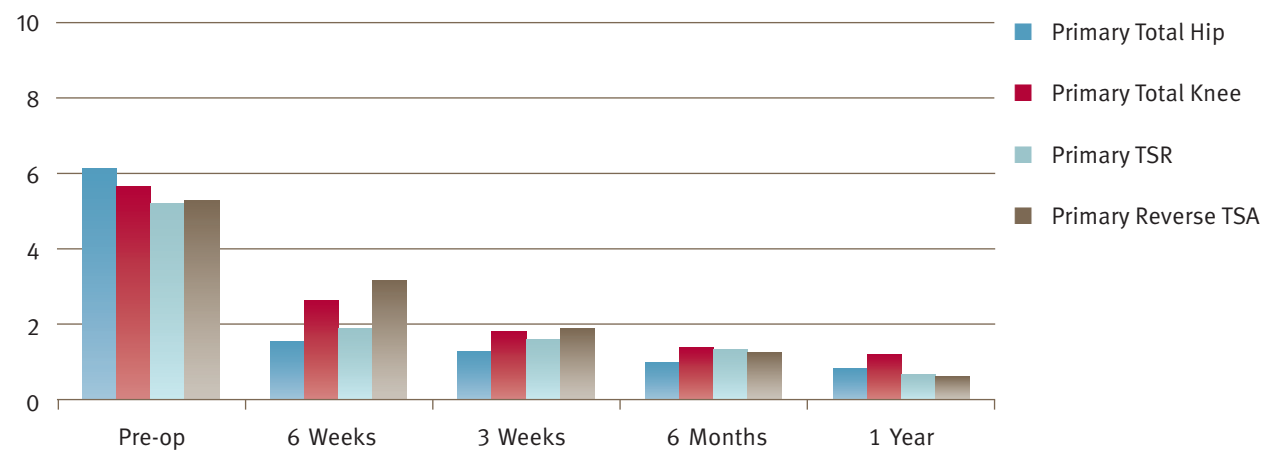
Gender Distribution of 2014 Joint Replacement Patients



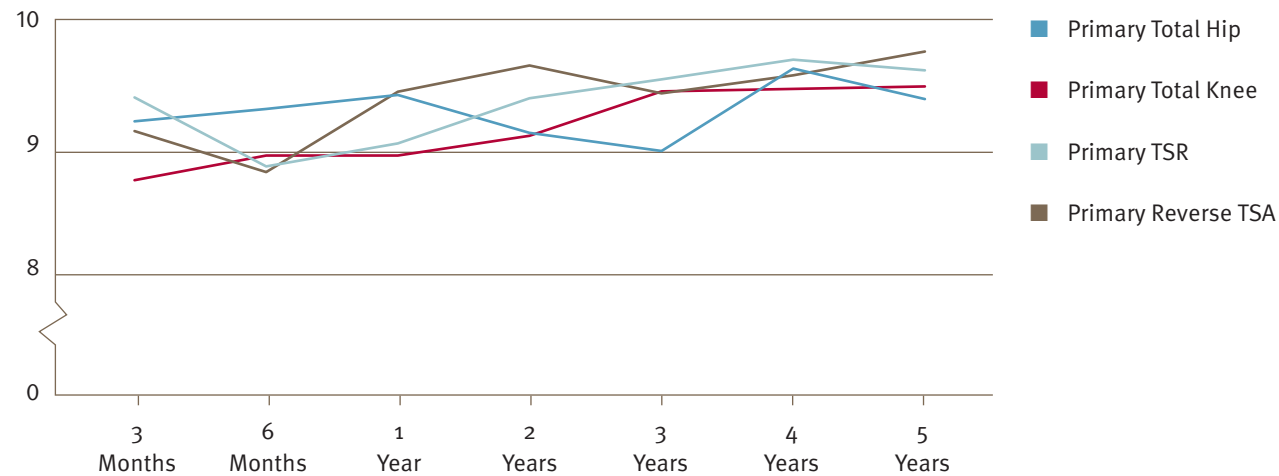
Age Distribution of 2014 Joint Replacement Patients



