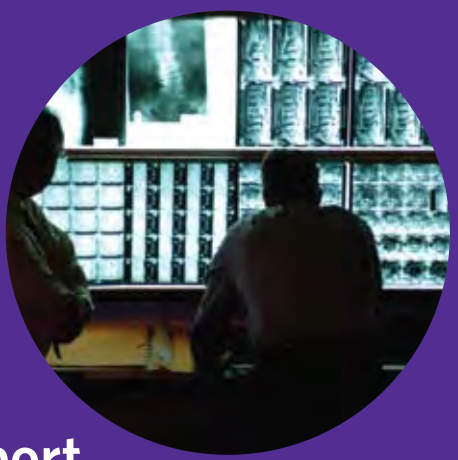
NYU Hospital for Joint Diseases

NYU LANGONE MEDICAL CENTER



2010 Quality and Outcomes Report

DEPARTMENT OF ORTHOPAEDIC SURGERY

The Hospital for Joint Diseases at NYU Langone Medical Center—Department of Orthopaedic Surgery

The Department of Orthopaedic Surgery at NYU Langone Medical Center's Hospital for Joint Diseases is one of the largest orthopaedic programs in the country, recognized nationally and internationally as a center of excellence in orthopaedic clinical care, education, research and quality. Under the leadership of Joseph D. Zuckerman, MD, Walter A.L. Thompson Professor and Chair of Orthopaedic Surgery, our talented faculty provide care in subspecialty areas including adult reconstructive surgery; orthopaedic trauma; sports medicine; musculoskeletal oncology; pediatric orthopaedics, and surgery of the spine, hand and wrist, shoulder and elbow and foot and ankle. With a consistently growing faculty, presently over 180 members, our department is dedicated to leading the way in the development of musculoskeletal surgery quality endeavors. The tens of thousands of patients who entrust their care to our physicians annually depend on us to ensure that they are given the best opportunity to lead healthy and productive lives, freed as much as possible from the difficulties associated with musculoskeletal diseases. We present this document to showcase our continued leadership in the area of orthopaedic quality care.


NYU HOSPITAL
FOR JOINT DISEAS


ORTHOPAEDICS
RHEUMATOLOGY
ORTHOPAEDICS
RHEUMATOLOGY

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The Hospital for Joint Diseases at NYU Langone Medical Center—Department of Orthopaedic Surgery

The history of The Hospital for Joint Diseases at NYU Langone Medical Center begins in 1905, when the brothers Henry and Herman Frauenthal founded the Jewish Hospital for Deformities and Joint Diseases. The Hospital quickly earned a reputation for innovation in musculoskeletal care. HJD researchers conducted the first extensive research in arthroscopic techniques in the United States in the 1920s, had the first female orthopaedic surgeon graduate in the 1930s, developed the earliest orthopaedic procedures for polio and congenital deformities in children in the 1940s, and established the first biomechanics laboratory in the country in the 1960s, to name just a few advances.

Marked by clinical innovation and an exceptional team of medical professionals, The Hospital for Joint Diseases at NYU Langone Medical Center stands now as the largest specialty site dedicated to the prevention and treatment of musculoskeletal diseases. It is one of five institutions in the world dedicated solely to the treatment of musculoskeletal conditions. Continuously heralded by *US News & World Report*, *New York* magazine, and other surveys and publications as a leader in orthopaedic care, the Department of Orthopaedic Surgery is a vital part of both the legacy and future of The Hospital for Joint Diseases at NYU Langone Medical Center.

1905

The Jewish Hospital for Joint Diseases and Deformities (JHJD) receives official charter from New York State.

1924

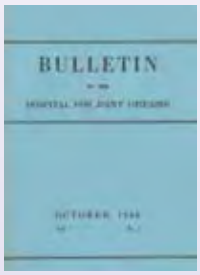
Henry L. Jaffe, the "Father of Orthopaedic Pathology" is appointed Director of Laboratories at HJD.

1930

Sir Robert Jones Lecture is established by HJD (continues to present day).

1937-38

Marian Frauenthal Sloan, graduate of HJD, first female orthopaedic surgeon licensed in New York State.



1940

Inaugural issue of the HJD Bulletin (continues to present day).

Letter from Robert Grossman, MD, Dean & CEO of NYU Langone Medical Center

NYU Langone Medical Center is a world leader in orthopaedic care. Our Hospital for Joint Diseases is ranked among the top 10 nationwide for orthopaedics by *US News & World Report*. The cutting-edge diagnostic techniques, treatment, and rehabilitation services provided by faculty in the Department of Orthopaedic Surgery are remarkable not only for the help and hope they bring to an ever-increasing proportion of the population we serve, but for the quality and safety with which they are provided.

As innovations in science and medicine revolutionize how we diagnose and treat disease, we are focused like never before on quality and patient safety. In tandem, hospital performance measures are becoming part of the public domain—with more and more initiatives designed to measure the quality of care and comparative scores posted on the Web. This expectation of accountability and transparency helps push us even further in ensuring quality and patient safety are embedded in every facet of our work.

The most fundamental promise we as physicians make is, "First, do no harm." But to me, true excellence goes further. It is a focused commitment to not stopping at "good enough" to ensure the best in care. We are extremely proud of our patient safety record, and I am happy to present you with this report of our quality- and patient-focused achievements.

Sincerely,

Robert I. Grossman, MD
The Saul J. Farber Dean and Chief Executive Officer

1979
The Hospital for Joint Diseases Orthopaedic Institute opens in its current location.

1986
NYU School of Medicine Academic affiliation.

1997
HJD and NYUMC Orthopaedic Departments merge.

2005
100th Anniversary of The Hospital for Joint Diseases.

2006
HJD and NYUMC complete full merger into single institution.

Quality and Our Mission, Vision and Values

Here at The Hospital for Joint Diseases, how we address quality is a reflection of our mission, vision and values.

Our Mission

The mission of The Hospital for Joint Diseases at NYU Langone Medical Center is to provide the highest quality of surgical and therapeutic care in the treatment, rehabilitation and prevention of musculoskeletal, rheumatic, immunological, neurological and other related diseases and injuries. We place service to human health at the center of an academic culture devoted to excellence in research, patient care and education, through serving, teaching, and discovering ways to make world-class contributions. We ensure that the interest and safety of all patients in the hospital take precedence over all other concerns, through the implementation of reliable quality assessment and continuous quality improvement mechanisms involving interactive communication among the Medical Staff, the Office of the Dean and CEO, the Board of Trustees and our entire patient care community.

Our Vision

The Hospital for Joint Diseases, as an integral component of NYU Langone Medical Center, shares the institution's vision of being a world-class patient-centered integrated academic medical center. This vision is inseparable from high quality care and patient safety.

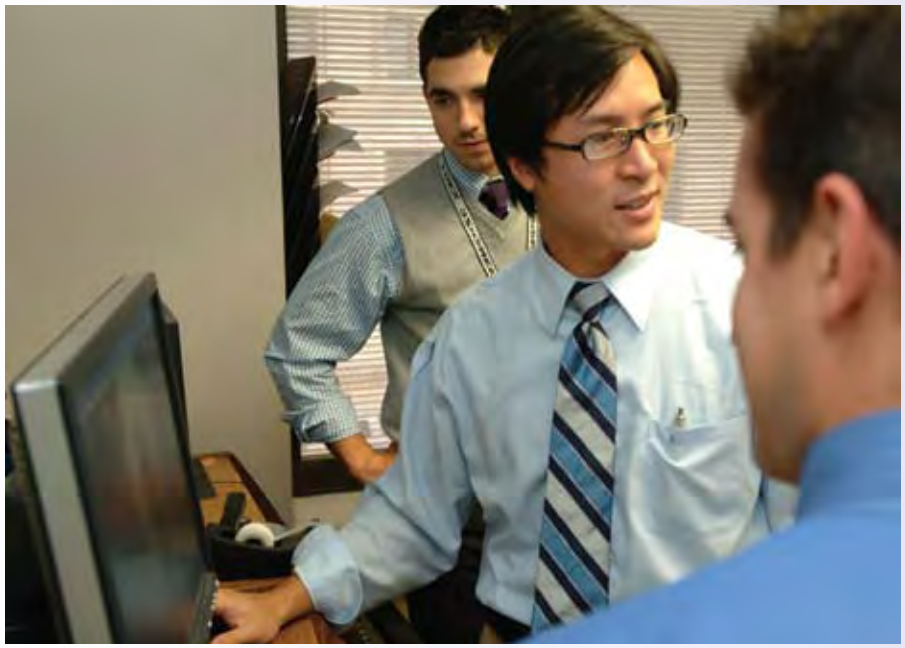
Our Values

Through our core values—excellence, respect, teamwork, integrity and care—our medical staff is at a patient's side from diagnosis through recovery to ensure the best possible outcome.

In 2008 the American College of Healthcare Executives conducted its annual survey of top issues confronting hospital CEOs. The second greatest concern to hospitals following financial challenges was patient safety and quality.

Our Safety Dashboard

Hospitals have become a challenging place to manage with more regulations, complexity of care, and ever-changing reimbursement. In 2001 the Institute of Medicine report, *Crossing the Quality Chasm*, set a high standard for quality. Patient care must be safe, timely, effective, efficient, equitable, and patient centered. Yet how does one make care safer in the hospital? At The Hospital for Joint Diseases, evidence is clear that if you are going to make hospital care safer for patients and their families, it must be within a culture of safety. Improving patient safety requires staff at all levels to have an understanding of what has been accomplished and what must still be done. To accomplish this, The Hospital for Joint Diseases utilizes a safety dashboard to assist in our overall quality improvement efforts.



The Hospital for Joint Diseases Safety Dashboard provides the opportunity to review and constantly improve patient-centered care.

What is a dashboard?

A dashboard is a way to visually present data measures in summary form so one can make quick and effective decisions.

What factors are critical for inclusion on a dashboard?

Factors most important to the organization's success
Critical drivers that influence performance attainment
Relevant measures
Relevant benchmarks

What does the HJD safety dashboard include?

Our safety dashboard is comprised of safe, effective and patient-centered measures.

How often is the data tracked?

All data is compiled on at least a quarterly basis, with plans for monthly reporting.

Letter from Joseph D. Zuckerman, MD, Chairman, Walter A.L. Thompson Professor of Orthopaedic Surgery

I am pleased to present the first annual report on quality endeavors from the Department of Orthopaedic Surgery of The Hospital for Joint Diseases at NYU Langone Medical Center. We view quality as the responsibility of all and therefore see our mission as one of sharing knowledge about growing a quality program with as many members of our industry as we can reach. Herein you will find a carefully compiled selection of our most recent quality related endeavors, a review of mission-critical quality-improvement goals for healthcare, as well as an educational review of the history of quality in healthcare.

The common goal of all Orthopaedic Surgeons is to improve the quality of life for our patients with excellent and safe outcomes of the care we provide. As significant changes are anticipated in healthcare in general, our department has taken a keen interest in ensuring that quality care is reported effectively. It is no longer enough to simply strive for the best outcomes; we have reached a point where we must prove that we are both striving for and reaching these goals.

In this publication, you will find evidence of our department's efforts to evaluate and improve the procedures and outcomes that we provide to the patients in our care across our subspecialty divisions. As one of the largest and most specialized orthopaedic surgery departments in the United States, we know it is our responsibility to lead the charge to demonstrate quality endeavors.

We hope that this publication will assist you in your department or practice and encourage your ongoing efforts to assure the highest quality patient care. Our goal is to demonstrate the tremendous ability that orthopaedic surgeons have to lead the way towards better quality programs in healthcare organizations and orthopaedic practice. We encourage and wish to energize continuous improvements in the quality of care for our patients. With a large portion of our population aging and entering a period of life where management of musculoskeletal conditions is an essential driver for quality of life, we know that our ongoing efforts to ensure and improve quality will have a vast and lasting impact on the population.

We endeavor to energize our colleagues and ourselves towards increasingly robust programs in quality—and we hope that our publication will be a call to arms for you and your colleagues.

We are available to support your efforts and share our knowledge and continued growth. Please do not hesitate to contact our Quality Division for further resources and collaboration in the future.

Sincerely,

Joseph D. Zuckerman, MD, Chairman
Walter A.L. Thompson Professor of Orthopaedic Surgery
Hospital for Joint Diseases at NYU Langone Medical Center

Letter from Joseph A. Bosco, MD, Vice Chair of Clinical Affairs

The Hospital for Joint Diseases at NYU Langone Medical Center is a worldwide leader in musculoskeletal care. Since our inception in 1905 our physicians and staff have provided care in a patient centered, compassionate environment. During our 100 plus years of existence, we have led the evolution in orthopaedics, introducing many innovations and advances.

In 1999, The Institute of Medicine published their seminal report on healthcare quality, *To Err is Human*. The report inspired a revolution in how healthcare organizations measure and continually improve clinical care. It is our mantra that we can only improve based on a thorough analysis of the results of the care we provide. Today we take a leadership role by focusing on quality and outcomes.

This publication represents the vision and work of our entire staff. Each year we publish hundreds of articles in a variety of journals detailing our outcomes. Patients around the world have benefited from the knowledge imparted and innovations detailed in our publications.

We believe that patient centered care and continuous quality improvement efforts are the bellwether issues of our time, and as an institution we remain ever focused on both. As committed leaders in the field, this publication represents the vision and focus of our entire institution. We hope that our description of our programs will provide inspiration to other leaders in the field who wish to advance quality and patient centered care.

