The Mount Sinai Hospital consistently ranks among the best for Otolaryngology by U.S. News and World Report.

Table of Contents

2 Message from the Dean
3 Message from the Chairman
4 Outcomes and Performances
   6 The Patient Hospital Experience
   7 The Patient Practice Experience
   8 Departmental Volume and Growth
   10 The Head and Neck Institute and Division of Head and Neck Oncology
   16 The Division of Facial Plastic and Reconstructive Surgery
   22 The Division of Laryngology
   24 The Division of Oral and Maxillofacial Surgery
   28 The Division of Otolaryngology and Neurotology
   32 The Division of Pediatric Otolaryngology
   34 The Division of Rhinology and Skull Base Surgery
   38 The Division of Sleep Surgery
40 Research and Clinical Trials
   40 Clinical Trials
   43 Grants
44 Faculty Publications
   44 Head and Neck Oncology
   45 Facial Plastic and Reconstructive Surgery
   46 Laryngology
   46 Oral and Maxillofacial Surgery
   46 Otolaryngology
   47 Otolaryngology and Neurotology
   47 Pediatric Otolaryngology
   47 Rhinology and Skull Base Surgery
   47 Sleep Surgery
48 Faculty and Clinical Specialists
52 Practice Locations

This material and more information about the Department of Otolaryngology–Head and Neck Surgery can be found at www.mountsinai.org/ent.

Mission
The mission of the Mount Sinai Health System is to provide compassionate patient care with seamless coordination and to advance medicine through unrivaled education, research, and outreach in the many diverse communities we serve.

Vision
The Mount Sinai Health System’s vision is to continue to grow and challenge convention through our pioneering spirit, scientific advancements, forward-thinking leadership, and collaborative approach to providing exceptional patient care.

www.mountsinai.org

The Department of Otolaryngology – Head and Neck Surgery extends a sincere thank you to Linda and Art Charpentier for their generous contribution making this report possible.
Once again, the Mount Sinai Health System’s Department of Otolaryngology – Head and Neck Surgery demonstrates outstanding leadership and initiative in this year’s annual Outcomes and Performance report. By employing novel programs aimed at reducing complications, the Department achieved a variety of patient care benefits and improvements in clinical outcomes.

This year’s report highlights several innovative hospital quality programs, including the Stop Sepsis Program and the Inpatient Hospitalist Program, as well as critical clinical and research advances aimed at enhancing precision medicine and the patients’ experience. Innovative clinical programs, such as the cranial nerve 5 to 7 transfer for facial nerve paralysis and virtual surgical planning for mandibular reconstructive surgery, as well as the discovery of a master switch (gene NR2F1) for tumor dormancy, are advances that have a significant impact on patient care today, and patient care tomorrow.

It is my pleasure to share with you the accomplishments of this outstanding Department, one that exemplifies Mount Sinai’s mission to advance biomedical research, drive clinical improvements, and accelerate medical innovation.

Dennis S. Charney, MD
Anne and Joel Ehrenkranz Dean
Icahn School of Medicine at Mount Sinai
President for Academic Affairs
Mount Sinai Health System

This year’s Outcomes and Performance Report highlights the performance of the Department of Otolaryngology – Head and Neck Surgery at the newly formed Mount Sinai Health System. The formation of the health system has resulted in an expansion of the full time and voluntary faculty, as well as clinical services. Once again, patient visits increased and the Department experienced an increase in the volume of complex surgical cases.

To improve patient care, we have introduced two new programs, the Stop Sepsis Program and the Inpatient Hospitalist Program. The former is designed to identify and manage patients at risk for infection before sepsis ensues. The latter program aims to place every inpatient under the care of an inpatient hospitalist with the intent of improving personalized care. Both programs have proven successful in improving patient care and reducing complications.

In an effort to expand our patient-centered efforts across the health system we have recruited Dr. Mark Courey as the Vice Chair of Quality. Dr. Courey will work with his team to standardize outcomes metrics with the goal of continued improvement. At the Mount Sinai Health System, we remain dedicated to safe and efficient care for all of our patients. I hope that you find this report helpful and informative.

Eric M. Genden, MD, MHCA, FACS
Professor and Health System Chairman
The Department of Otolaryngology – Head and Neck Surgery
Mount Sinai Health System

Dennis S. Charney

Eric M. Genden

Outcomes and Performance 2015
Mount Sinai Health System’s Department of Otolaryngology-Head and Neck Surgery
Stop Sepsis Program
Perioperative sepsis has been identified as a major contributor to inpatient morbidity and mortality. In 2014, The Department of Otolaryngology- Head and Neck Surgery enrolled in Mount Sinai’s “Stop Sepsis Program.” This intervention program is a patient-centric, data-driven solution that addresses early identification and management of patients with suspected sepsis. Early recognition includes real-time patient tracking and Best Practice Alerts to signal clinicians about patients at high risk for mortality. Patients are evaluated within one hour of the best practice alert to assess their clinical status. This early warning system was used to activate clinical pathways as appropriate. The program has proven successful in identifying patients at risk, and early intervention has improved patient safety. This is evident in the Department’s zero percent sepsis mortality rate in 2014 and 2015.

Inpatient Hospitalist Program
Another hospital quality program the Department adopted was the Mount Sinai Departments of Otolaryngology and Internal Medicine initiative, the Inpatient Hospitalist Program. This ambitious co-management program aims to improve inpatient satisfaction, decrease cost and length of stay, decrease morbidity (including post-operative complications) and decrease readmissions among high-risk surgical patients. Actively participating in the medical care of the patient, the hospitalist manages all facets of chronic disease, communication with house staff and surgical providers, recommendations from the preoperative evaluation, communication with the patients and their families, communication with the patient’s PCP and consultations with subspecialty services. This Program was implemented in July 2015, and since its inception, it has had a positive impact on our inpatient outcome measures. Specifically, this partnership has resulted in a reduction in our expected inpatient hospital stay as well as our 30-day readmission rate.

What Have We Accomplished?

Outcomes and Performances

Sepsis cases are on the rise in the United States. More than 1.1 million people get sepsis in the hospital each year, according to the CDC. Between 28 and 50 percent of these people die from it. Mount Sinai is leading sepsis prevention with its groundbreaking “Stop Sepsis Program.”

The Department of Otolaryngology – Head and Neck Surgery, which adopted the Stop Sepsis Program in 2014, had a zero percent sepsis mortality rate in 2014 and 2015.

30-Day Readmission Rate

Mount Sinai Health System’s Department of Otolaryngology-Head and Neck Surgery
The patient hospital experience is a measure of critical aspects of patients’ hospital experiences, such as communication with nurses and doctors, the responsiveness of hospital staff, the cleanliness and quietness of the hospital environment, pain management, communication about medicines, discharge information, overall rating of hospital, and would they recommend the hospital. Working with nursing leadership, we have improved our patient's hospital experience by addressing our patients needs.