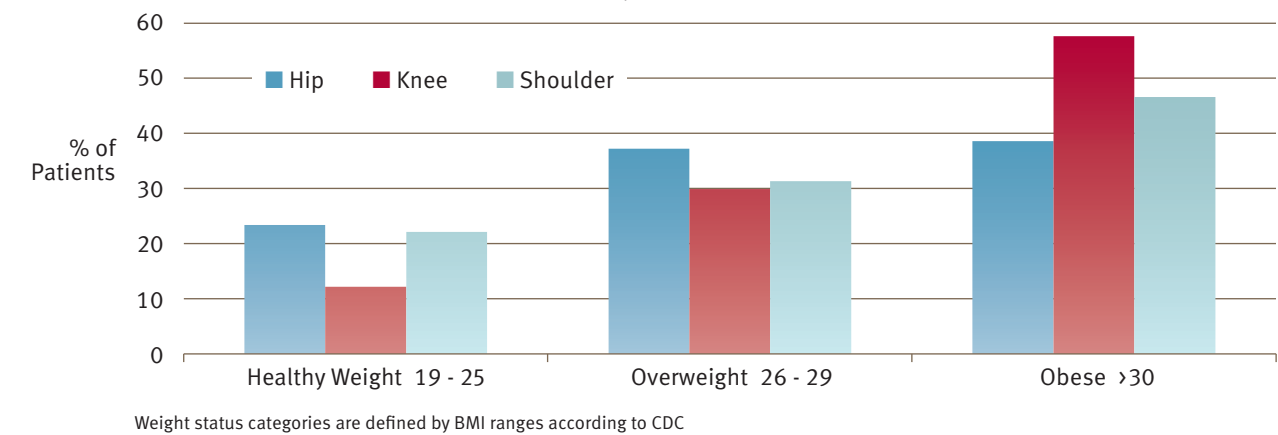
Patient Reported Pain



Satisfaction



BMI Distribution of 2014 Joint Replacement Patients



Weight status categories are defined by BMI ranges according to CDC

Surgical Statistics

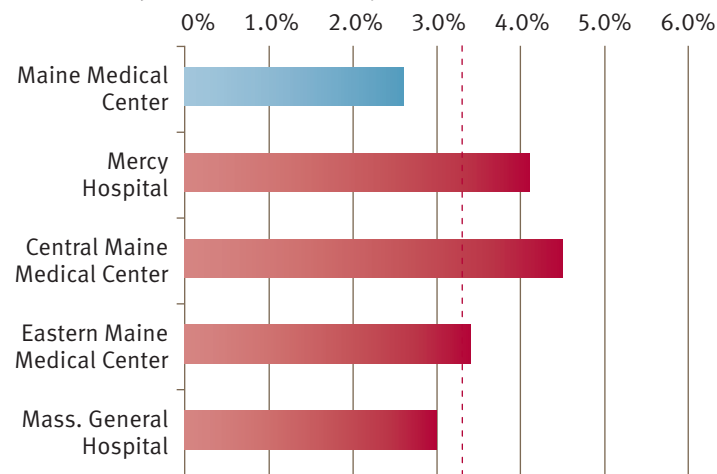
Our joint replacement patients have a dedicated pre-op and post-op, operating rooms, and an inpatient unit.

The public now has access to unprecedented data around the quality of joint replacement procedures.