Sincerely,

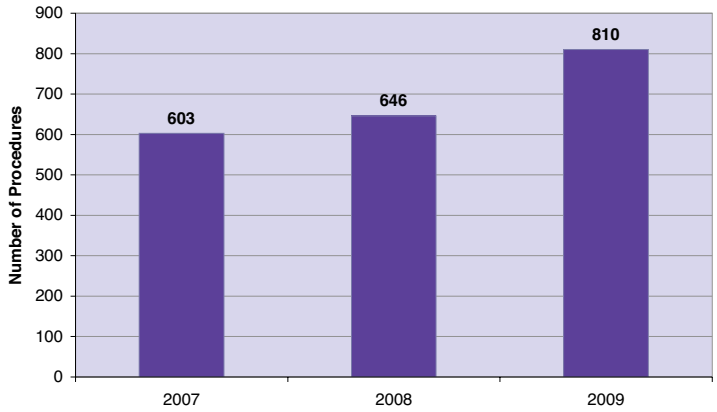
Joseph A. Bosco

Vice Chair of Clinical Affairs, Department of Orthopaedic Surgery
Hospital for Joint Diseases at NYU Langone Medical Center

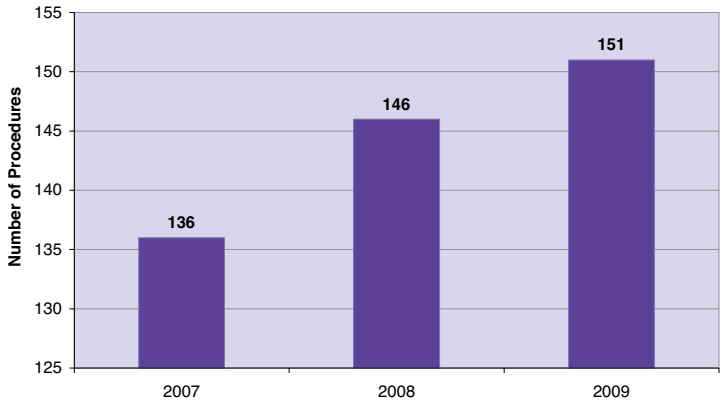
Selected Procedure Volumes

Excellence of clinical outcomes is closely associated with surgical volume. At The Hospital for Joint Diseases at NYU Langone Medical Center we perform over 17,000 orthopaedic procedures annually. Below we have listed 3 year volume data on commonly performed orthopaedic procedures.

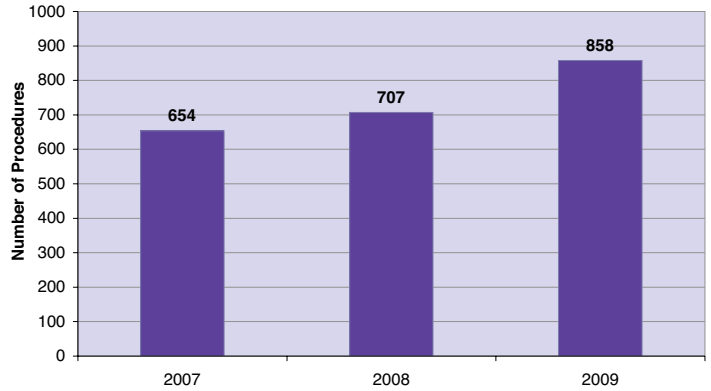
Division of Adult Reconstructive Surgery
Total Hip Replacement Procedure Volumes



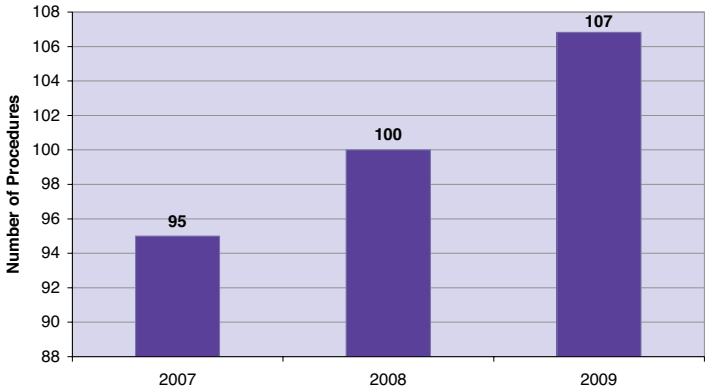
Division of Adult Reconstructive Surgery
Total Hip Revision Procedure Volumes



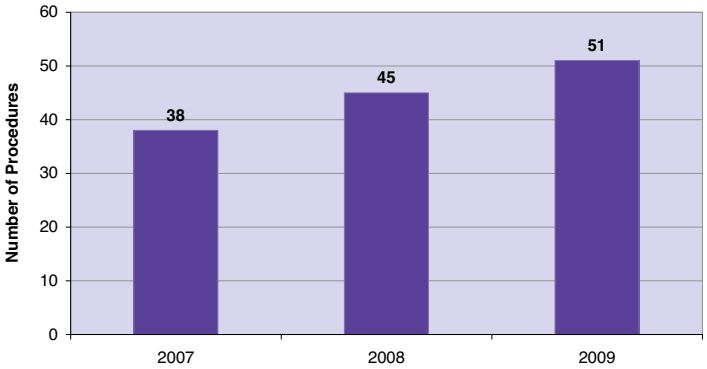
Division of Adult Reconstructive Surgery
Total Knee Replacement Procedure Volumes



Division of Adult Reconstructive Surgery
Bilateral Knee Replacement Procedure Volumes



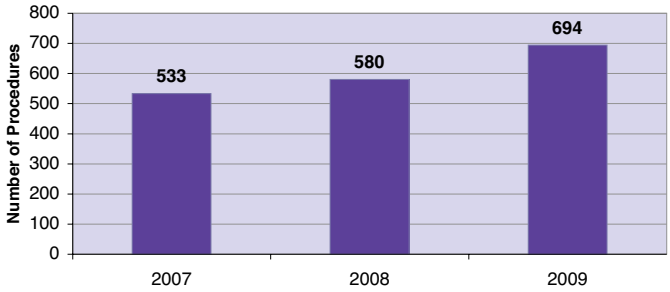
Division of Adult Reconstructive Surgery
Total Knee Revision Procedure Volumes



"Over the past decade, improvement in bearing surfaces in both knee and hip replacement implants along with technological assistance resulting in enhanced surgical skills allows us to predict and assure our patients that their joint replacements have a predictable life expectancy in the range of 18-20 years. This will greatly improve the quality of life for our joint replacement patients, allowing them to return to near-normal activities."

- Dr. Fredrick Jaffe, Chief, Division of Adult Reconstructive Surgery

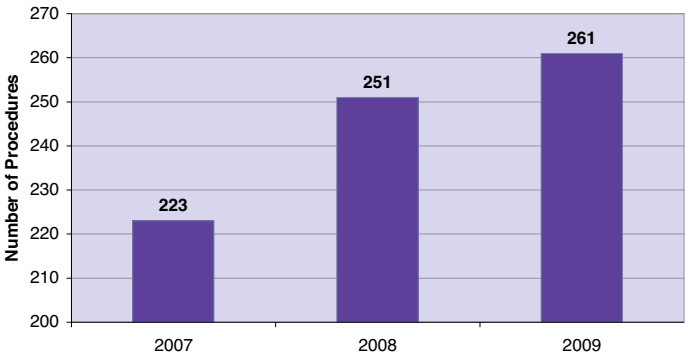
Division of Hand Surgery
Decompression of the Median Nerve



"The Division of Hand Surgery performs a high volume of nerve decompression, nerve repairs, nerve transfers, brachial plexus surgery, and nerve tumors. Decompression of the median nerve for carpal tunnel syndrome is one of the most common procedures performed by hand surgeons. The Division of Hand Surgery performs a large number of carpal tunnel releases, nearly 600 in 2009, improving a multitude of patients' hand pain, sensibility, and function."

Dr. Steve Lee, Associate Chief, Division of Hand Surgery

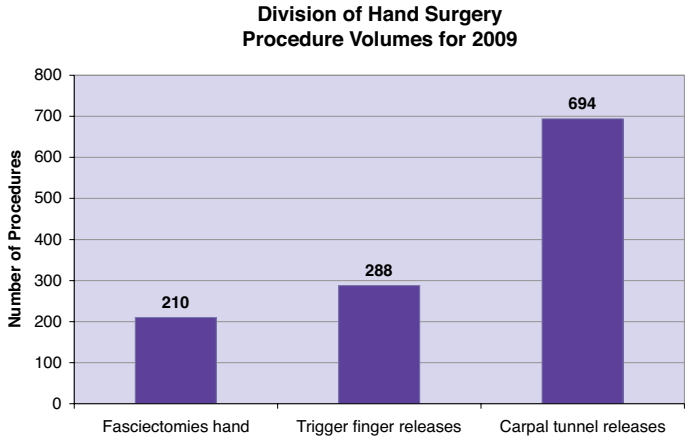
Division of Hand Surgery
Surgical Repair of Fractures of the Distal Radius

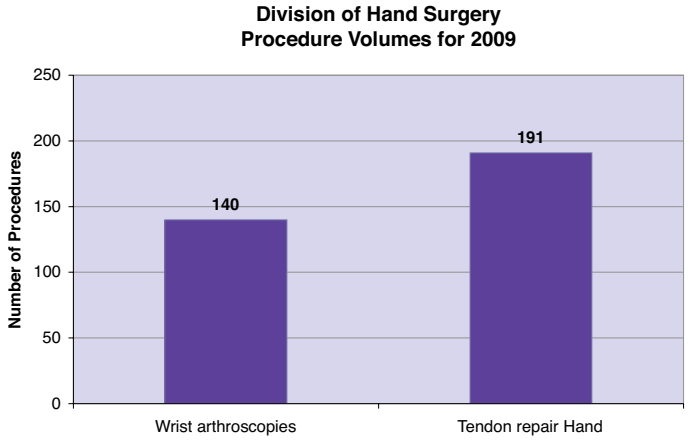


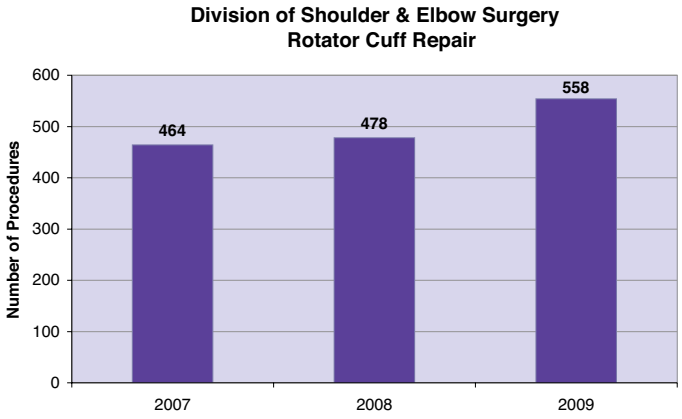
"Distal radius fractures are one of the most common fractures in the human body. They usually occur when a person falls onto their hands/wrists. Surgery when necessary can replace the fragments and hold them in a more normal position with metal plates and screws. The Division of Hand Surgery does a large number of distal radius fracture cases, more than 250 in 2009, restoring a plethora of patients back to work, sports, and hobbies."

–Dr. Steve Lee, Associate Chief, Division of Hand Surgery

Selected Procedure Volumes

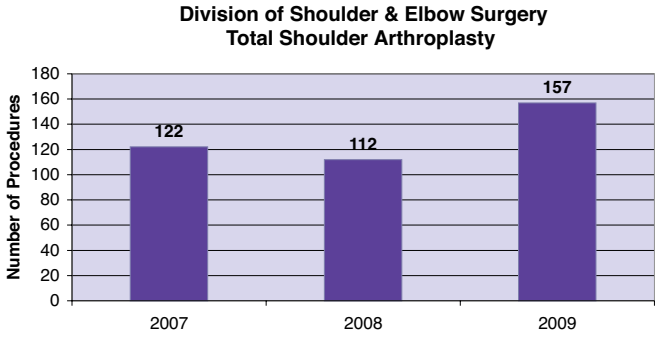






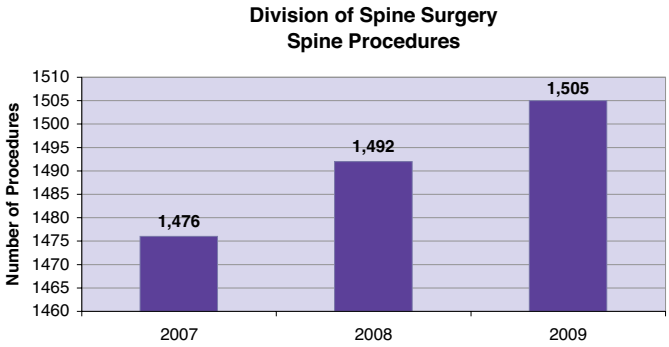
"The Division of Shoulder and Elbow Surgery performs over 500 rotator cuff procedures per year. The vast majority of these procedures are performed arthroscopically on an outpatient basis."

– Dr. Andrew Rokito, Chief, Division of Shoulder and Elbow Surgery



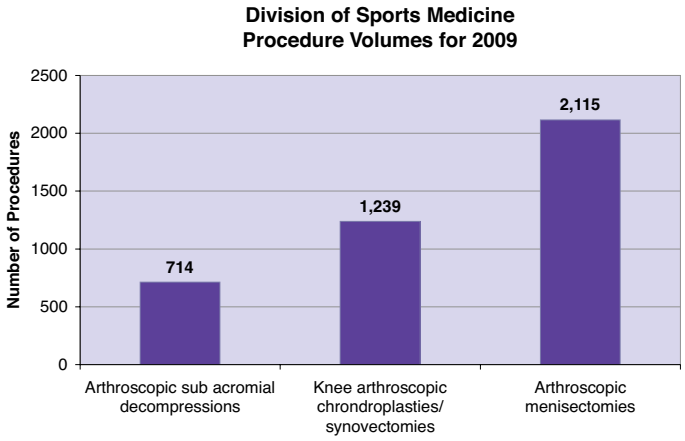
"The Division of Shoulder and Elbow Surgery has extensive experience in performing both total shoulder replacements and reverse total shoulder replacements for patients with endstage shoulder arthrosis."

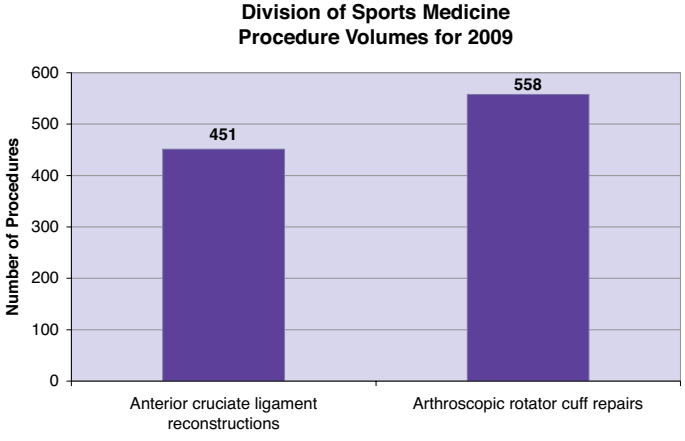
– Dr. Young Kwon, Assistant Professor of Orthopaedic Surgery, Division of Shoulder and Elbow Surgery



"The above graph shows an increase in the number of instrumented lumbar fusions from 2006-2009 representing an increase not only in the volume of cases seen but also an increase in the complexity of spine problems referred to the Division of Spine Surgery."