Outpatient Patient Satisfaction Scores

Hospital Consumer Assessment of Healthcare Providers and Systems Inpatient Scores (HCAHPS)

Outcomes and Performance 2015

Mount Sinai Health System’s Department of Otolaryngology–Head and Neck Surgery

“I am now sighted and cancer free,” says Brian Lowery (right) after robotic surgery with Dr. Miles for oral cancer

World Trade Center patient Michael with Dr. Iloreta, who performed his sinus surgery
Departmental Volume and Growth

**Patient Encounters**
The volume of patient encounters has consistently increased at the Mount Sinai Health System’s Department of Otolaryngology – Head and Neck Surgery. Department physicians evaluate over 100,000 patients a year. The volume provides extraordinary data set to focus on the patient experience and surgical and medical outcomes.

**Surgical Volume**

**Rate of Readmission and Reoperation**

**Mortality Rate**
Mortality rate is the measure of patients that expire during hospitalization. The rates are calculated as a ratio of the number of deaths among hospital patients with the specific medical condition or procedure by the total number of patients admitted for that same medical condition or procedure. The risk adjustment method is used to account for the impact of individual risk factors such as age, severity of illness and other medical problems that can put some patients at greater risk of death than others.

Source: University Health System Consortium

Outcomes and Performance 2015

Mount Sinai Health System’s Department of Otolaryngology-Head and Neck Surgery
Head and Neck Institute and Division of Head and Neck Oncology

"The Head and Neck Institute at Mount Sinai is internationally known for its pioneering work in the management of head and neck cancer, reconstruction, training and research."

Dr. Eric M. Genden
Isidore Freisner Professor and Chairman
Department of Otolaryngology-Head and Neck Surgery
Mount Sinai Health System

In 2015, the Mount Sinai Health System’s Division of Head and Neck Oncology was the highest volume surgical unit in the state of New York. The multidisciplinary program offers patients minimally invasive skull base surgery, robotic transoral surgery, and minimally invasive thyroid and parathyroid surgery, and a program for personalized therapy. The Head and Neck Institute offers a variety of innovative trials for patients with human papilloma virus (HPV)-related oropharyngeal cancers, patients with advanced thyroid cancer, and patients seeking personalized therapy.

Patients from across the nation and around the globe seek the unparalleled care Mount Sinai’s team offers for all stages of head and neck disorders and cancers.

Outcomes and Performance 2015
Robotic-Assisted Reconstruction

TransOral robotic surgery (TORS) provides a minimally invasive approach to the oropharynx. In many cases, TORS provides an alternative to the midline mandibulotomy lip splitting incision approach. This decreased patient morbidity and length of hospital stay. Extensive defects of the oropharynx can be left to heal by secondary intent, managed with a regional flap, or reconstructed with a free flap.

Reconstructive Techniques

Head and Neck Oncology Clinical Trials Program

Innovative clinical trials are critically important to patient care and provide patients an opportunity to gain access to the newest treatments, often at no cost. In 2015, several new trials were opened providing a variety of surgical, medical, and radiation trials available as options for our patients. As part of the Tisch Cancer Institute, the Division of Head and Neck Oncology has consistently remained a top performer within the solid tumor research program at Mount Sinai in terms of clinical trial accrual and has increased clinical trial accrual by 36.7% from 2013-2015. The Division of Head and Neck Oncology continues to maintain and expand a wide portfolio of state-of-the-art clinical trials available to our patients afflicted with head and neck cancer.

Head and Neck Oncology-Trial Enrollment

Reducing Infection Risk for Major Head and Neck Surgery

The Division of Head and Neck Oncology reviewed the risk of surgical site infections in 266 patients who underwent free tissue transfer involving the oral cavity and pharynx from 2009 to 2014 at Mount Sinai in order to determine factors which could improve outcomes. The goal was to identify risk factors and reduce infection rates in our patients undergoing major surgery. While our Departmental infection rate is consistent with the infection rate of most major medical institutions in the United States, a surprising finding was noted in patients who had received clindamycin alone for prophylaxis, due to drug allergy or other indication. Clindamycin was associated with an approximate 4-fold increased risk for surgical infections (odds ratio, 3.784; 95% confidence interval: 1.367-10.470 [P = .010]) after controlling for confounding factors. These findings were published in Otolaryngology Head Neck Surgery, November 2015, “Increased Surgical Site Infection Rates following Clindamycin Use in Head and Neck Free Tissue Transfer.”

This has prompted a departmental policy change at Mount Sinai with increased antibiotic coverage in this specific group of patients in order to reduce the infection risk. Additionally, infection rates will be tracked continuously to determine the effects of the altered regimen.

Head and Neck Institute

Outcomes and Performance 2015

Mount Sinai Health System’s Department of Otolaryngology-Head and Neck Surgery
Parathyroid disease is the third most common endocrine disorder affecting 0.3% of the general population, 1%-5% of postmenopausal women and a total population incidence of 21.6 cases per 100,000 person-years. The disease usually occurs as the result of sporadic parathyroid adenomas, but can also be seen in association with multiple endocrine neoplasia and in rare genetic syndromes and metabolic diseases. Identification of the parathyroid adenomas is critical to achieving minimal invasive surgery and conferring a disease cure. Researchers at the Mount Sinai Head and Neck Institute have been investigating the use of 4-dimensional CT scan imaging to identify the diseased gland when conventional imaging fails to identify and localize the diseased gland.

Cases of Parathyroid Disease

In 2015, 21% of cases referred for management were not localized using conventional ultrasound and sestamibi nuclear imaging.

The Impact of 4 Dimensional CT Scan Localization

During this study, 83% of non-localized cases were localized using 4D CT scanning. This data suggests that 4D CT may supplant ultrasound and sestamibi imaging as a first-line localization study. Additionally, it has been our experience that 4D CT scan significantly improves localization, which decreases the need for neck exploration and decreases the incidence of postoperative complication including bleeding, pain, dysphagia. We are currently evaluating the role of 4D CT is identifying aberrant parathyroid localization, such as mediastinal and retroesophageal locations. This study represents the bench to bedside application of an investigative imaging protocol that has significantly improved the safety and care of our patients.

Metastases can originate from disseminated tumor cells (DTCs), which may be dormant for years before reactivation. In a published report in Nature Communications, February 2015, researchers Julio A. Aguirre-Ghiso, PhD, and Maria Soledad Sosa, PhD of the Icahn School of Medicine at Mount Sinai demonstrated that two existing cancer drugs can turn on a gene that tells tumor cells to remain inactive.

They discovered that the gene NR2F1, when switched on, programs tumor cells to stay dormant. When the gene is switched off, tumor cells divide and multiply as part of normal growth, potentially allowing dormant cells to grow into tumors throughout the body (metastasis). Combining the anticancer drugs azacytidine and retinoic acid significantly increased the activity of active NR2F1 in tumor cells. These patterns were found in mouse models of several cancers, and confirmed in prostate cancer cells from human patients.