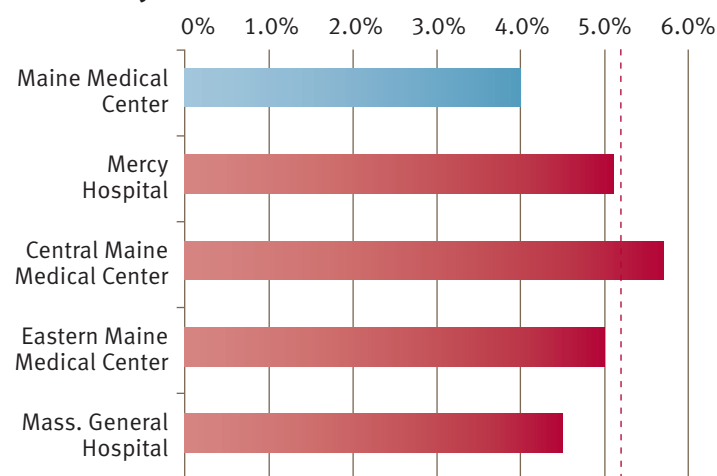
The Hospital Outcome of Care measures, which are readily available on the Medicare website, are significant because people who elect to have these surgeries typically research the hospital and physician to learn who has the best outcomes. Also, Medicare has recently begun to adjust hospital reimbursement rates for hip and knee replacement surgeries based on these measures, as it currently does for a number of other procedures.

HIP AND KNEE REPLACEMENT PATIENTS

30-Day Surgical Complications



30-Day Readmission Rates



*Source: www.medicare.gov/hospitalcompare. Accessed 05/07/2015.

■ MMC 30-day Rate
 ■ 30-day Rate
 - - - U.S. National Average
← Lower percentages are better



life. Long term goals of our surveillance process include identifying variables that are associated with excellent results, assessing changes that we make to improve the patient experience, and offering patients objective measures of outcome to compare to other programs. Clinically relevant and actionable findings are the motivating force for our research program. Our staff members collaborate with researchers, statisticians, clinicians, and students from Maine Medical

Center Research Institute, Tufts University School of Medicine, and regional and national research groups. We strongly believe that the combination of objective data about joint replacement surgery outcomes in conjunction with the desire and resources to improve and innovate through research allows us to offer our patients a state-of-the-art, safe, effective and durable joint reconstruction.

Brian McGrory, M.D.
Orthopedic Surgeon, Maine Medical Partners —
Orthopedics & Sports Medicine