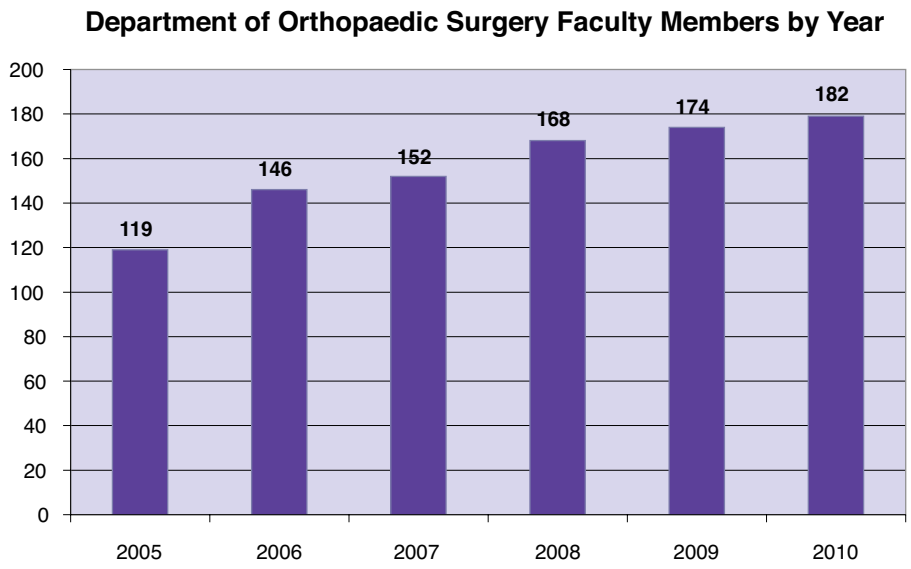
–Dr. Thomas Errico, Chief, Division of Spine Surgery





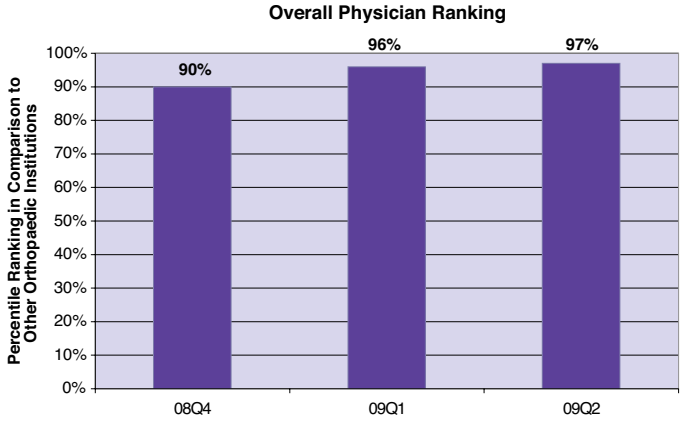
Quality: It's about the people who care for you.

One of the fundamental ways we ensure quality at our institution and in our Department is to attract and retain the best, most talented and highly trained faculty for our patients to access as their physicians. Our Chairman, executive committee, and steering committee members are all involved in ensuring that the right physicians are chosen as prospective faculty members, always with the background knowledge that any appointed faculty member might be treating one of our own loved ones or friends.

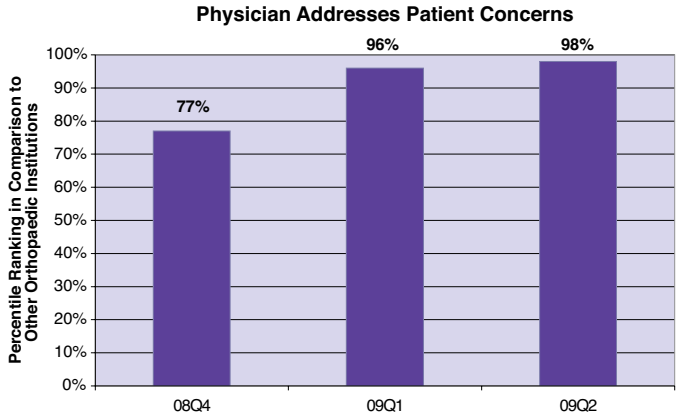


The graph above shows our Department's consistent growth from 2005 to 2010. Our recruiting efforts in all subspecialty areas are ongoing.

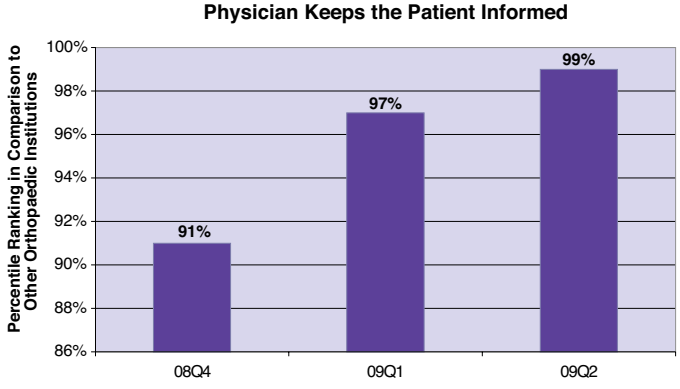
Press Ganey/Patient Satisfaction



Press Ganey is a survey which uses patient discharge information to select a sample of recipients who receive mailed satisfaction surveys. The company currently offers 35 surveys designed for various healthcare contexts, including general inpatient, pediatrics, emergency department, outpatient medical practice, ambulatory care, behavioral care, long-term care and home health care.



The majority of surveys use a five-point scale of responses ranging from "very poor" to "very good." Surveys can be customized to match the specific services offered by a hospital. Press Ganey allows hospitals to compare their satisfaction score to other hospitals with similar patient populations or bed volume to benchmark their scores.



Hospital-Acquired Conditions

As of October 1, 2008, the Centers for Medicare and Medicaid Services (CMS) changed how it reimburses hospitals for complications acquired during hospital treatment by Medicare beneficiaries. CMS published a list of 10 events which it considers to be "reasonably preventable" during a hospital stay. If it is determined the complication was the result of hospital error, the cost of care related to the complication will not be reimbursed. These conditions represent the opportunity to improve the quality and safety of patient care. While all HACs are of concern for physicians treating patients, those that are in bold are ones of particular concern for orthopaedic surgery patients, and hence, are getting the bulk of our Department's immediate attention. Still other initiatives are in constant development to prevent HACs.

10 Hospital-Acquired Conditions (HACs)

- **Object inadvertently left in after surgery ***
- Air embolism
- Blood incompatibility
- Catheter-associated urinary tract infection
- **Pressure ulcer ***
- Vascular catheter-associated infection
- **Surgical site infection ***
- Certain types of falls and traumas
- **Venous thromboembolism after hip and knee replacement ***
- Poor glycemic control

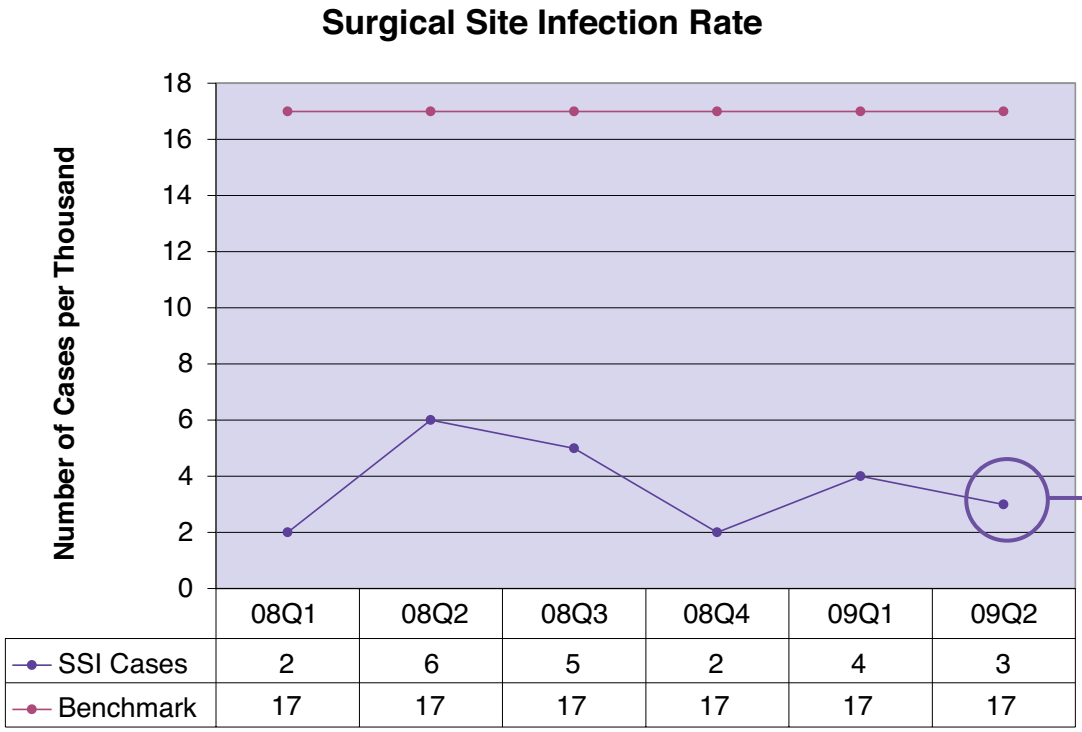
*** Bolded terms are of significance to orthopaedic surgeons.**

Surgical Site Infections (SSIs)

Recently CMS elevated prevention of SSIs to a national priority status. SSIs are considered 'Never Events.' Tolerance for 'Never Events' in healthcare settings is 0%.

Our consistent priority at The Hospital for Joint Diseases at NYU Langone Medical Center is to proactively prevent SSIs and seek new means of avoiding these complications.

Below, we share some of our data regarding the results of our efforts to reduce SSIs.



	08Q1	08Q2	08Q3	08Q4	09Q1	09Q2
SSI Cases	2	6	5	2	4	3
Benchmark	17	17	17	17	17	17

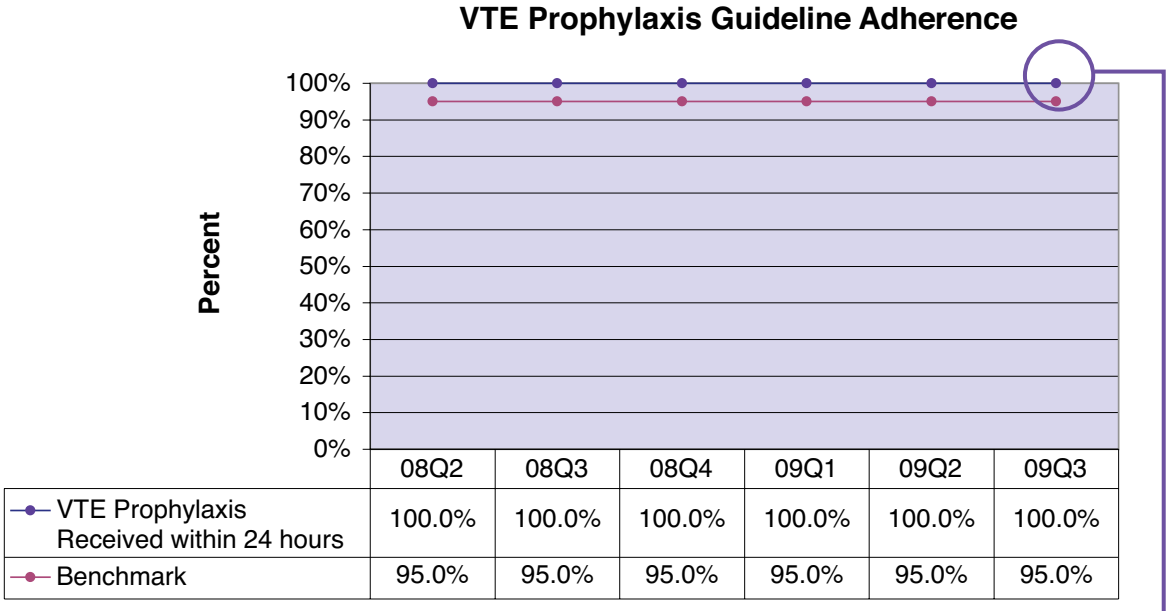
We are well below the benchmark level indicating a significant decreased risk of Surgical Site Infections in the Department of Orthopaedics.

Surgical Care Improvement Project (SCIP) Measures

The Surgical Care Improvement Project (SCIP) is a national quality partnership of 10 steering organizations (including the Joint Commission and the Centers for Medicare and Medicaid Services) dedicated to improving surgical care through the reduction of complications. It is estimated that SCIP protocols will save many lives nationally reducing the incidence of surgical complications. Two important SCIP protocols of interest in orthopaedics are the prevention/reduction of Venous Thromboembolism (VTE), and prevention/reduction of Surgical Site Infections. Both have been a major focus of our quality initiatives.

VTE: a Unique Challenge in Orthopaedic Surgery

VTE is the collective term for Deep Vein Thrombosis (DVT) and Pulmonary Embolism (PE). At The Hospital for Joint Diseases at NYU Langone Medical Center, surgical care and patient outcomes are the highest priority. Long before SCIP was instituted, VTE Prophylaxis process and outcomes were an essential component of the care provided. We remain dedicated to making certain every patient receives the appropriate VTE prophylaxis in a timely manner.