Results suggest that NR2F1 is a “master regulator” of tumor cell growth, influencing several genes that determine whether cells remain inactive, or quiescent in medical terms. According to the study, NR2F1 exerts control over long-lasting programs in stem cells in the human embryo, where it directs cells to stop growing and become specialized cells (neurons) for life. This function suggests that NR2F1 may exert a long-lasting effect on tumor cells, keeping them dormant after they have broken off from an original tumor.

“Our results explain why some tumor cells scattered through the body are committed to remaining harmless for years, while others cause active disease.”

Julio A. Aguirre-Ghiso, PhD, Professor of Medicine, Hematology and Medical Oncology, and Endocrinology, added, “In the discovery of this master switch, we found a way to analyze tumor cells before treatment to determine the risk of a cancer recurrence or metastasis.”

“Azacytidine and retinoic acid, the latter a form of vitamin A, prevented tumor cells from rapidly multiplying, restored normal cell function, and activated several tumor suppressor genes that are often turned off in tumors,” said study co-leader Maria Soledad Sosa, PhD, an Assistant Professor in Hematology and Oncology at the Icahn School of Medicine. “We now have strong evidence that combining these well-known drugs may have a profound, long-lasting therapeutic effect.”

The current study, supported by grants from the Samuel Waxman Cancer Research Foundation, National Cancer Institute, National Institute of Environmental Health Sciences, New York State Stem Cell Science program, JRI Foundation and Hirsch/Well-Caulier Trust, Department of Defense and Janssen Research and Development LLC, builds on the research team’s earlier finding that lowering amounts of tumor suppressor genes TGFβ2 and p38 awakened dormant tumor cells, fueling metastatic tumor growth. Azacytidine and retinoic acid restored TGFβ2 expression and p38 activation to drive tumor cell dormancy.

Outcomes and Performance 2015
The Division of Facial Plastic and Reconstructive Surgery

“The Division of Facial Plastic and Reconstructive Surgery continues to draw patients from around the globe, seeking treatment for services ranging from aesthetic enhancements to complex facial nerve and ear reconstruction.”

Dr. Joshua Rosenberg
Facial Plastic and Reconstructive Surgeon

Nasal Surgery

Rhinoplasty is one of the most common plastic surgeries performed in the United States. Mount Sinai’s Division of Facial Plastic & Reconstructive Surgery performs a high volume of nasal surgery for both aesthetic and functional purposes. The Division of Facial Plastic and Reconstructive Surgery encompasses cosmetic and reconstructive treatments of the face, head and neck. From facelift and rhinoplasty to major reconstruction of the face, the Division offers the full range of facial plastic surgical care. Each aspect complements the other: function enhances appearance, while an aesthetic eye reconstruction yields better functional, as well as cosmetic, results. Our physicians provide these services in a caring, safe and comfortable environment. Several key outcomes initiatives are described in more detail below.

Types of Nasal Surgery Performed in 2015

Improved Outcomes after Nasal Surgery

The success of rhinoplasty performed for either aesthetic and/or functional purposes is measured by the objective assessment of pre and post surgical nasal breathing using the validated NOSE (Nasal Obstruction Symptom Evaluation) scale. NOSE scores can stratify the degree of patients’ nasal obstruction ranging from normal nasal breathing (NOSE < 25) to extreme nasal obstruction (NOSE > 75). Our patients’ average NOSE score was 72.1 on presentation and 22.8 at 3 months after surgery. All patients showed improvement in NOSE scores, and the mean surgical improvement was 48.8.


Functional Outcomes after Septorhinoplasty

Outcomes and Performance 2015

The Division of Facial Plastic and Reconstructive Surgery offers the full range of cosmetic and reconstructive surgery

Mount Sinai Health System’s Department of Otolaryngology–Head and Neck Surgery

Dr. Grigoriy Mashkevich, Facial Plastic and Reconstructive Surgeon at New York Eye and Ear Infirmary of Mount Sinai

Fellows Yan Ho observes Dr. William Lawson performing a septorhinoplasty
Rehabilitation of Facial Nerve Paralysis
Facial nerve paralysis represents a severe form of facial disfigurement with potentially devastating social, psychological and functional problems for affected patients. Mount Sinai’s Facial Nerve Paralysis Program involves a multidisciplinary approach, ensuring patients receive all aspects of care in one setting.

Before and after photos of a patient treated for residual effects of Bell’s Palsy. Treatment included cranial nerve 5 to 7 transfer for smile reanimation along with BOTOX injections to improve facial balance.

Decreased Surgeries for Microtia Repair Shortened
Microtia is a well known craniofacial abnormality occurring between 1:6,000 to 1:10,000 live births. Numerous techniques have been described for reconstruction of the absent auricle. Adopting a reconstruction protocol using specific surgical techniques and post-operative care Mount Sinai’s Division of Facial Plastic and Reconstructive Surgery has allowed for decreased numbers of procedures per patient required for auricular reconstruction.

Surgery Required for Microtia Repair

Shortened Hospital Admission after Microtia Repair
The duration of suction drain placement after microtia repair correlates with the length of post-operative admission. By decreasing the duration of suction drain placement the Division of Facial Plastic surgery shortened the length of post operative hospitalization well below National averages.

Length of Hospital Stay after Microtia Repair

Mount Sinai Health System’s Department of Otolaryngology–Head and Neck Surgery
The Leon and Norma Hess Center for Science and Medicine houses clinical care for Head and Neck Institute patients and 180,000 square feet of laboratory space. The Division of Facial Plastic and Reconstructive Surgery is part of the Mount Sinai Health System’s Department of Otolaryngology–Head and Neck Surgery.

Dr. Rosenberg performs a cranial nerve 5 to 7 transfer to correct a patient’s Bell’s palsy.
The Division of Facial Plastic and Reconstructive Surgery

Cleft Lip, Palate & Velopharyngeal Insufficiency Services

The New York Eye & Ear Infirmary of Mount Sinai's Cleft Lip/Palate & Craniofacial Program is a highly specialized, multidisciplinary team co-directed by Facial Plastic Surgeon Dr. Joseph Russo and Pediatric Otolaryngologist Dr. Joseph Bernstein. Under their direction, more than 190 procedures, spanning the full gamut of surgical techniques, were performed both in New York and internationally during outreach missions in 2015. The team tailors each surgery to the patient’s aesthetic and functional deficiencies and offers cutting-edge approaches to comprehensive care, allowing for the highest possible quality of care and shorter hospital stays.