Excellence, Patient Outcomes, and Research

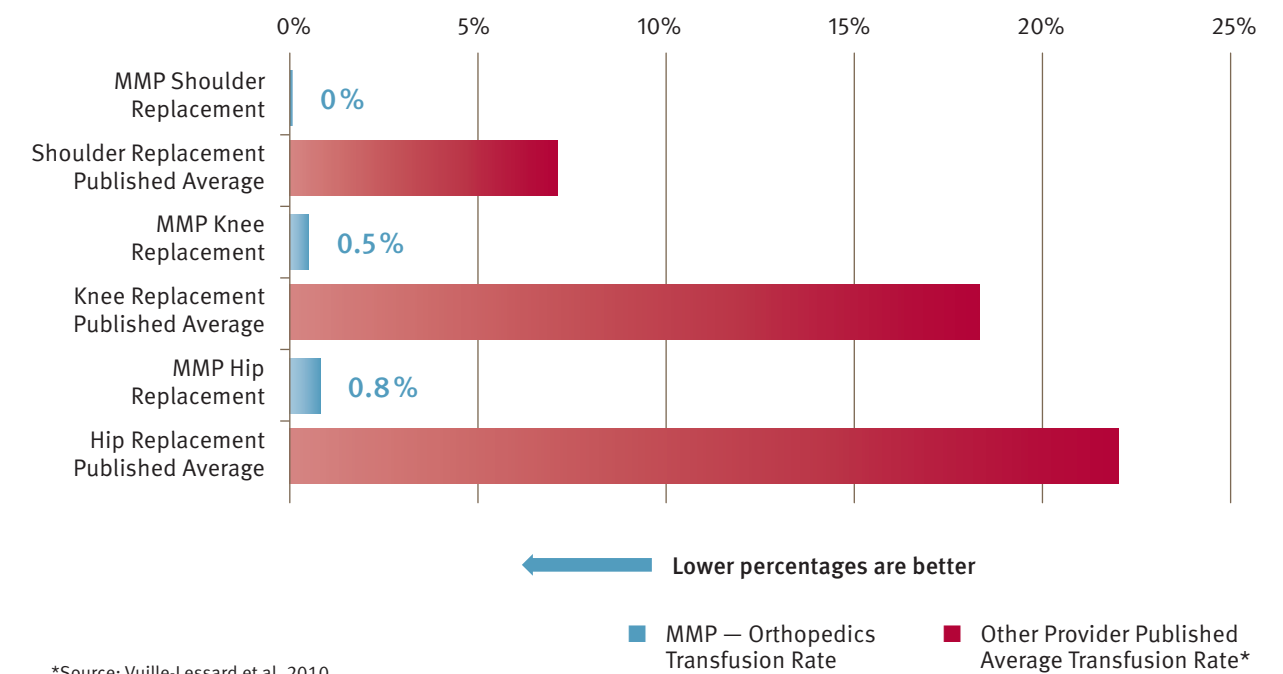


As performance and patient outcomes are being reported more frequently, patients can see that there is a “bell curve” or distribution of success, with only small numbers of centers consistently offering patients excellent results.

We think that our team’s dedication to the patient, innovative spirit, medical knowledge, technical skill, and above all, desire and ability to improve, allow us to be one of the top joint replacement programs in the country. The desire and ability to change for the better is wholly dependent on understanding and reacting to our results in real time.

For almost 20 years, data has been collected and examined for outcomes evaluation for a large portion of our joint replacement and fracture patients. Maine Medical Partners – Orthopedics & Sports Medicine next initiated the MMC and MaineHealth Joint Replacement Registry, and this registry was then expanded in two very important ways. For a number of years our joint replacement surgeons have collected not only surgical data, but also patient-reported outcomes. Patient-based questionnaires monitor activity, overall health, and joint-specific pain, stiffness, and function. They are collected before surgery and after surgery at appropriate intervals for the patient’s

2014 Transfusion Rate



Transfusion Rates

Blood loss during surgery is expected in patients undergoing major surgery. Our processes attempt to minimize the rate of transfusion, due to potential risks and an increase in postoperative issues related to transfusions. Additionally, transfusions add expense to a procedure. Variations in the delivery of operative blood transfusions depend not only on the patient, but also each surgeon’s specific transfusion practices,

and can help explain Maine Medical Partners — Orthopedics & Sports Medicine’s successful quality outcomes when compared to other joint replacement programs. Our transfusion rates are lower than any published rates or available statistics, and speak to the priority our orthopedic surgeons place on minimizing complications, and getting patients back on their feet.

Length of Stay

Maine Medical Center and Maine Medical Partners – Orthopedics & Sports Medicine have worked together to initiate protocols that provide the most efficient and effective care. Reducing patients’ length of stay means they go home faster - allowing patients to recover in a place they’re comfortable, as

opposed to a hospital or institutional setting. Patients with shorter lengths of stay recover faster, have better outcomes, reduce their chances of developing a hospital acquired complication and may reduce health care costs associated with their procedure.

2014 AVERAGE LENGTH OF STAY

Total Joint Replacement	Days
Hip Replacement	
Anterolateral Minimally Invasive	1.35
Posterior	2.79
Revision	3.43
Knee Replacement	
Primary	2.90
Revision	3.11
Shoulder Replacement	
Anatomic	1.39
Primary Reverse	1.52

Pain Management



Our philosophy regarding pain management is to take a multimodal approach that addresses each step of the pain pathway to minimize every patient’s post-operative pain. To quote the famous French Philosopher Jean Jacques Rousseau, “Happiest is the person who suffers the least pain.” Our dedication to meticulous soft tissue handling at the time of surgery, utilizing less invasive approaches to the hip, knee and shoulder, targeted local anesthetics and appropriate post-operative pain medications have all shown significant benefits with regards to our patient’s post-operative experience.