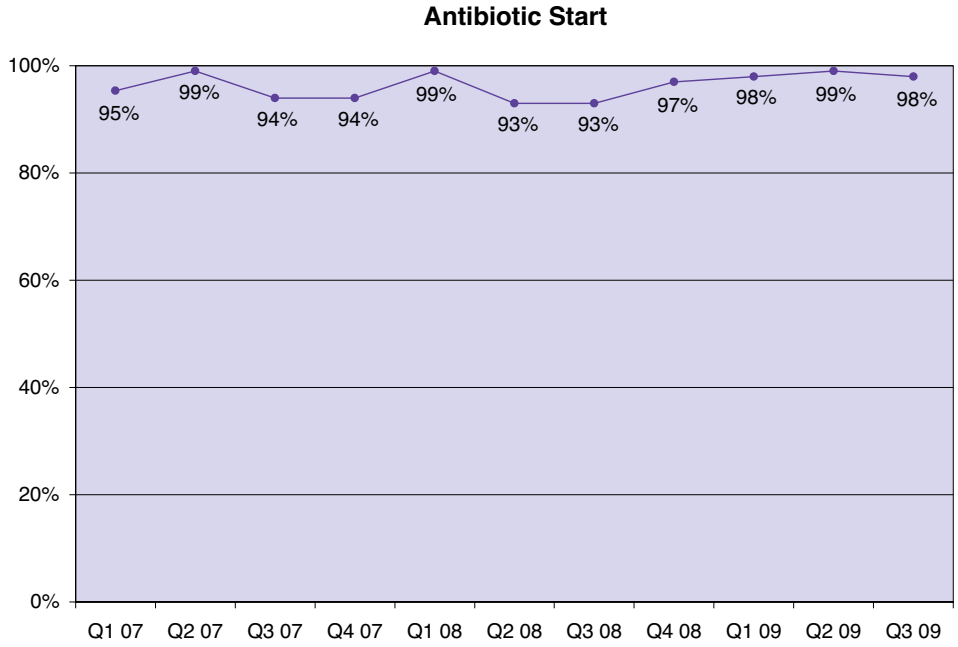


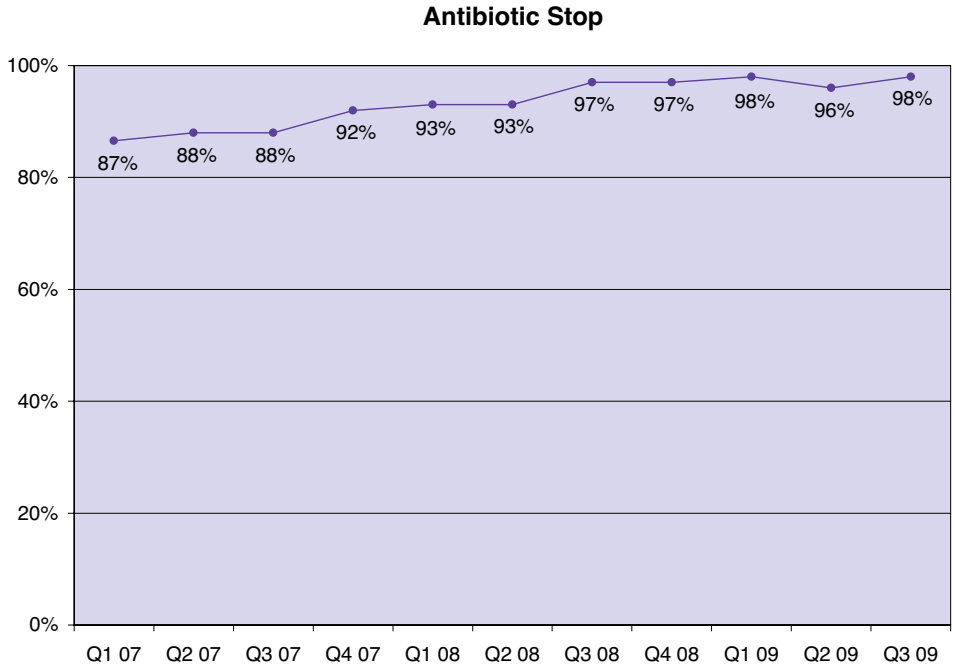
	08Q2	08Q3	08Q4	09Q1	09Q2	09Q3
VTE Prophylaxis Received within 24 hours	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Benchmark	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%

We exceed benchmark expectations for VTE prophylaxis.

Antibiotics: a Crucial Element in the Prevention of Surgical Infections

Prior to surgery, patients are carefully evaluated and should receive antibiotics just before the start of the procedure. Equally important is for the antibiotics to be introduced 24 hours after surgery to avoid the development of resistant strains of bacteria.

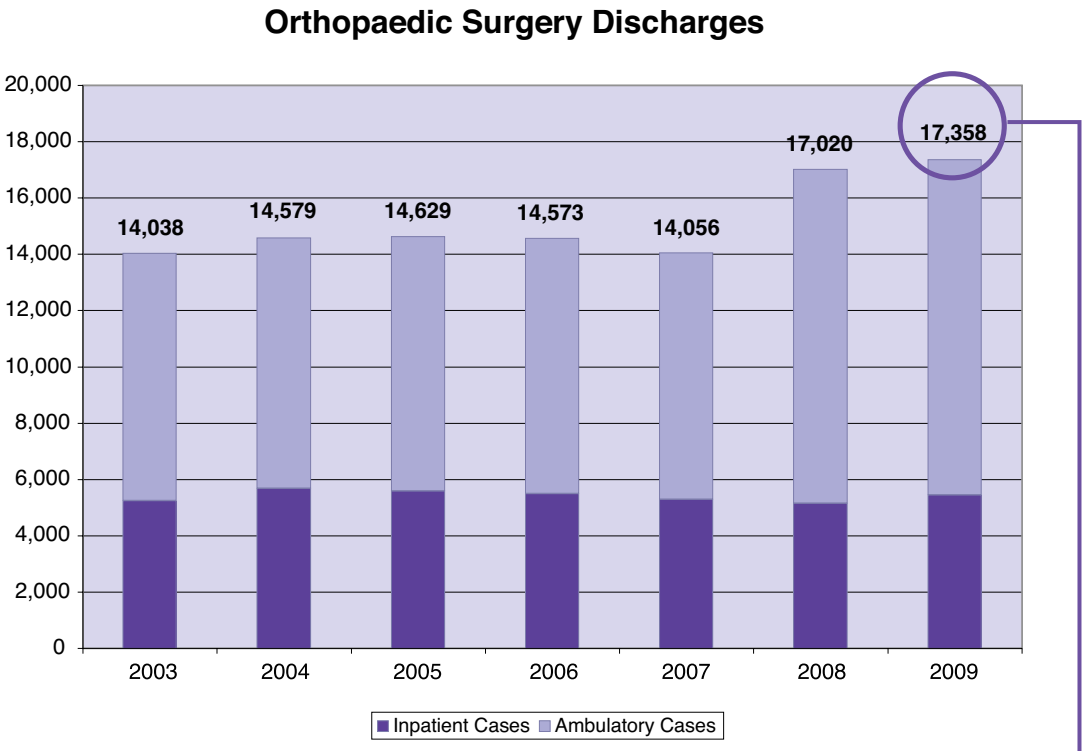




"Practice Makes Perfect"

Last year our surgeons performed over 17,000 orthopaedic procedures. It is well accepted that **high volume is correlated with high quality**.

Here we have a classic case of "practice makes perfect." All of our staff (from the aides to the nursing staff to the most highly trained surgeons) are uniquely prepared, continuously trained, and constantly improving on the basis of their daily immersion in orthopaedic care and surgical practice.

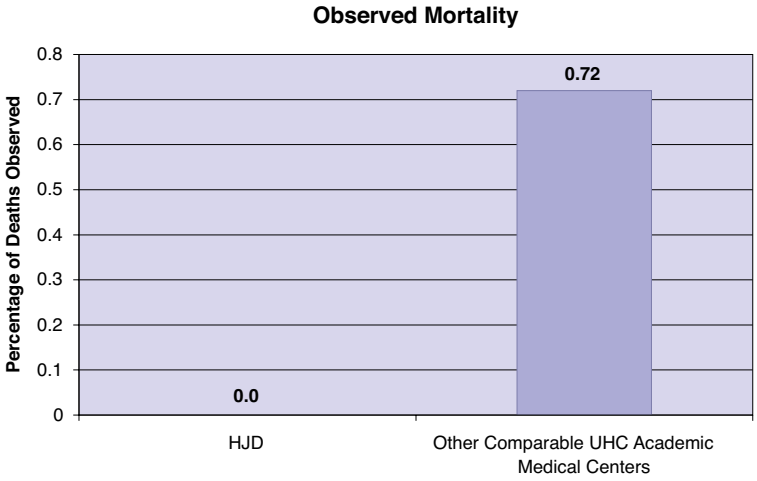


Our discharges have increased by 20% in the past 6 years.

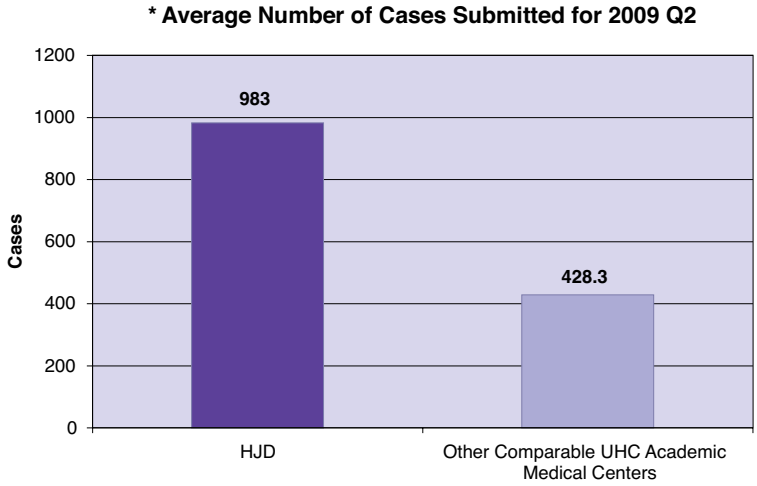
University Health Consortium (UHC) Hospital Comparisons for New York State Academic Medical Centers

The UHC collects performance and outcomes data of selected procedures from over 100 Academic Medical Centers (AMCs) . This data is used to compare performance between AMCs.

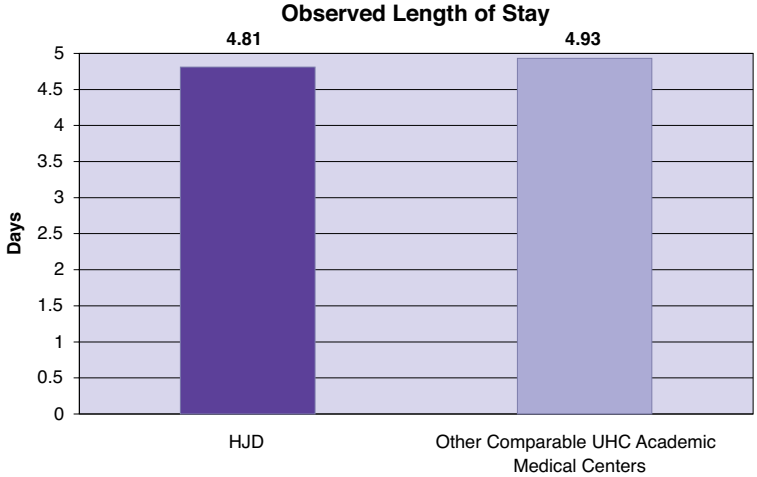
Time Period: 2009-- Q2
Data comparison between The Hospital for Joint Diseases at NYU Langone Medical Center (HJD) and similar AMC's



HJD % of Deaths Observed: 0.00
Average % of Deaths Observed for other NY State AMC's: 0.72



HJD Cases: 983
Average Cases for other NY State AMC's: 428.3
*HJD voluntarily submits more than double the number of cases for benchmarking than *Other Comparable UHC Academic Medical Centers.*

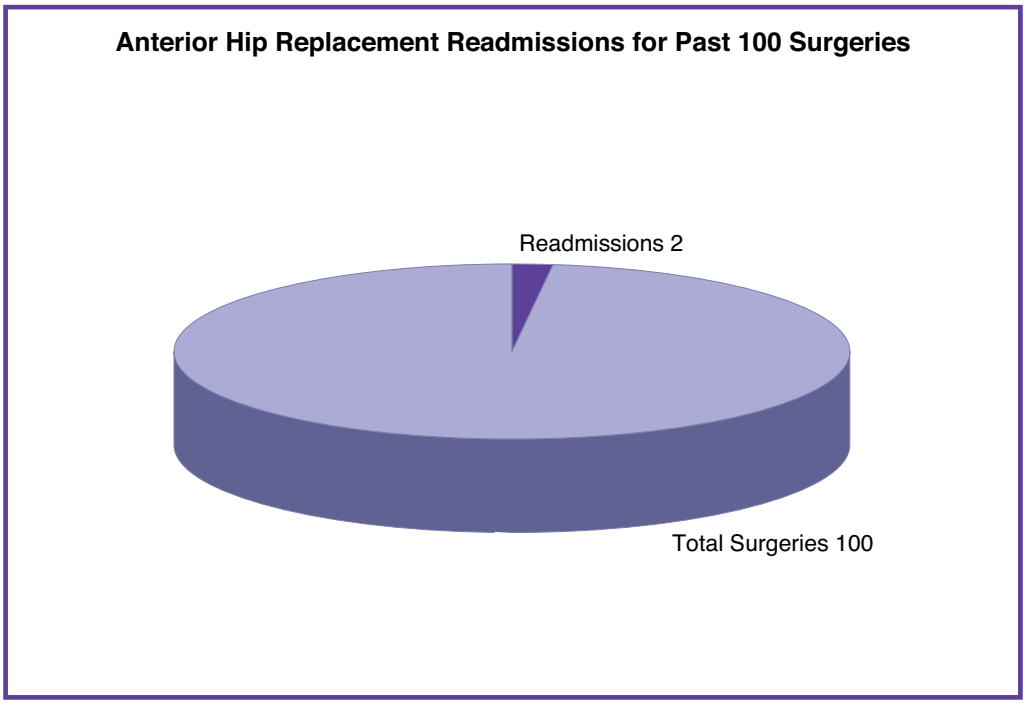


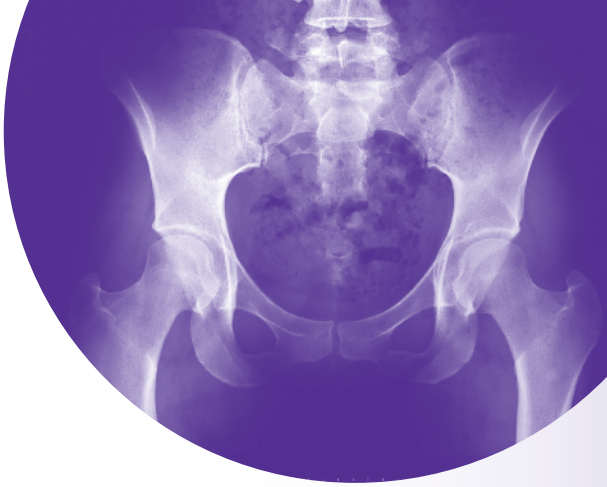
HJD Mean LOS: 4.81
Average LOS for other NY State AMC's: 4.93

The Division of Adult Reconstructive Surgery is an important subspecialty of Adult Orthopaedic Services. Our world renowned surgeons perform over 2,800 joint replacement surgeries a year, including primary hip and knee replacements as well as complex revisions and reconstructions. We treat osteoarthritis, rheumatoid arthritis, avascular necrosis, and developmental deformities.