Our evidence-based models of care include:

- Cleft lip & nasal treatment primarily performed in one outpatient surgical procedure, as opposed to the standard 2-3 procedures
- Measuring all velopharyngeal insufficiency (VPI) and cleft palate speech outcomes using all available tools, including aerodynamic measures, nasometry, speech perceptual evaluation, and nasopharyngoscopy with consistent objective improvements
- Monthly conferences assessing all aesthetic and functional results for each individual patient
- Incorporating minimally invasive pharyngeal augmentation surgery to the VPI armamentarium

Cleft Lip Before & After

One year after a single-stage, outpatient repair, the cleft lip and nose are both corrected without any noticeable sign of the prior cleft.

These protocols have resulted in the following outcomes improvements:

- Cleft lip patients average a 24-hour or less length of stay (LOS) versus the national average of 1-4 days
- Cleft palate case LOS average is 30 hours versus the national average of 2 days
- Operating time for VPI surgery using our minimally invasive technique averages 45 minutes, compared to 5-hour cases prior to 2013 with more invasive techniques
- More invasive procedures average 70 minutes, compared to the national average of 140 minutes and LOS of 34 hours versus 3.2 days

The Division of Facial Plastic & Reconstructive Surgery: Research

The Division of Facial Plastic & Reconstructive Surgery, in collaboration with the laboratory of Dr. James C. Iatridis of the Department of Orthopedics, is investigating novel techniques in tissue engineering. The goal is the development of an engineered tissue construct simulating cartilage. Recent research using genipin as a cross-linker in fibrin hydrogels has been shown to improve the mechanical properties and reduces degradation of engineered tissue, but does not yet mimic the properties of native cartilage.

Transmission electron microscopy showing fibrin-genipin polymer cross-linking interrupted with added extracellular matrix.
The Division of Laryngology

“At the Division of Laryngology, we aim to restore voice and swallowing function to normal by way of state-of-the-art medical, surgical and rehabilitation techniques.”

Dr. Peak Woo
Director, Laryngology Residency Program
The Mount Sinai Hospital

Mount Sinai’s Division of Laryngology is one of the busiest in the nation when it comes to the evaluation of patients with swallowing disorders. With 510 modified barium swallow evaluations in 2015, our specialists have the experience and expertise to evaluate and treat a wide range of swallowing disorders. Incoming Chief, Dr. Mark Courey, who joined Mount Sinai in January 2016, is broadening the scope of services offered to enhance patient care. Additionally, a research initiative, led by Cathy Lazarus, PhD, CC-SLP, is harnessing the strength of this volume of visits to improve the treatment of patients with swallowing disorders and to optimize their care and outcomes with an IRB-approved collaborative study. Two other areas of study include the Eugen Grabscheid Voice Center’s clinical research to improve treatment for patients with acquired laryngeal hypersensitivity, particularly World Trade Center responders, and the office KTP laser treatment of vocal fold leukoplakia, discussed in further detail below.

Office KTP Laser Treatment of Vocal Fold Leukoplakia – Disease Control and Voice Outcomes

This is a retrospective review of 45 patients with vocal fold leukoplakia treated by in-office KTP laser to evaluate specific disease outcomes and treatment morbidity. The study shows that in-office treatment of leukoplakia with KTP laser results in adequate long-term disease control with maintenance of vocal quality and minimal morbidity. Patients underwent an average of 2.2 (range: 1-6) in-office KTP treatments with average 12.9 months between treatments. Thirty patients (67%) were managed successfully (control of disease) with in-office KTP treatment alone, thirteen patients (29%) required return to the operating room, and two patients (4%) underwent radiation therapy. Twenty-eight patients (62%) had no evidence of disease at last evaluation.
Mount Sinai Health System’s Department of Otolaryngology–Head and Neck Surgery

The Division of Oral and Maxillofacial Surgery

“At Mount Sinai, we are pioneering the use of haptics-based virtual surgical planning and 3-D printing technology in oral and maxillofacial surgery and measuring patient outcomes to enhance their overall experience and functionality.”

Dr. Daniel Buchbinder
Chief, Division of Oral and Maxillofacial Surgery
Mount Sinai Health System

Our team utilizes cutting edge techniques to improve outcomes and decrease surgical time

The Division of Oral and Maxillofacial Surgery specializes in the comprehensive management of congenital jaw deformities and the resulting functional impairment (malocclusion). Our team utilizes cutting edge, computer based virtual planning techniques (VSP) and CAD-CAM based cutting guides and patient specific implants to improve outcomes and decrease surgical time.

Outcomes Assessment with the use of VSP in Orthognathic Surgery

VSP is a great tool for planning an orthognathic surgical procedure. A comprehensive initial work up is performed on the patient which includes facial photographs (3D), intraoral photographs, facial measurements, midline notations, occlusion class notation, plain films, study models, a bite registration, and a cone beam CT scan. Once all the data is gathered a cephalometric analysis is performed with the patients clinical findings in mind resulting in an individualized problem list and treatment plan for the patient.

The clinical results achieved using this technology have been outstanding. We decided to critically assess our results by comparing the actual amount of maxillary anterior movement achieved in the OR to the predicted VSP measurement derived preoperatively. All movements in orthognathic surgery are three dimensional movements which make complete accuracy of post-operative bone movements somewhat difficult to accomplish. We performed a retrospective analysis of 20 orthognathic cases performed in the last 18 months where a maxillary anterior advancement was planned. The goal was to see if there was a significant discrepancy between the VSP and actual result using a simple linear measurement.

Outcomes and Performance 2015

2014
2015

Orthognathic Surgery Case Volume

Mount Sinai Health System’s Department of Otolaryngology–Head and Neck Surgery

Dr. Vincent Carrao, Chief of the Division of Oral and Maxillofacial Surgery at The Mount Sinai Hospital

Dr. Devin Okay, Director of Prosthodontics, evaluates a TMJ patient
The Division of Oral and Maxillofacial Surgery

The use of virtual surgical planning (VSP) for oral and maxillofacial surgery is becoming a routine part of our treatment planning process. System wide, the oral and maxillofacial surgeons at Mount Sinai utilize VSP for planning of the vast majority of congenital deformity correction cases. Dr. Carrao performs a complex temporal mandible joint reconstruction using a custom joint prosthesis.

Once a plan has been formulated, the cone beam CT is then downloaded into a surgical software to create virtual 3D model of the patient's craniofacial structures. The 3D images can then be manipulated to simulate the planned surgical movements based on the pre-op analysis. After the movements are achieved on the 3D computer rendition, CAD-CAM surgical guides are fabricated using a 3D printer. The guides are used to help ensure the precise repositioning of the osteotomized segments to the desired position during the surgical procedure.

Preoperative and post-operative lateral cephalometric X-rays were utilized to measure the amount of anterior advancement. A perpendicular line to the Sella-Nasion line bisecting the sella landmark was traced on the lateral cephalograms. A linear measurement from the perpendicular line to the A point of the maxilla was measured in the pre-op and post-operative X-rays with the line of measurement being parallel to the palatal plane. The measurements were made to the tenth of a millimeter. All of the cephalometric films are taken with the same machine which incorporates a standardized measuring device on every film. All of the surgical procedures were performed by the same surgeon. Once the maxillary AP distance was measured it was then compared to the VSP prediction.