Studies report that superior post-operative pain management results in decreased length of stay at the hospital, earlier mobility in the post-operative setting, improved recovery of function such as range of motion in total knee replacements, decreased narcotic requirements, decreased gastrointestinal complications such as constipation, decreased genitourinary complications, and decreased cardiopulmonary complications such as pneumonias. Pain is a poorly understood, complex phenomenon most likely controlled by neural, cellular, and humeral

mechanisms. The pain pathway is initiated by surgical trauma that sends signals to the peripheral nervous system which are then carried to the central nervous system. Our approach for addressing pain targets each step in this pathway.

Surgical trauma in total hip replacement surgery is minimized by performing a muscle sparing minimally invasive approach. Resultant inflammation is then addressed with anti-inflammatory medications, also known as NSAIDs (e.g. Celebrex). In addition, cryotherapy or ice packs are applied to the operative extremity to reduce swelling. Local anesthetics injected at the time of surgery offer pain relief to the peripheral nervous system, while Tylenol and opiates (which are stronger narcotic pain medications) offer decreased pain by acting at the level of the central nervous system.

Our goal and commitment to our patients is to continually improve our peri-operative pain management techniques by way of reduced trauma at the time of surgery, a multimodal pain control program and pre-operative patient education.

Adam Rana, M.D.
Orthopedic Surgeon, Maine Medical Partners –
Orthopedics & Sports Medicine



Patient Education Experience

“Everyone is very professional and knowledgeable, I thought the class was wonderful and it answered all my questions. I’m feeling confident”

Patient Testimonial, Total Knee Replacement Class

We continue to grow the breadth of educational services to meet the needs of our population. Joint replacement preparation classes are offered in multiple locations, and via a number of different platforms, to supplement the already successful joint-specific classes that have always been held at the Maine Medical Center (MMC) Joint Replacement Center.

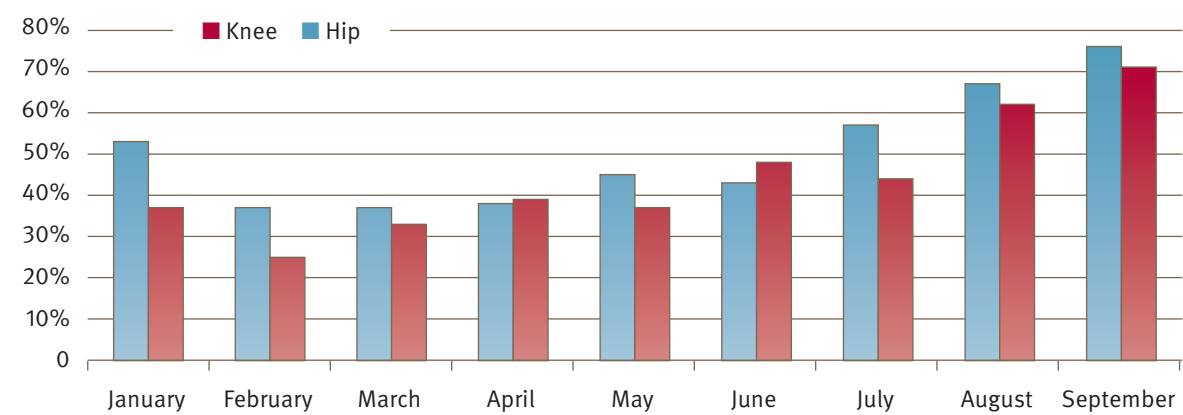
Janet Dyroff, R.N., M.S., CHES
Orthopedics Patient Educator,
Maine Medical Center