Anterior Hip Replacement

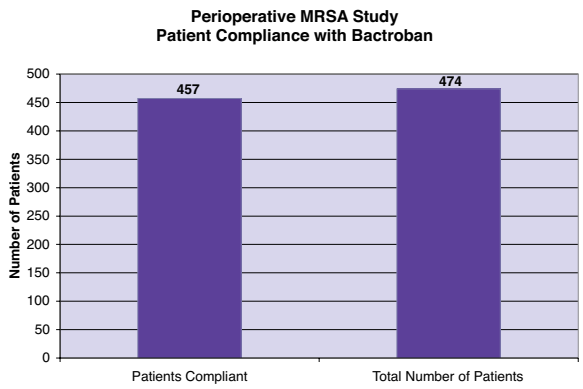
Anterior hip replacement surgery allows the surgeon to reach the hip joint from the front of the hip. The hip can be replaced in this manner without detachment of muscle from the femur or pelvis by working through the natural interval between muscles. The gluteal muscles which are most important for hip function are left undisturbed from this procedure and thus do not require a lengthy recovery process. Immediately following surgery, patients are able to bend their hip freely and bear full weight, resulting in a rapid return to pre-operative function.

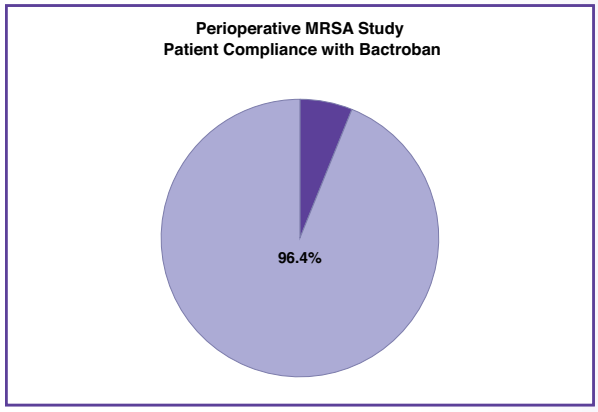




MRSA-The Super Bug

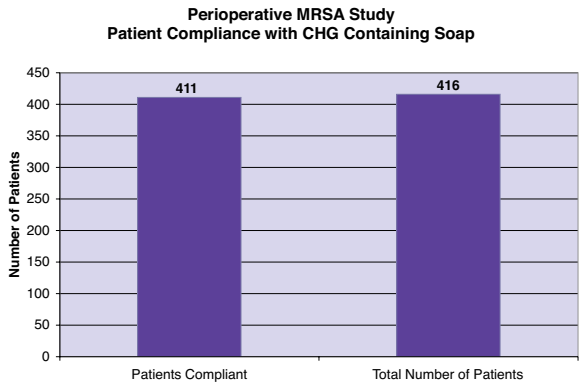
MRSA (Methicillin-Resistant Staphylococcus Aureus) is a resistant form of the Staphylococcus Aureus germ. MRSA has become a serious cause of human infections in the hospital, and more recently the community. Over the past decade there has been a large increase of MRSA in individuals who have never been hospitalized. At HJD we have initiated a comprehensive program to screen for and subsequently eradicate MRSA in our patients.

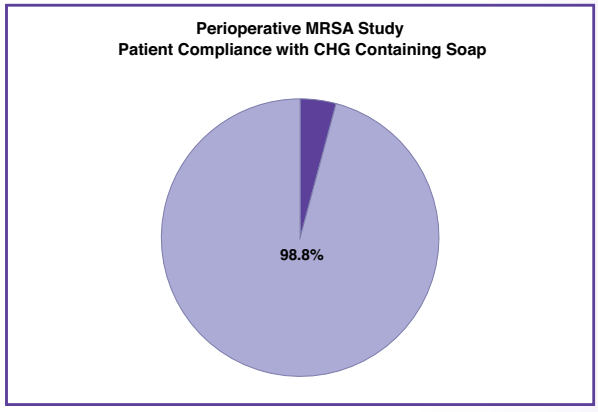




MRSA Study

Patients having total joint and spine surgery were participants in the MRSA study. The purpose of the study was to determine if all patients undergoing PAT (Pre-Admission Testing) were compliant with instructions to use CHG soap and Bactroban ointment. Data was measured by assessing patient compliance with instructions provided by PAT. Prior to surgery, patients underwent nasal swab testing for S. aureus. Then all patients were given specific directions to bathe with CHG-containing soap and a prescription for Bactroban-Mupirocin ointment to be applied in the nares. Patient culture results were reviewed pre-operatively; if the cultures were MRSA positive, the anesthesiologists on the case were made aware so that antibiotics could be changed to vancomycin. Data results indicated that 457 out of 474 patients were compliant with Bactroban usage, while 411 out of 416 patients were compliant with CHG soap.



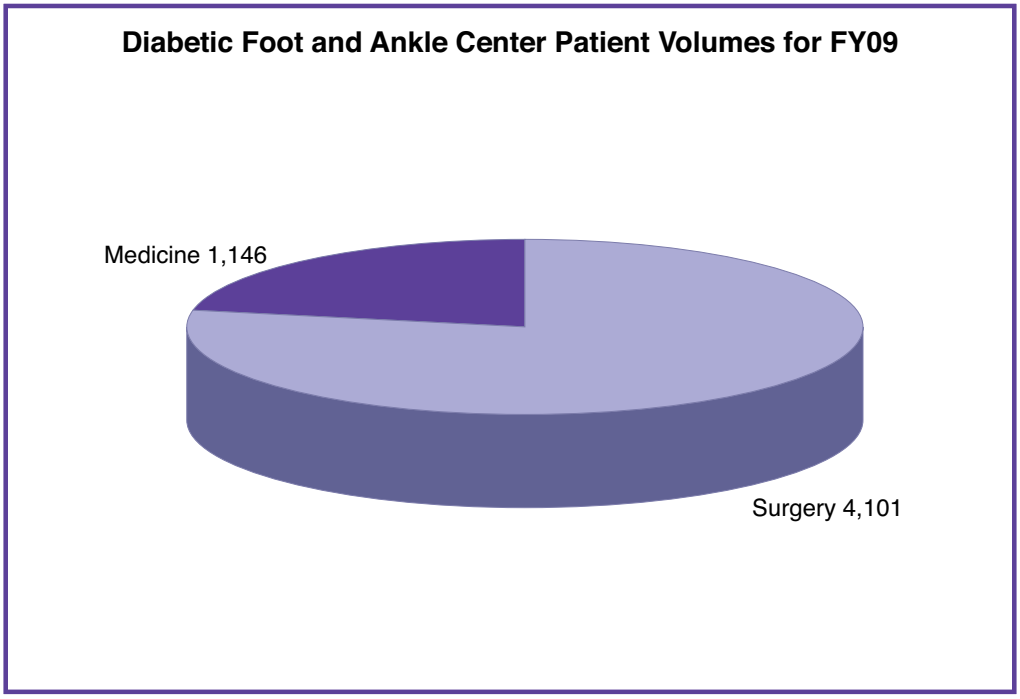


Division of Foot and Ankle Surgery

The Division of Foot and Ankle Surgery, one of the oldest in the United States, offers a complete spectrum of operative and non-operative treatments. Conditions treated range from complex surgical reconstructions to toe and ankle disorders. The physicians have special interest in sports-related injuries and serve as consultants to several professional sports teams. The Division has an active research program focusing on ankle replacement as well as complications related to diabetes.

The Center for Ankle Arthritis provides cutting-edge treatment for patients afflicted with debilitating ankle arthritis. Treatment options include bracing, injections and reconstruction. Surgical alternatives include minimally invasive arthroscopic debridement, distraction, fusion procedures and ankle replacement.

The Diabetes Foot and Ankle Center (DFAC) is a tertiary referral center specializing in limb salvage. The DFAC's mission is to prevent amputations in patients with diabetes. Orthopaedic surgeons, podiatrists, plastic surgeons, vascular surgeons and rehabilitation specialists manage complications such as ulcers, infections and Charcot deformities. An endocrinologist and nurse practitioner provide overall diabetes management.



Foot and Ankle Outcomes Research
Return to Sports Following Operatively Treated Ankle Fractures

While trauma of the foot and/or ankle is not life threatening, it can be life altering. A fracture of the foot or ankle that heals in a deformed position can cause significant functional deficit and pain. In order to discuss outcomes following open reduction internal fixation (ORIF) our institution has compiled a database including all operative repairs of ankle fractures.

Over a five-year period, 488 patients underwent surgical repair of an unstable ankle fracture. Of the 488 patients, 269 were male and 219 were female with a mean age of 42.5 years. Patients were placed into recreational activity-level or vigorous activity-level groups dependent on their level of pre-injury functional responses.

Postoperatively, patients were placed in a short leg splint for 1 week, followed by a fracture brace which was removed for active and passive ankle and subtalar range of motion exercises. Patients were not allowed to return to sports for three months. Of those in the 'recreational-activity level' prior to injury, 88% had returned to sports at 12 months.

Ankle/Foot Trauma
Impaired Functioning

Surgery

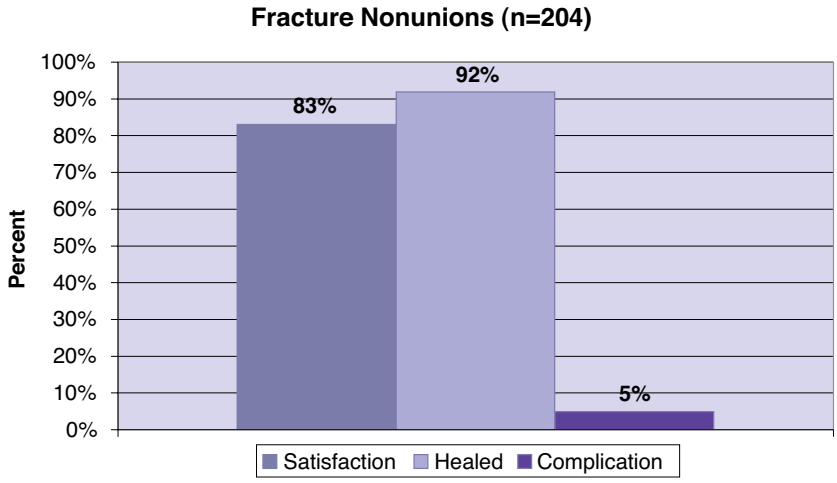
1 year post-op

1 year post-op
88% of recreational
athletes return to sports

Division of Trauma and Fracture Surgery

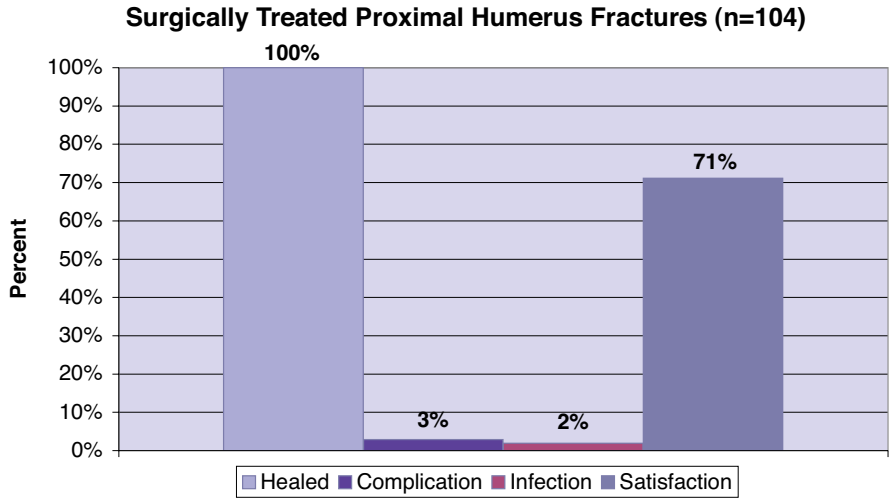
The Division of Trauma and Fracture Surgery treats a spectrum of cases ranging from patients with a single fracture to those suffering from multiple life- and limb-threatening musculoskeletal injuries. Due to the nature of trauma cases our orthopaedists, have strong working relationships with plastic surgery, neurosurgery, and vascular surgery services.

Significant attention is paid to the comprehensive evaluation and care of geriatric patients with hip fractures, as well as coordinated care of patients with all types of fractures. Late reconstructive procedures are commonly performed on such conditions as nonunions, malunions, and osteomyelitis.

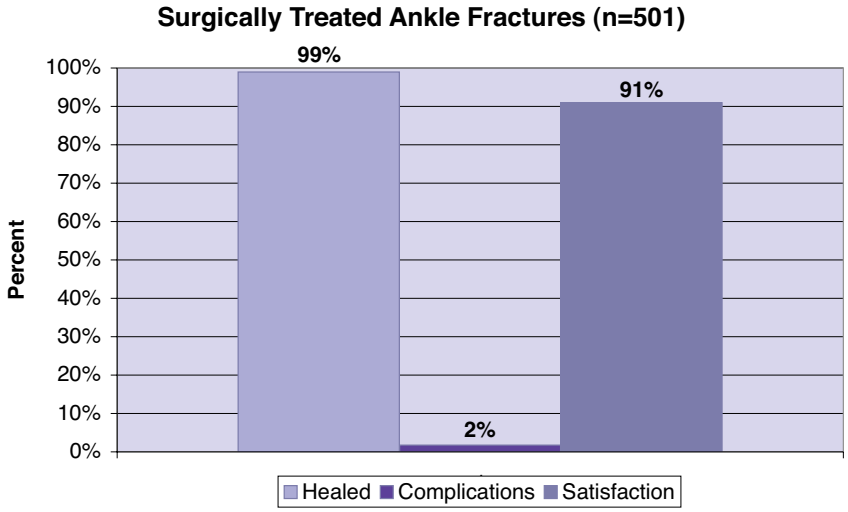


The Division is recognized nationally and internationally as a leader in patient-based outcomes. Our geriatric hip fracture program was among the first of its kind in the United States in the mid-1980s. Since then, the Division has continued to track patient outcomes in a variety of conditions. Another important area of investigation is the comparison of orthopaedic instrumentation and outcomes related to its' use.