The results of this analysis revealed a level of accuracy which landed a standard deviation for all of the procedures at 0.27mm from the predicted value, confirming the accuracy of this method of surgical planning.

Outcomes and Performance 2015
Mount Sinai Health System’s Department of Otolaryngology–Head and Neck Surgery
“Cholesteatoma is not ‘one size fits all.’ At the Division of Otolgy and Neurotology, we personalize the operation to each patient’s needs, and almost always achieve this in a single stage.”

Dr. Eric Smouha
Director of Neuro-Otology and the Center for Hearing and Balance at The Mount Sinai Hospital

Among the most common otologic procedures are tympanoplasty and mastoidectomy for the treatment of chronic ear infections, and stapedectomy for the restoration of hearing. Our merger with the Ear Institute at New York Eye and Ear Infirmary of Mount Sinai has led to a pooling of resources and increase in the volume of surgical cases. Additionally, Peter Weber, MD, MBA, has recently joined as the Director of the Ear Institute, which provides audiological, speech-language/listening therapy, educational and social work services for children and adults who are deaf and hard of hearing.

The Ear Institute has gone through a transition period during the past year. As some surgeons moved on in early 2015, total numbers did trend slightly lower. However, Dr. Peter Weber looks forward to significant growth over the next several years. New indications for implantation, the best dedicated pediatric team in the country treating children with hearing loss, a dedicated research arm, and an excellent core of established surgeons and additional new hires will help elevate the New York Eye and Ear Infirmary of Mount Sinai’s hearing program to one of the best in the country.
Complication Avoidance
Spontaneous cerebrospinal fluid (CSF) leak is an uncommon and potentially life-threatening condition that tends to occur in people with high BMI (body mass index). This often occurs in conjunction with herniation of brain tissue into the ear (encephalocele). Untreated, this condition can lead to meningitis. The traditional treatment is a neurosurgical approach, through the cranium, that requires an ICU stay and can have potential complications of stroke and seizure.

At Mount Sinai, we have favored a transmastoid repair, through the ear bone, that has avoided any neurological complications and has a much shorter length of stay in the hospital.

Repair of CSF leak, 2006–15

The Cost-Effective Treatment of Cholesteatoma
Cholesteatoma is an aggressive disease of the middle ear. Our preference at Mount Sinai is to perform a single stage operation for the treatment of this disease, whereas 2-stage surgery is often favored traditionally.

Last year we reported on a group of patients with cholesteatoma treated at Mount Sinai from 2007–2010 who had adequate follow-up. Costs of surgery and outpatient care were calculated based on standard Medicare rates. Our actual costs were compared to the hypothetical costs of planned second stage surgery, the traditional approach, in which an initial operation is done to remove the disease, and a second operation is done 9-18 months later to search for recurrence and rebuild the hearing.

This year, we studied the long term outcomes of our patients with cholesteatoma. We improved our data capture and had a longer duration of follow-up. We assessed 132 ears, with average length of follow-up of 58.7 months. There were 18 cases of recurrent disease (13.6%) detected at an average of 29.3 months post-surgery. The resulting average total cost per patient was $2,120.53. Over the average length of follow-up of 55.6 months, the average annual cost per patient is $457.67.

Recidivism (Recurrence+Residual) Rate for Primary Cholesteatoma Cases

We conclude that single-stage cholesteatoma surgery is a cost-effective method of treating cholesteatoma with excellent outcomes and better value to patients.

Basic Science Research
Vestibulo-ocular reflex (VOR) changes as a function of age. Prior data suggest that the current non-age-stratified adult normative data may not be appropriate when interpreting pediatric or geriatric rotary chair (RC) test result. The purpose of this study was to examine the range of VOR gain on RC testing in normal subjects of various ages.

This was a prospective cross-sectional study of 100 subjects, age > 6 yrs old, without any history of dizziness and hearing loss.

Our study demonstrates VOR gain differences with age, especially in the preadolescent and geriatric group. The over 50 age group had higher VOR gains compared to the 31 to 50 year-old age group (p = 0.0748).

This is the largest age-stratified normative data compilation and the largest range of frequencies studied. The lowest frequency is the most sensitive for Rotary Chair testing to detect age-related VOR changes.
The Division of Pediatric Otolaryngology

“Pediatric Otolaryngology is amidst a new phase of growth and development. We have revitalized our Airway Program and are actively expanding aerodigestive, sleep, cleft and microtia into unparalleled, multidisciplinary centers.”

Dr. Joseph Bernstein
Chief of the Division of Pediatric Otolaryngology
Mount Sinai Health System

The year 2015 was an exciting one for the Division of Pediatric Otolaryngology at the Mount Sinai Health System. At New York Eye and Ear Infirmary (NYEE) of Mount Sinai, we recently opened a new pediatric ambulatory surgery unit to service the more than 3,500 outpatient eye and ear surgeries performed at this single site annually. It enhances the patient experience and enables us to bring the highest level of care and patient satisfaction to our pediatric patients and their families. At this site, we perform the bulk of our surgeries on children, from ear tubes and tonsillectomy to congenital neck masses and cochlear implantation.

For children who have conditions that are not appropriate for outpatient management, our surgeons utilize the incredible inpatient pediatric services available in the Mount Sinai Health System at both Mount Sinai Beth Israel and the Kravis Children’s Hospital at Mount Sinai. It is through the resources of the Mount Sinai Health System as a whole that we have been able to adeptly treat and manage serious conditions from severe obstructive sleep apnea to major airway reconstructions.

Tonsillectomy

Tonsillectomy is the second most common surgery among children, behind only the placement of ear tubes for recurrent middle ear infections.

The pediatric otolaryngologists at NYEE, along with our nursing staff are now skilled in the optimal use of non-narcotic pain medications for young children and in educating families on fluid goals for their child after surgery. This keeps children safe and as comfortable as possible during a difficult recovery. This level of quality care is evidenced by our very low re-admission rate for dehydration after tonsillectomy. Additionally, through the use of technologies and techniques such as coblation and tonsillotomy, our post-operative tonsil bleed rate is also below the national average.

Complication After Tonsillectomy

Tonsillectomy is one of the most common surgeries of childhood and although frequently performed, is not without risk. The two major risks of the surgery are post-operative bleeding, which can be severe, as well as dehydration from inadequate pain control.

Mount Sinai Health System’s Department of Otolaryngology–Head and Neck Surgery

Outcomes and Performance 2015

More than 3,500 children undergo operations at New York Eye and Ear Infirmary’s Pediatric Surgical Unit

Dr Alyssa Hackett, Pediatric Otolaryngologist at New York Eye and Ear Infirmary of Mount Sinai
The Division of Rhinology and Skull Base Surgery

"With the help of a multidisciplinary team and a unified approach to patient care, the Division of Rhinology and Skull Base Surgery continues the Mount Sinai tradition of excellence, embracing the most complex inflammatory and neoplastic cases affecting the sinuses and skull base."