Educational Offerings

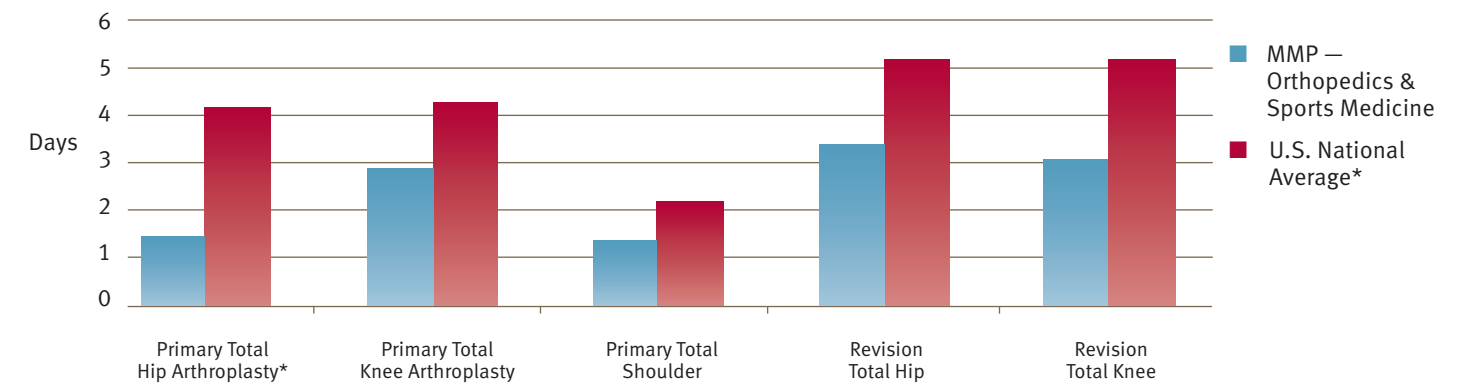
- Classes at Maine Medical Center, and Maine Medical Partners offices in Falmouth, Maine
- Webinars
- Online e-learning course
- In-person, or telephone meeting with the Nurse Educator
- Patient Education book / guide



PERCENT OF PATIENTS PARTICIPATING IN PRE-OPERATIVE EDUCATION 2015



2014 LENGTH OF STAY AVERAGES



* includes Posterior and Anterolateral

Source HCUP — US government publication, 2012; <http://hcup-us.ahrq.gov/reports/projections/2012-03.pdf>

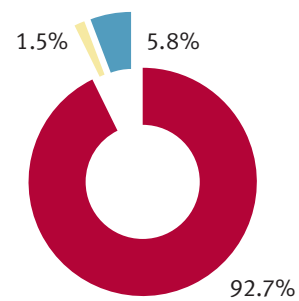
Discharge Disposition

Discharge disposition is an important factor in joint replacement surgery. Getting patients back to their families and loved ones is a priority for Maine Medical Partners – Orthopedics & Sports Medicine because our team understands that patients recover better in the comfort of their own home.

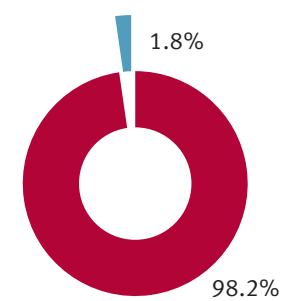
Patients discharged home have the option of visiting nurses, in-home physical therapy and in-home occupational therapy visits. Maine Medical Partners – Orthopedics & Sports Medicine has established this commitment to getting patients home when possible and our commitment shows in the data.