Outcomes of Common Trauma Conditions



All of the fellowship-trained physicians in the Division are members of the Orthopaedic Trauma Association. The success of the outcome research performed by the Division of Trauma and Fracture Surgery has led to hundreds of presentations at national and international scientific meetings and publication of these results has changed Orthopaedic Surgery practice. Due to the Division's hugely successful enterprise, members are frequently asked to participate in major prospective, controlled trials with the premier orthopaedic centers around the world. Currently, areas of focus for the Division of Trauma and Fracture Surgery include both commonly encountered injuries (ankle fracture and wrist fractures) and less commonly encountered conditions (proximal humerus fracture and fracture nonunions).

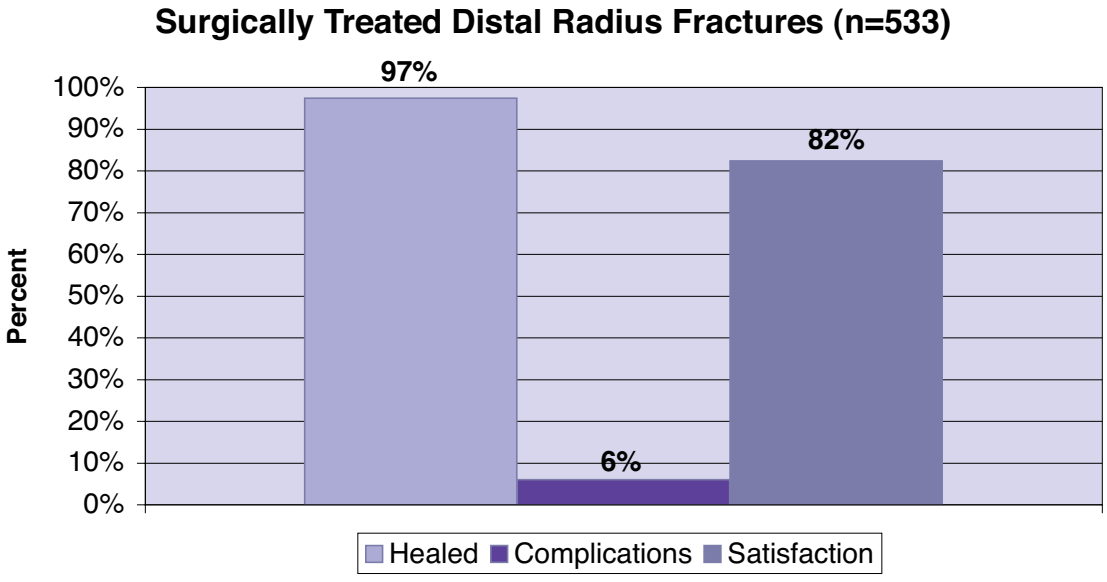


The Division of Hand Surgery is the largest academic and clinical division of its type in the nation. The faculty is comprised of more than 20 board-certified and fellowship-trained hand surgeons who provide comprehensive evaluation and treatment for the many and varied problems that affect the upper extremity.

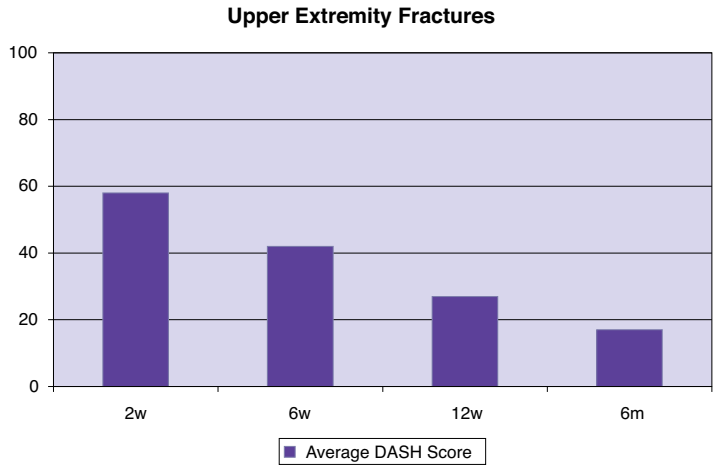
Prospective Surgical Outcomes Database

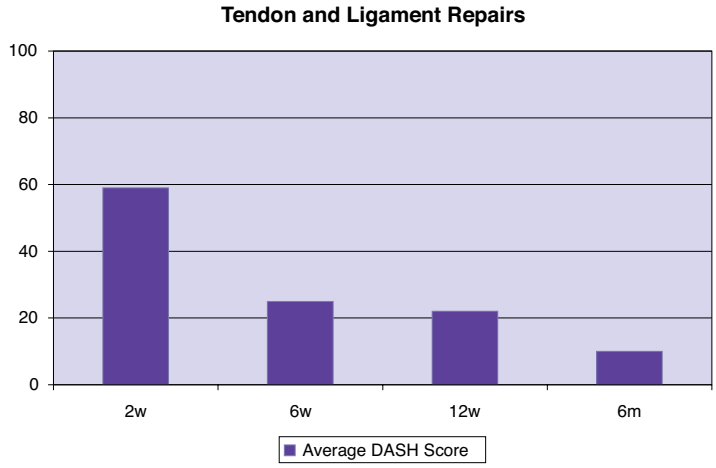
The Division of Hand Surgery maintains a prospective surgical outcomes database. The database accesses the outcomes of patients who have undergone any of the 20 surgeries that are being studied. Approximately 300 patients per year are recruited with the goal of acquiring data on over 1,000 patients in each category.

These include congenital deformities, acute and chronic injuries that often have resulted from sports activities, arthritic deformities, nerve compressions, neuromuscular disorders and tumors. Our experienced physicians perform more than 1,000 operative procedures each year.

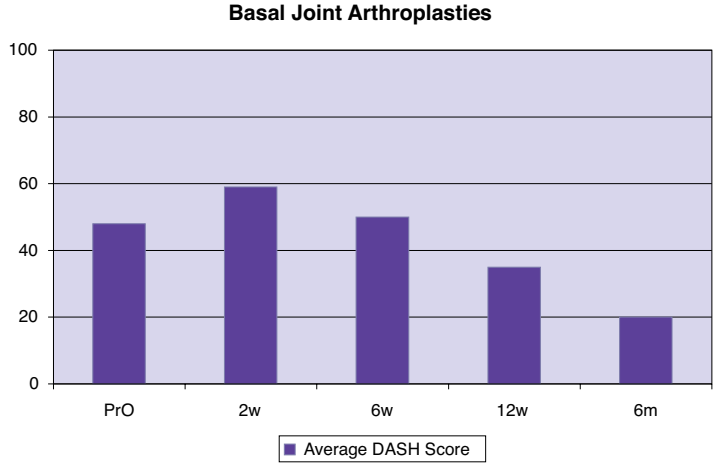


DASH stands for Disabilities of the Arm, Shoulder and Hand. The DASH outcome measure is a 30 question self-reported survey deigned to measure physical function and symptoms in individuals with musculoskeletal disorders of the upper limb. **The lower the DASH score the better the outcome.** As you can see in the 3 charts below our surgeons had successful outcomes.





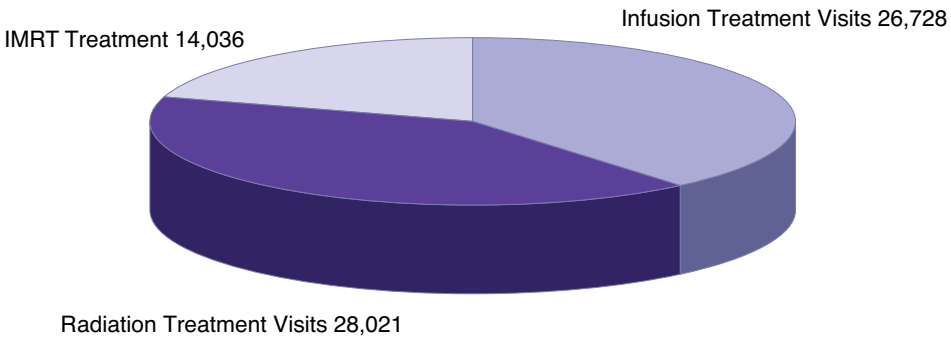
Patient education is important to us as well as clinical research aimed at both prevention and improving diagnostic and treatment techniques. Research is currently being conducted in ligament and bone injuries of the wrist and hand, nerve compressions and tendon healing.



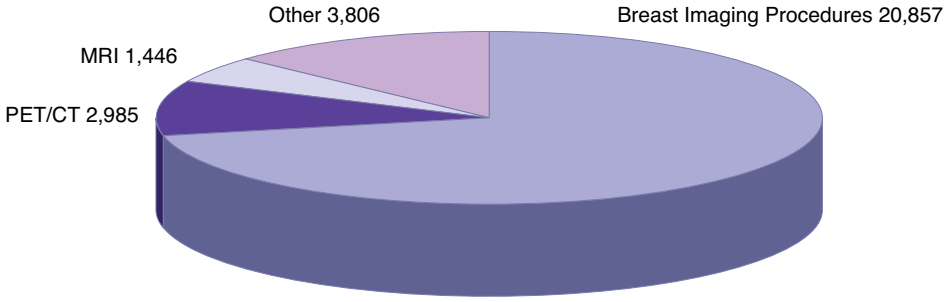
Division of Orthopaedic Oncology

The Division of Orthopaedic Oncology and the NYU Clinical Cancer Center cares for patients with a broad spectrum of neoplastic processes involving the musculoskeletal system. Benign and malignant tumors of the bone and soft tissue are evaluated in a multidisciplinary setting. Utilizing the expertise of our orthopaedic surgeons and our colleagues in medical oncology, pediatric oncology, radiation oncology, pathology, and radiology, patients and their complex disease states are diagnosed and cared for using the best available treatments.

Clinical Cancer Center Treatment Visits for FY09

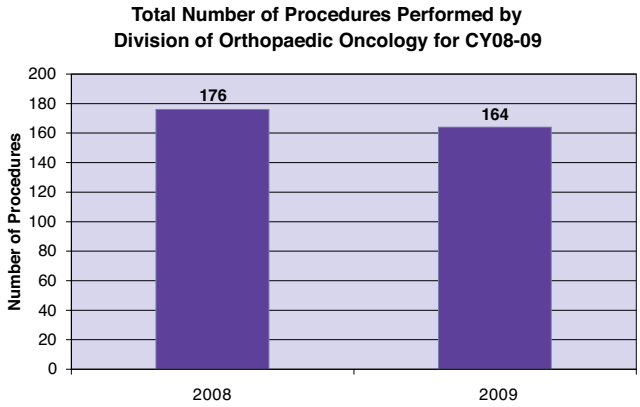


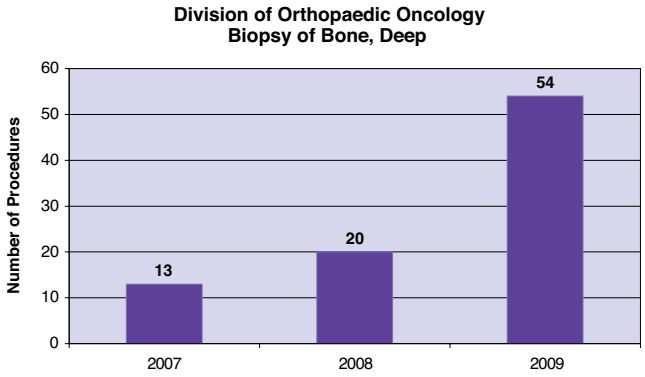
Clinical Cancer Center Imaging Procedures for FY09



Our Department is committed to ensuring the best possible care in every subspecialty, and to ensuring access to care for every type of orthopaedic condition. In the case of orthopaedic oncology, specialized treatment of neoplasms of the bone and other musculoskeletal tumor-related conditions is needed. While we recognize that such conditions are encountered much less frequently than some commonly seen orthopaedic problems, we believe that each case deserves the best care from specialized experts. In this concept we have the benefit of being part of the NYU Clinical Cancer Center a renowned leader in world-class cancer care.

In 2008, when the Department recognized a need to add to our Division, we recruited our new Chief of Orthopaedic Oncology, Timothy Rapp, MD. Dr. Rapp joined the department in late 2009. Under his leadership, the Department expects the best of orthopaedic oncology care to be provided.



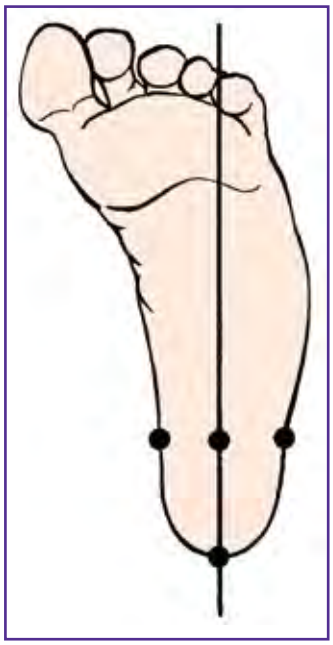


"Bone biopsies are common procedures performed by surgeons within the division to aid in the diagnosis of bone tumors. The information obtained from the biopsy is considered in the context of other unique patient information to help direct future treatment."