Dr. Satish Govindaraj
Chief of the Division of Rhinology and Skull Base Surgery
Vice Chairman of Clinical Affairs
Mount Sinai Health System

Outcomes and Performance 2015

The Division of Rhinology and Skull Base Surgery specializes in both primary and revision endoscopic sinus surgery

Endoscopic Sinus Surgery Case Volume

Primary and Revision Endoscopic Sinus Surgery – Complications
The Division of Rhinology and Skull Base Surgery at the Mount Sinai Health System is composed of fellowship trained rhinologists who specialize in both primary and revision endoscopic sinus surgery. Each year our surgical volume has experienced steady growth and our complication rate remains low with an absence of major complications and lower post operative major epistaxis rate (defined as requiring post-operative packing placement or surgical control of bleeding).

The Division of Rhinology and Skull Base Surgery specializes in endoscopic sinus surgery, rhinology and skull base surgery.

Dr. Madeleine Solovyov of New York Eye and Ear Infirmary of Mount Sinai specializes in endoscopic sinus surgery, rhinology and skull base surgery.
Division of Rhinology and Skull Base Surgery

As an academic center our institution specializes in performing surgery on patients with serious medical conditions. In 2015, our rhinologists maintained a low complication rate despite ASA status. The Division had no iatrogenic CSF leaks or orbital bleeding and a less than 1% major epistaxis rate as defined as a need for packing placement or operating room control of bleeding. Our ASA 3 group did not have any major complications.

Endoscopic Sinus Surgery Complication Rate for 2015 by American Society of Anesthesiologists (ASA) Physical Status Classification System

Allergy Screening Program
The Division of Rhinology and Skull Base Surgery provides allergy screening for our patients. This program is headed by our Physician’s Assistant, Sabra Baum. Patients are able to obtain same day allergy screening and counseling. Those patients that are identified with allergies are referred to our allergy/immunology department for immunotherapy evaluation if indicated.

The Division of Rhinology and Skull Base Surgery works closely with the Department of Neurosurgery in the management of skull base pathology. Over the last three years, the division has experienced steady growth in endoscopic skull base case volume. The endoscopic approach results in less morbidity and a shorter hospital stay for our patients. The Division, along with Neurosurgery, reported our experience with one day discharge in our pituitary patients. This paper was published in The Journal of Skull Base Surgery in August 2015.

Endoscopic Skull Base Case Volume

Our Division has seen a steady growth in the number of endoscopic skull base cases with a complication rate that remains below 2%. Our length of stay for endoscopic cases remains low and we have noted the number one reason for extended length of stay in these cases has been CSF leaks.

Endoscopic Skull Base Complication Rate

Endoscopic Skull Base Case Volume

Endoscopic Skull Base Complication Rate

Mount Sinai Health System’s Department of Otolaryngology-Head and Neck Surgery
The Division of Sleep Surgery

"Recognizing the difficulties our patients have breathing and sleeping, the team at the Division of Sleep Surgery is at the forefront of the full range of surgical solutions for obstructive sleep apnea, including the use of the Inspire Therapy device for those unable to comply with CPAP."

Dr. Fred Lin
Chief of the Division of Sleep Surgery, Mount Sinai Health System, Director of Sleep Surgery, The Mount Sinai Hospital

Obstructive sleep apnea (OSA) affects more than 18 million Americans, can cause cardiovascular and metabolic disorders, as well as dementia and cancer

The Division of Sleep Surgery specializes in the comprehensive management of obstructive sleep apnea and sleep disordered breathing. Our team specializes in upper airway surgery including nasal surgery, palate surgery, maxillofacial surgery, and surgery of the tongue to improve airway obstruction. We are also one of the few centers in the New York Tri-State area performing the Inspire® Hypoglossal Nerve Stimulator, where we plan to track outcomes and associated benefits and risks of the surgery. We hope to compare this modality of therapy with options traditionally used to treat sleep apnea.

Dr. Boris Chernobilsky, Director of Airway and Sleep Surgery at Mount Sinai Beth Israel, has forged the use of the Inspire Therapy implant device for patients who are not able to comply with CPAP.

Obstructive sleep apnea (OSA) affects more than 18 million Americans, can cause cardiovascular and metabolic disorders, as well as dementia and cancer

The Division of Sleep Surgery has three full time otolaryngologists that are either board certified in sleep medicine or fellowship trained in sleep surgery. We work closely with the departments of pulmonology, endocrinology, and bariatric surgery to offer a multi-disciplinary approach to the treatment of sleep apnea and snoring. We also provide a team based approach within our department with the division of oral maxillofacial surgery to provide dental appliances and maxillomandibular advancement surgery.

Our goal is to improve not only the health, but also the quality of life of sleep apnea patients. We measure all patients pre- and post-treatment with the SNORE-25 quality of life measure, which is a validated quality of life survey. Our results have shown significant gain in improvement of sleep quality and daytime symptoms of night time sleep disturbances post-surgery.

Additionally, in 2015, our sleep surgeons had a less than 1 percent complication rate regardless of OSA severity with no readmissions and no mortalities.
Research and Clinical Trials

**Head and Neck Oncology**
Affiliated with Postoperative Radiation Therapy for Intermediate and High Risk Squamous Cancer of the Head and Neck (SCCHN)
Principal Investigator: Richard Bakadad, MD
This is a non-randomized, two-stage, two-cohort phase I dose-escalation study with the goal of determining the maximum tolerated dose (MTD) of and of alendronate with radiation therapy and alendronate with chemoradiation (chemoradiotherapy) and radiation therapy.

Randomized Phase II Study of Adjacent Concomitant Radiation and Chemotherapy versus Conventional Radiotherapy for Resected High-Risk Malignant Salivary Gland Tumors
Principal Investigator: Richard Bakadad, MD
This is a randomized study, conducted to determine the feasibility of concomitant chemotherapy and radiation therapy for patients with resected malignant salivary gland tumors, comparing the outcomes to those of patients treated with standard single modality treatment.

Transoral Robotic Surgery (TORS) vs. Non-Robotic Treatment for Oropharyngeal Cancer: A Retrospective and Prospective Multi-Institutional Comparative Study
Principal Investigator: Eric Gordon, MD
This study evaluates the outcomes of two treatment methods: TORS and non-surgical treatment for oropharyngeal squamous cell carcinoma.