DISCHARGE LOCATION

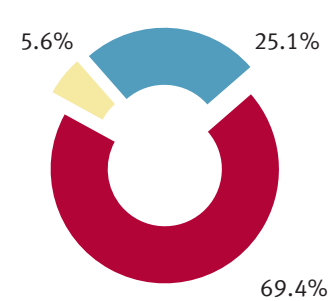
Total Hip Replacement



Total Shoulder Replacement

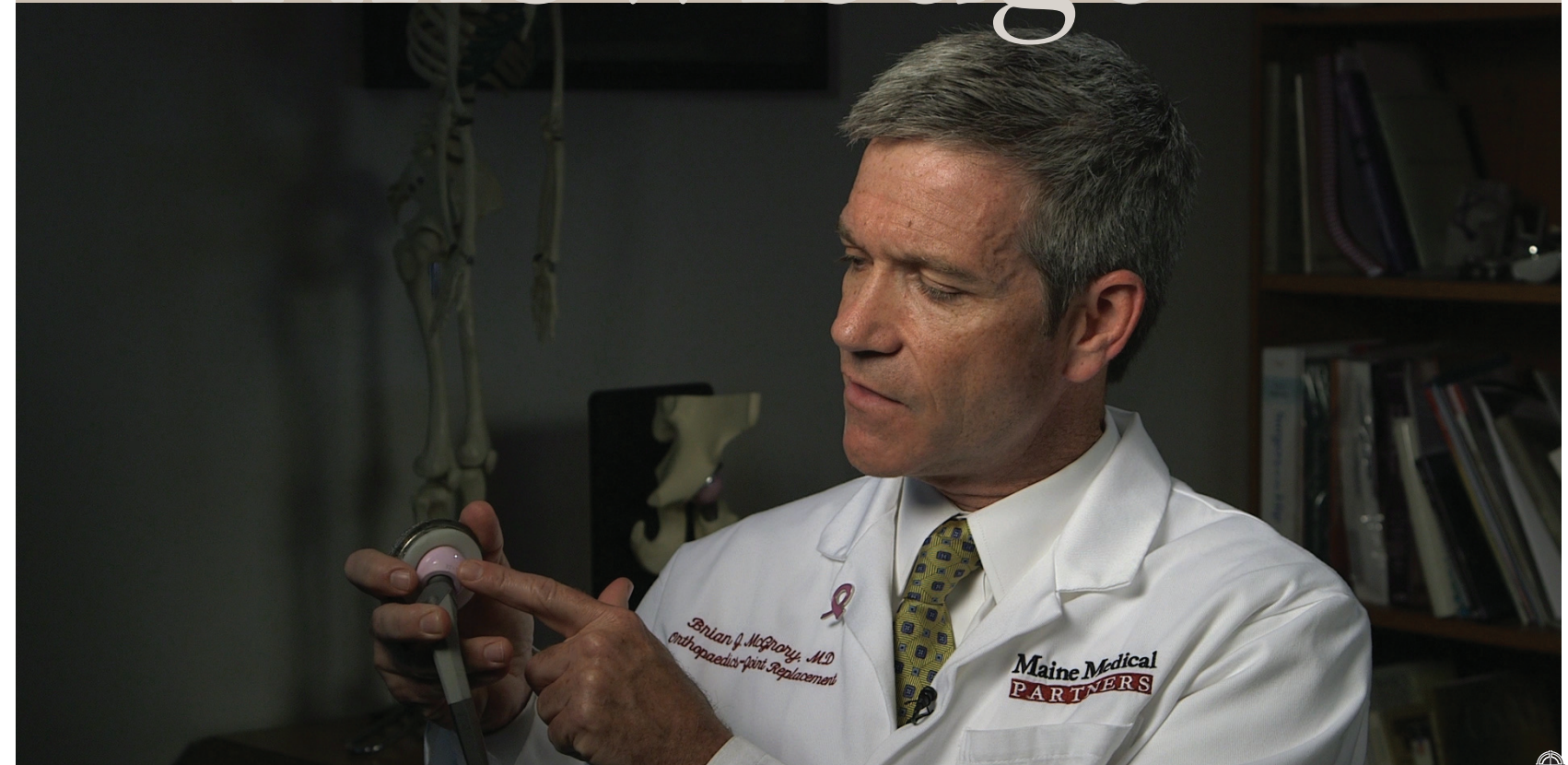


Total Knee Replacement



■ Home ■ Rehab facility ■ Skilled nursing facility

Knowledge



Ask our expert providers for up-to-the-minute data and information. They are the best at what they do and are sought-after for their knowledge.