–Dr. Timothy Rapp, Chief, Division of Orthopaedic Oncology

Division of Pediatric Orthopaedic Surgery

The Division of Pediatric Orthopaedic Surgery *treats children with a variety of diagnoses including but not limited to hip dysplasia, limb deformity and shortening, clubfeet, scoliosis and cerebral palsy. The measurement of objective as well as subjective functional outcomes for both non-surgical and surgical interventions play an important role in the thorough assessment of children and adolescents.*



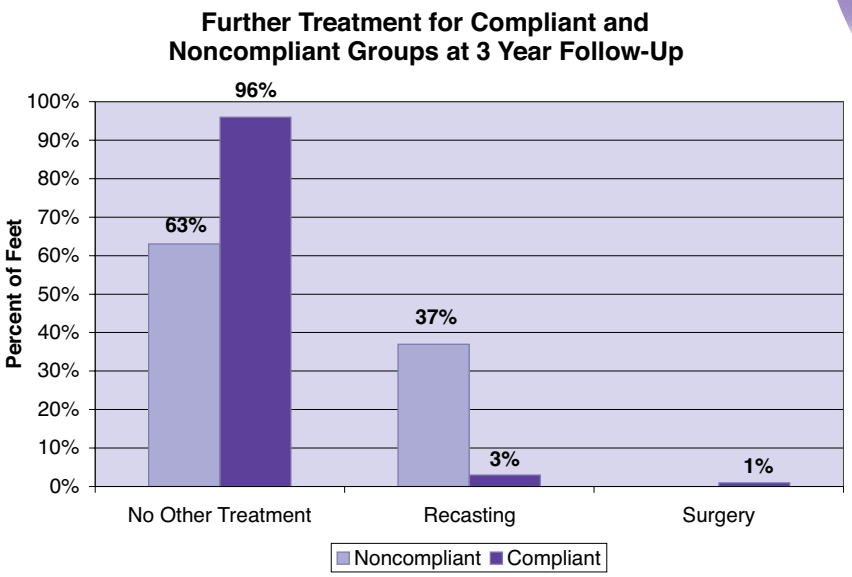
Evaluation of range of motion, strength, gait and radiographic findings contribute to the objective evaluation. Based on diagnosis, patients and their parents complete questionnaires regarding level of pain, endurance, and ability to perform activities of daily living. This includes the Scoliosis Research Society's SRS-22r Patient Questionnaire for patients with scoliosis, the Oxford Ankle Foot Questionnaire for patients with ankle or foot conditions, and the Pediatric Outcomes Data Collection Instrument for patients with a wide range of diagnoses. The inclusion of both pre and post-treatment assessments provides the opportunity to determine treatment effectiveness in terms of physical and functional outcomes.

Our interdisciplinary team includes: pediatric orthopedists, pediatricians, pediatric neurologists, pediatric physiatrists, geneticists and physician assistants, nurse practitioners, pediatric neurosurgeons, pediatric rheumatologists, genetic counselors, pediatric physical and occupational therapists, pediatric nurses, pediatric psychologists, social workers, child life specialists and orthotists.

Treatment of Idiopathic Clubfoot Using the Ponseti Method

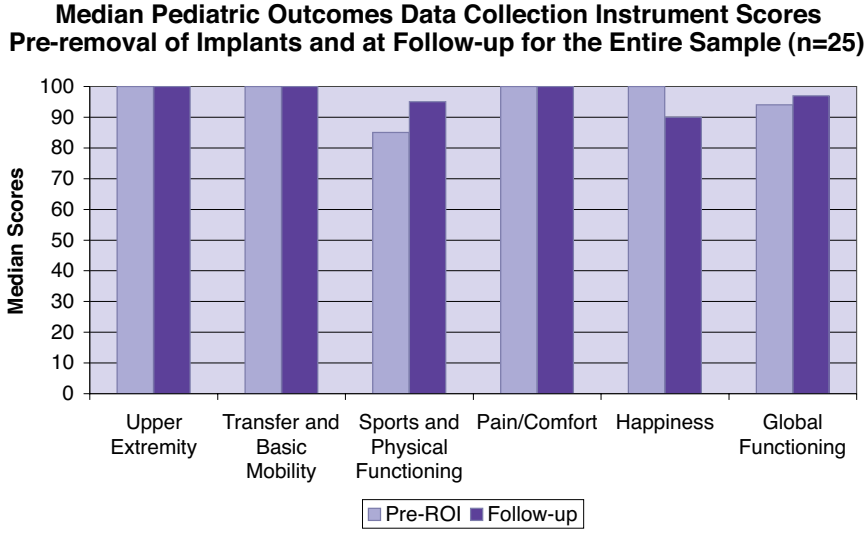
137 idiopathic clubfeet were treated by the Ponseti technique and followed for at least 2 years. Only 7% were not corrected with initial casting and required early surgery. Recurrence after correction was related to compliance with bracing. At latest follow-up, 2/3 of those noncompliant with brace had recurrences, with 1/3 of those recurrences requiring more extensive surgery than Achilles tenotomy and anterior tibial tendon transfer. When the Ponseti method was fully followed including initial casting, compliance with brace and treatment of recurrences by recasting Achilles tenotomy and/or anterior tibial tendon transfer our success rate was 93%.

The chart below compares the distribution of the types of further treatment required by the time of the 2-year-follow-up for the compliant and noncompliant groups. The compliant group was significantly less likely to have required further treatment than the noncompliant group.



Outcomes Analysis After Routine Removal of Implants (ROI) in Healthy Pediatric Patients

The short-term effects of routine, non-spinal implant removal from a healthy pediatric population was followed using outcomes analysis to prospectively compare pre-ROI and follow-up ROI. Outcome measures were tracked using a 10-point pain assessment scale (0=no pain; 10=worst pain) and the Pediatric Outcomes Data Collection Instrument to evaluate functional and psychosocial status. 25 consecutive patients ranging from 3 to 18 years old underwent elective orthopaedic ROI. The follow-up group consisted of 10 pediatric patients and 15 adolescent patients. A statistically significant improvement from pre-ROI to post-ROI was found in transfer/basic mobility, sports, and global functioning.



Division of Shoulder and Elbow Surgery

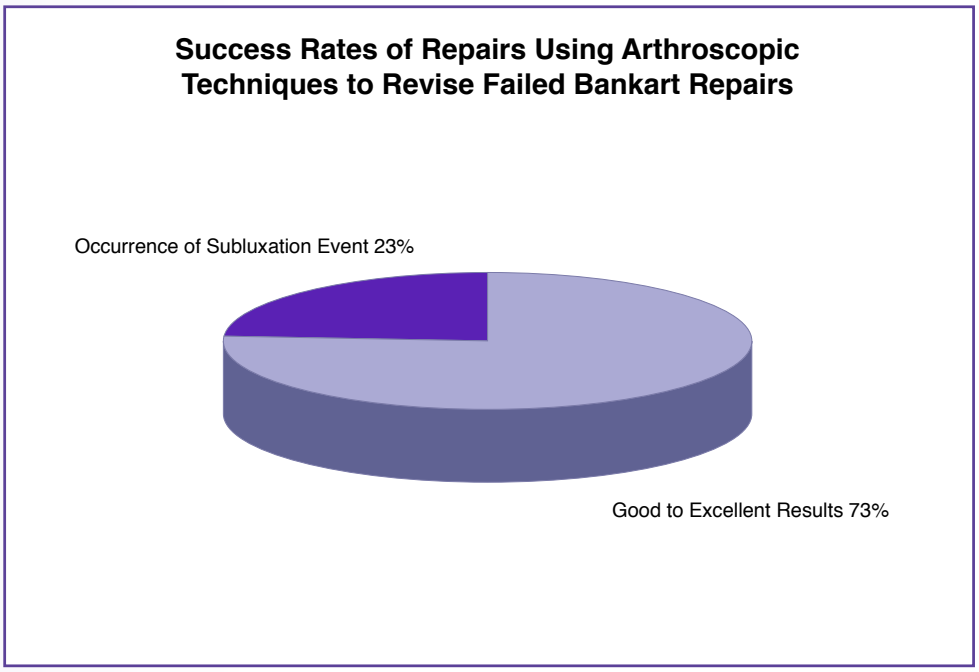
The Division of Shoulder and Elbow Surgery manages both operative and non-operative treatment of athletic, traumatic and degenerative problems. Specific diagnoses include rotator cuff pathology, instability, arthritis, and fracture of the shoulder and elbow. In 1989 we established the Shoulder and Elbow Research Group, which continues to perform both clinical and basic science research projects on a variety of topics related to shoulder and elbow problems.

Prospective Surgical Outcomes Database

The Division maintains a surgical outcomes database which tracks over 1,000 patients undergoing surgery each year. Several validated scoring systems are used to assess the results of surgery for all of the various procedures performed including rotator cuff repair, instability surgery, arthroplasty, and fracture care.

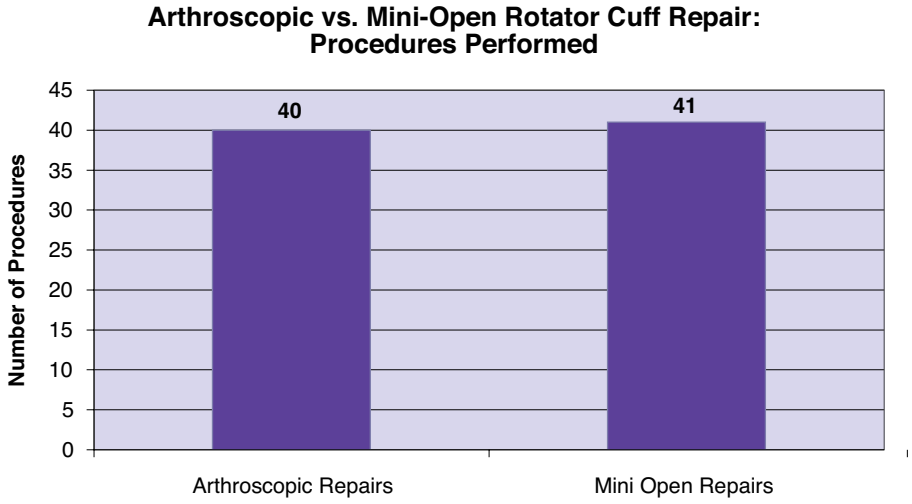
Arthroscopic Revision of Bankart Repair

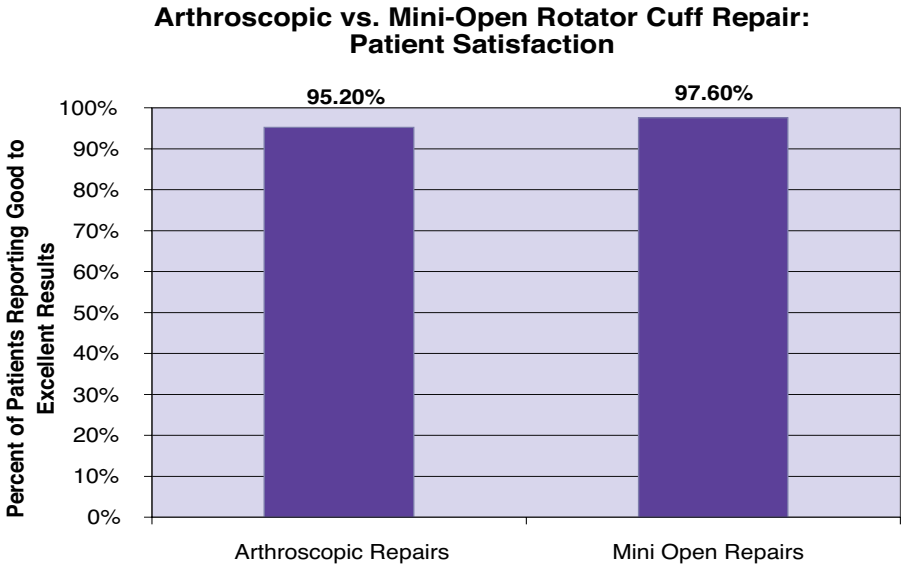
The purpose of this study was to examine the success rates of repairs achieved using arthroscopic techniques to revise failed Bankart repairs. At a mean of 34 months (n=12) following revision surgery, good to excellent results were achieved in 73% of patients according to the Rowe and UCLA scoring systems. A subluxation event occurred in 27% of patients at a mean of 8.7 months postoperatively. This study indicates that in select patients, arthroscopic techniques can be employed to revise failed Bankart repairs.



Arthroscopic Versus Mini-Open Rotator Cuff Repair: A Comparison of Clinical Outcomes and Patient Satisfaction

This study compared the results of arthroscopic and arthroscopically assisted rotator cuff repair in a series of 84 patients. There were 42 patients in each group. According to the UCLA scoring system, good to excellent results were achieved in 96.4% of patients (40 arthroscopic repairs [95.2%] and 41 mini-open repairs [97.6%]). The ASES scores averaged 91.1 and 90.2 for the arthroscopic and mini-open groups, respectively. Of the 84 patients in the study, 98.8% reported being satisfied with the results of the surgery.



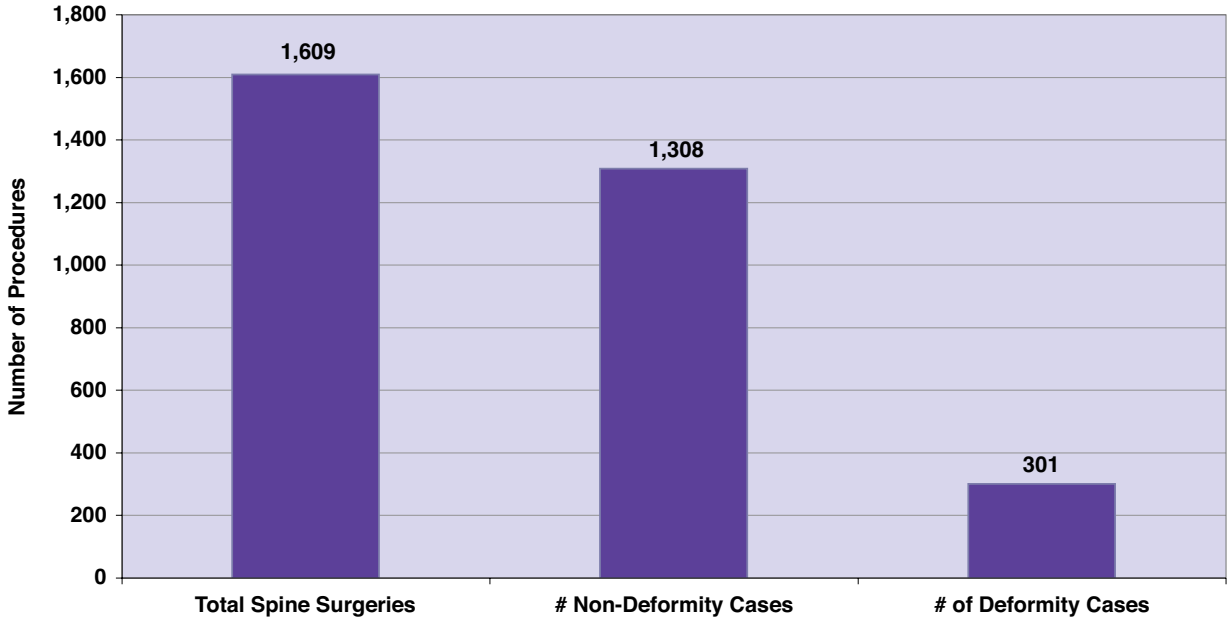


The Division of Spine Surgery provides comprehensive treatment of adult and pediatric spine disorders. The Division treats the full spectrum of cases, including routine degenerative problems, complex spinal growth disorders, neuromuscular disorders and revision surgeries. Physicians in the spine program utilize the most up-to-date techniques to treat spinal conditions.