Integrated PET/IMaging After Primary Therapy of Head & Neck Malignancies
Principal Investigator: Lale Kostakoglu, MD
This study assesses the diagnostic performance of PET/CT and FDG PET/CT in sampling of locally advanced and neck cancer patients (ADAXIS) Window of Opportunity Trial of Neoadjuvant ADXS 1-011
Principal Investigator: Brett Miles, DDS, MD, FACR
This is a non-randomized, phase II feasibility study aimed at establishing feasibility of neoadjuvant treatment for oropharyngeal squamous cell carcinoma.

Sinus Robotic Surgery (SRS) in HPV-Positive Oropharyngeal SCCa
Principal Investigator: Brett Miles, DDS, MD, FACR
This non-randomized phase II feasibility clinical trial aims to establish recurrence rates, site of recurrence, survival quality of life and outcomes for early-stage HPV-positive oropharyngeal SCCa treated with upfront surgery.

**Phase III Trial of Pembrolizumab (MK-3475) in First Line Treatment of Metastatic Melanoma**
Principal Investigator: Eric Gordon, MD
This phase III trial is to accrue data regarding treatment plans and outcomes in the setting of melanoma and other solid organ malignancies.

**Role of HPV in Local Wound Care of Donor Sites After Soft Tissue Flap Grafting**
Principal Investigator: Joshua Polotsky, MD
This randomized study aims to assess the role of HPV in wound healing and to evaluate potential treatments for HPV-positive wounds.

**Clinical Trials**

**Comprehensive Tobacco Use Treatment Program**
Principal Investigator: Brett Miles, DDS, MD, FACS
This study assesses the effectiveness of a comprehensive tobacco use treatment program.

**Microtia Reconstruction Models**
Principal Investigator: Grigoriy Mashkevich, MD
This is a head-to-head prospective comparison of standard autologous cartilage reconstruction versus diced cartilage in a bioadhesive allograft template in mice using computer simulation software.

**Microtia Reconstruction**
Principal Investigator: Grigoriy Mashkevich, MD
This study is designed to evaluate the outcomes of microtia reconstruction using a bioadhesive allograft template.

**Cost Effectiveness in Cholesteatoma Treatment**
Principal Investigators: Christopher J. Linstrom, MD, and Matthew Likhterov, MD
This study evaluates the cost-effectiveness of different treatment modalities in patients with cholesteatoma.

**Haptic Assisted Surgical Planning Study**
Principal Investigator: Daniel Buchbinder, DMD, MD
This study assesses the feasibility of using a haptic system for surgical planning of fibula reconstruction.

**Costs of Single-Stage Surgery for Cholesteatoma to Traditional Treatment Modalities**
Principal Investigator: Richard Bakadad, MD
This study compares the costs of single-stage surgery for cholesteatoma to traditional treatment modalities.

**Costs of Single-Stage Surgery for Cholesteatoma to Traditional Treatment Modalities**
Principal Investigator: Richard Bakadad, MD
This study analyzes the costs of single-stage surgery for cholesteatoma compared to traditional treatment modalities.

**Oral and Maxillofacial Surgery**

**Haptic Assisted Surgical Planning Study**
Principal Investigator: Daniel Buchbinder, DMD, MD
This study assesses the feasibility of using a haptic system for surgical planning of fibula reconstruction.

**Cost Effectiveness in Cholesteatoma Treatment**
Principal Investigators: Christopher J. Linstrom, MD, and Matthew Likhterov, MD
This study evaluates the cost-effectiveness of different treatment modalities in patients with cholesteatoma.

**Haptic Assisted Surgical Planning**
Principal Investigator: Daniel Buchbinder, DMD, MD
This study assesses the feasibility of using a haptic system for surgical planning of fibula reconstruction.

**Costs of Single-Stage Surgery for Cholesteatoma to Traditional Treatment Modalities**
Principal Investigator: Richard Bakadad, MD
This study compares the costs of single-stage surgery for cholesteatoma to traditional treatment modalities.

**Cost Effectiveness in Cholesteatoma Treatment**
Principal Investigators: Christopher J. Linstrom, MD, and Matthew Likhterov, MD
This study evaluates the cost-effectiveness of different treatment modalities in patients with cholesteatoma.

**Haptic Assisted Surgical Planning Study**
Principal Investigator: Daniel Buchbinder, DMD, MD
This study assesses the feasibility of using a haptic system for surgical planning of fibula reconstruction.

**Cost Effectiveness in Cholesteatoma Treatment**
Principal Investigators: Christopher J. Linstrom, MD, and Matthew Likhterov, MD
This study evaluates the cost-effectiveness of different treatment modalities in patients with cholesteatoma.

**Haptic Assisted Surgical Planning**
Principal Investigator: Daniel Buchbinder, DMD, MD
This study assesses the feasibility of using a haptic system for surgical planning of fibula reconstruction.

**Costs of Single-Stage Surgery for Cholesteatoma to Traditional Treatment Modalities**
Principal Investigator: Richard Bakadad, MD
This study compares the costs of single-stage surgery for cholesteatoma to traditional treatment modalities.

**Cost Effectiveness in Cholesteatoma Treatment**
Principal Investigators: Christopher J. Linstrom, MD, and Matthew Likhterov, MD
This study evaluates the cost-effectiveness of different treatment modalities in patients with cholesteatoma.

**Haptic Assisted Surgical Planning Study**
Principal Investigator: Daniel Buchbinder, DMD, MD
This study assesses the feasibility of using a haptic system for surgical planning of fibula reconstruction.

**Cost Effectiveness in Cholesteatoma Treatment**
Principal Investigators: Christopher J. Linstrom, MD, and Matthew Likhterov, MD
This study evaluates the cost-effectiveness of different treatment modalities in patients with cholesteatoma.

**Haptic Assisted Surgical Planning**
Principal Investigator: Daniel Buchbinder, DMD, MD
This study assesses the feasibility of using a haptic system for surgical planning of fibula reconstruction.

**Costs of Single-Stage Surgery for Cholesteatoma to Traditional Treatment Modalities**
Principal Investigator: Richard Bakadad, MD
This study compares the costs of single-stage surgery for cholesteatoma to traditional treatment modalities.

**Cost Effectiveness in Cholesteatoma Treatment**
Principal Investigators: Christopher J. Linstrom, MD, and Matthew Likhterov, MD
This study evaluates the cost-effectiveness of different treatment modalities in patients with cholesteatoma.

**Haptic Assisted Surgical Planning Study**
Principal Investigator: Daniel Buchbinder, DMD, MD
This study assesses the feasibility of using a haptic system for surgical planning of fibula reconstruction.

**Cost Effectiveness in Cholesteatoma Treatment**
Principal Investigators: Christopher J. Linstrom, MD, and Matthew Likhterov, MD
This study evaluates the cost-effectiveness of different treatment modalities in patients with cholesteatoma.

**Haptic Assisted Surgical Planning**
Principal Investigator: Daniel Buchbinder, DMD, MD
This study assesses the feasibility of using a haptic system for surgical planning of fibula reconstruction.