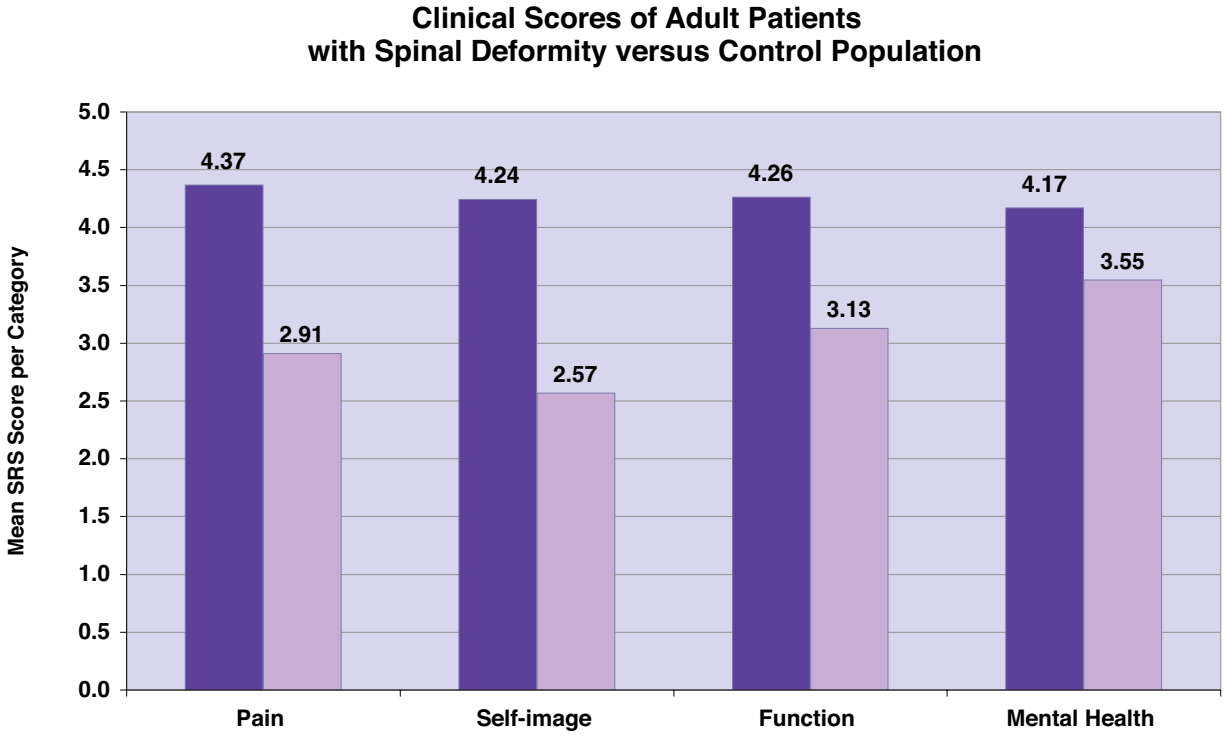
Examples of the most recent advances in spine surgery include cervical and lumbar total disc replacements as well as minimally invasive techniques to treat herniated discs, scoliosis and kyphosis, just to name a few. The Division of Spine Surgery conducts both clinical and basic science research. We have participated in the largest study of surgical and non-operative spinal treatments, national patient outcome studies on artificial discs, and we are world leaders in understanding the significance of spinal balance and posture as it relates to outcomes after spinal surgery.

In 2008, our spine physicians surgically treated the spinal conditions of 1,609 patients. Surgical care spanned the entire spectrum of spinal disorders in children and adults, including spinal deformity, degenerative disease, trauma, tumors and infections of the spine. Of the 1,609 cases, approximately 1,308 cases were non-deformity and 301 cases were deformity. We are enrolling all deformity patients in our spine deformity database and are also participating in an outcomes registry called Spine Tango.

Distribution of the 2008 Spine Surgical Cases by Disease Category



Using validated quality-of-life instruments, it is possible to quantify a person's own perception of his or her spine condition. This study compared patients with adult spinal deformity (ASD) to a control population of individuals who had not been diagnosed with spinal deformity or other spine conditions. As indicated in the graph, patients with adult spinal deformity demonstrate lower scores in terms of pain, self-image, function and mental status than the control population.



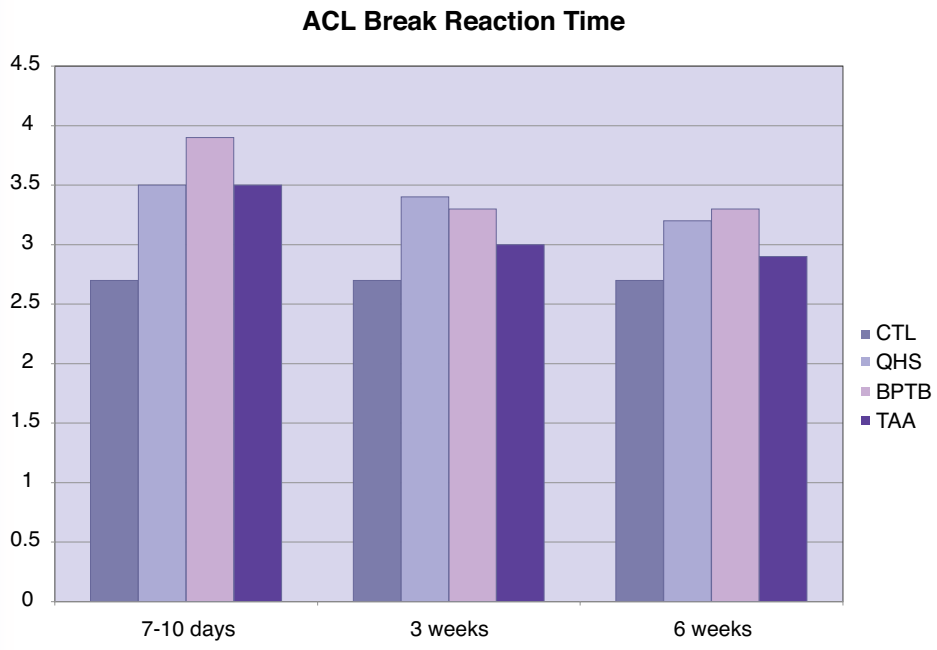
The Division of Sports Medicine incorporates a strong foundation in clinical and basic science research to provide the basis for patient management. Our research initiatives range from cartilage restoration, knee ligament reconstruction, arthroscopic rotator cuff repair, minimally invasive treatment of sports-related injuries, and advanced technologies in nonoperative management of chronic tendinopathies.

Return to Driving After Right Knee ACL Reconstruction

Anterior cruciate ligament (ACL) reconstruction is one of the most commonly performed surgeries in the United States, with more than 100,000 cases annually. Advances in minimally invasive surgical techniques and improved rehabilitation protocols have resulted in a quicker return to activities of daily living, however the appropriate length of time before returning to safe operation of an automobile remains largely unknown and without scientific basis. The Division of Sports Medicine designed a study to develop recommendation guidelines for returning to driving after ACL reconstruction.

Driving Study

Patients scheduled for right knee anterior cruciate ligament (ACL) reconstruction surgery were recruited for this study. Study subjects were tested on a virtual reality driving simulator that tested their ability to brake in reaction to sudden, random events. 10 patients in this study received a bonepatellar tendon-bone autograft, 10 received quadruple hamstring autograft, and 10 received a tibialis anterior tendon allograft. Brake reaction data was compared between groups and against control data from 20 healthy volunteers. At 6 weeks after surgery, patients who had undergone ACL reconstruction had significantly slower brake times than control subjects. The subgroup of patients who received allografts performed better at 6 weeks compared to other graft types and did not differ significantly from control subjects in brake reaction time. Based on this data, we recommend that patients be restricted from driving activity after ACL reconstruction for greater than 6 weeks.

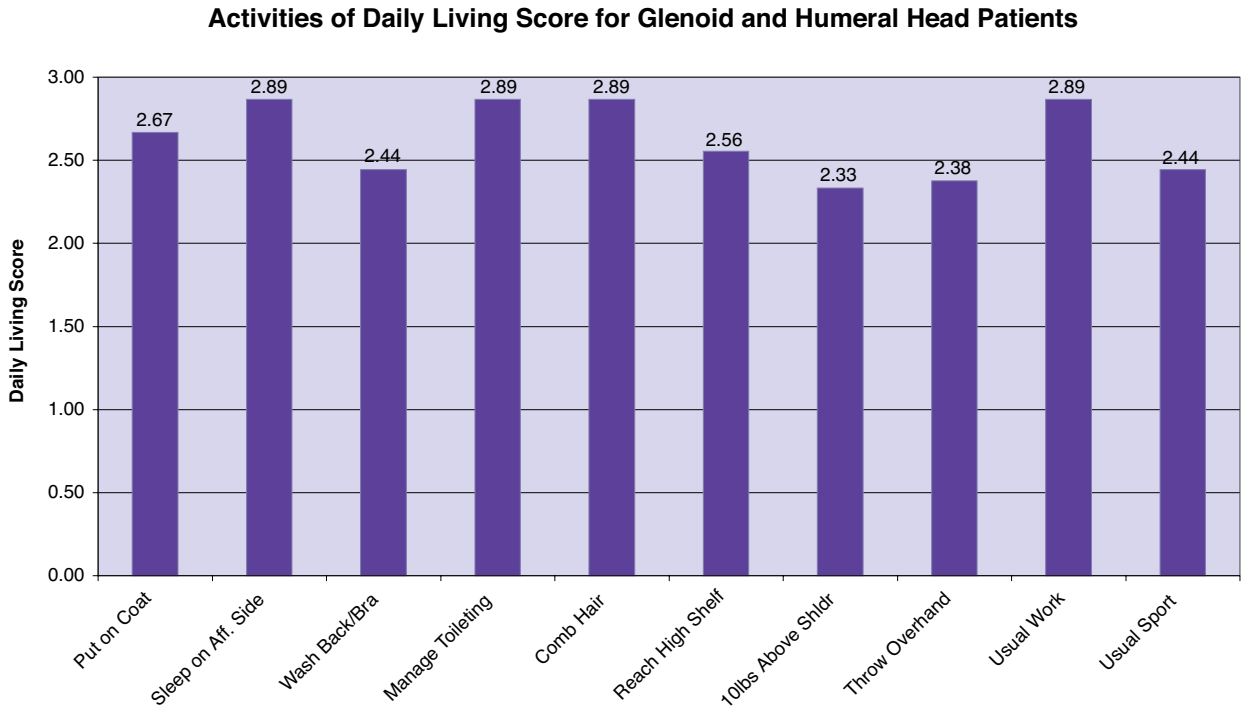


Glenohumeral Instability Cases Involving Bone Grafting

Outcomes: A number of patients with recurrent shoulder instability have been treated at our institution. We evaluated them as part of a study to investigate the long-term results of reconstruction of the glenoid or humeral head with autogeneic or allogeneic bone for treatment of chronic shoulder instability with significant bone loss.

We reviewed the records of patients who underwent open stabilization of the shoulder with glenoid and/or humeral-head bone grafting for chronic dislocations. The patients were evaluated by the UCLA and American Shoulder and Elbow Surgeons (ASES) scoring systems.

Our data demonstrates that patients treated at HJD for recurrent shoulder instability have pain of less than 1, on a scale of 1 to 10, an average ASES score of about 85 out of 100, and an average UCLA score of about 30 out of 35. Overall, anatomical bone grafting procedures can provide reliable short- to medium-term protection against recurrent instability with predominantly good-to-excellent results.



Selected Publications

Total Publications 2007: 193
Total Publications 2008: 173
Total Publications 2009: 159

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Continuing Medical Education

The Department's Continuing Medical Education Program is coordinated through the New York University Post-Graduate Medical School (NYU PGMS). Orthopaedic courses are a central part of the offerings provided by NYU PGMS. The NYU Post-Graduate Medical School is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

2010 Course Offerings

May 1: New Technologies in Hand and Upper Extremity Surgery: A Bioskills Course (Lee/Paksima/Posner)

May 13-14: Sir Robert Jones Lecture

May 15: Orthopaedic Oncology Review Course [Board Review Course] (Rapp)

September 24: Prevention, Evaluation and Treatment of Diabetic Foot and Ankle Complications (Mroczek/Lind)

October 14-15: Pediatric Cerebral Palsy Course (Feldman)

October 22: Tri-State Trauma Symposium (Egol)

November 6: Current Concepts in the Treatment of Rotator Cuff Tears (Rokito/Jazrawi)

November 11: Comprehensive Spine Course Part I: Examination, Evaluation & Diagnosis (Varlotta/Errico)

November 12: Comprehensive Spine Course Part II: Therapeutic Intervention (Varlotta/Errico)

For further information regarding CME at NYULMC please visit the NYULMC CME website: http://cme.med.nyu.edu/courses

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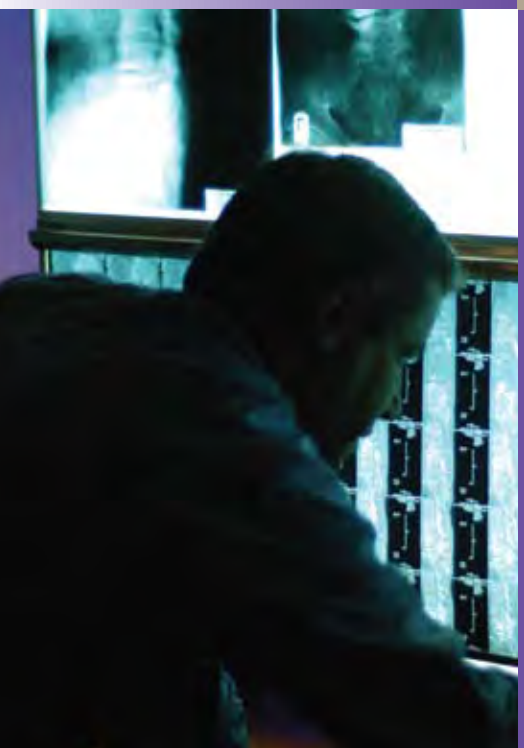

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