**Costs of Single-Stage Surgery for Cholesteatoma to Traditional Treatment Modalities**
Principal Investigator: Richard Bakadad, MD
This study compares the costs of single-stage surgery for cholesteatoma to traditional treatment modalities.

**Cost Effectiveness in Cholesteatoma Treatment**
Principal Investigators: Christopher J. Linstrom, MD, and Matthew Likhterov, MD
This study evaluates the cost-effectiveness of different treatment modalities in patients with cholesteatoma.
Research and Clinical Trials

Midline Debridement Syndrome: a Novel Therapy
Principal Investigator: Eric Smouha, MD, with Mingda Bai
Project Title: Midline Debridement Syndrome: a Novel Therapy
This is a clinical trial of intranasal instillation of hypertonic saline in order to assist in debridement of necrotic tissue in children with craniosynostosis.
Sponsor: Boston Children's Hospital

Malignant External Otitis: Changing Clinical Behavior
Principal Investigator: Eric Smouha, MD, with Daniel Calvin and Enrique Perez
This retrospective chart review demonstrates the emerging trend of treatment taking using conventional antibiotic regimens.
Sponsor: Boston Children's Hospital

Microendoscope to Identify Cholesteroloses of the Middle Ear: a Multicenter Study
Principal Investigator: Eric Smouha, MD
Cholesterolosis continues to have a high rate of recurrence after adequate treatment. This is a clinical trial of intranasal instillation of a novel medication in order to assist in complete resolution of disease at surgery.
Sponsor: Boston Children's Hospital

Treatment of Spontaneous CSF Leaks/Encephalocoele: Preference for Transantral Approach
Principal Investigator: Eric Smouha, MD, with Enrique Perez and Daniel Calvin
This is a retrospective chart review of cases of spontaneous CSF leaks that were managed by a transantral approach, demonstrating that this approach has high rate of success and very low morbidity in high-risk patient population.
Sponsor: Boston Children's Hospital

Pediatrics
Characterizing the Nasal Airway in Syndromic Craniosynostosis
Principal Investigator: Satish Govindaraj
This study examines the effects of a hypotensive anesthetic with a comparison group. The study is examining the effects of a hypotensive anesthetic with a comparison group.
Sponsor: Children's Hearing Institute

Craniosynostosis
Characterizing the Nasal Airway in Syndromic Craniosynostosis
Principal Investigator: Satish Govindaraj
This study examines the effects of a hypotensive anesthetic with a comparison group. The study is examining the effects of a hypotensive anesthetic with a comparison group.
Sponsor: Children's Hearing Institute

Chronic Rhinosinusitis with Nasal Polyps
Principal Investigator: Alfred Iloreta
This multi-institutional clinical trial with Intersect ENT is currently evaluating the efficacy of the steroid-releasing implants in the treatment of chronic rhinosinusitis with nasal polyps.
Sponsor: Intersect ENT

Malignant External Otitis: Changing Clinical Behavior
Principal Investigator: Eric Smouha, MD, with Daniel Calvin and Enrique Perez
This retrospective chart review demonstrates the emerging trend of treatment taking using conventional antibiotic regimens.
Sponsor: Boston Children's Hospital

Optical Imaging with a High Resolution Optical Modality that Ensures Complete Removal of Disease at Surgery
Principal Investigator: Satish Govindaraj
This study uses the cadaver model to examine the distribution of the endoscopic approach.
Sponsor: Boston Children's Hospital

This study examines the effects of a hypotensive anesthetic with a comparison group. The study is examining the effects of a hypotensive anesthetic with a comparison group.
Sponsor: Children's Hearing Institute

The study examines the effects of a hypotensive anesthetic with a comparison group. The study is examining the effects of a hypotensive anesthetic with a comparison group.
Sponsor: Children's Hearing Institute

Mal de Debarquement Syndrome: a Novel Therapy
Principal Investigator: Arjun Parasher, MD
This is a clinical trial of a new treatment modality for a very low morbidity in high-risk patient population.
Sponsor: Boston Children's Hospital

Resection and Endonasal Endoscopy
Principal Investigator: Satish Govindaraj
This study examines the effects of a hypotensive anesthetic with a comparison group. The study is examining the effects of a hypotensive anesthetic with a comparison group.
Sponsor: Children's Hearing Institute

Middle Ear
Optical Imaging with a High Resolution Optical Modality that Ensures Complete Removal of Disease at Surgery
Principal Investigator: Satish Govindaraj
This study uses the cadaver model to examine the distribution of the endoscopic approach.
Sponsor: Boston Children's Hospital

This study examines the effects of a hypotensive anesthetic with a comparison group. The study is examining the effects of a hypotensive anesthetic with a comparison group.
Sponsor: Children's Hearing Institute

Malignant External Otitis: Changing Clinical Behavior
Principal Investigator: Eric Smouha, MD, with Daniel Calvin and Enrique Perez
This retrospective chart review demonstrates the emerging trend of treatment taking using conventional antibiotic regimens.
Sponsor: Boston Children's Hospital

Craniosynostosis
Characterizing the Nasal Airway in Syndromic Craniosynostosis
Principal Investigator: Satish Govindaraj
This study examines the effects of a hypotensive anesthetic with a comparison group. The study is examining the effects of a hypotensive anesthetic with a comparison group.
Sponsor: Children's Hearing Institute

Craniosynostosis
Characterizing the Nasal Airway in Syndromic Craniosynostosis
Principal Investigator: Satish Govindaraj
This study examines the effects of a hypotensive anesthetic with a comparison group. The study is examining the effects of a hypotensive anesthetic with a comparison group.
Sponsor: Children's Hearing Institute

Craniosynostosis
Characterizing the Nasal Airway in Syndromic Craniosynostosis
Principal Investigator: Satish Govindaraj
This study examines the effects of a hypotensive anesthetic with a comparison group. The study is examining the effects of a hypotensive anesthetic with a comparison group.
Sponsor: Children's Hearing Institute

Malignant External Otitis: Changing Clinical Behavior
Principal Investigator: Eric Smouha, MD, with Daniel Calvin and Enrique Perez
This retrospective chart review demonstrates the emerging trend of treatment taking using conventional antibiotic regimens.
Sponsor: Boston Children's Hospital

Rhinology and Skull Base Surgery

Malignant External Otitis: Changing Clinical Behavior
Principal Investigator: Eric Smouha, MD, with Daniel Calvin and Enrique Perez
This retrospective chart review demonstrates the emerging trend of treatment taking using conventional antibiotic regimens.
Sponsor: Boston Children's Hospital

Craniosynostosis
Characterizing the Nasal Airway in Syndromic Craniosynostosis
Principal Investigator: Satish Govindaraj
This study examines the effects of a hypotensive anesthetic with a comparison group. The study is examining the effects of a hypotensive anesthetic with a comparison group.
Sponsor: Children's Hearing Institute

Malignant External Otitis: Changing Clinical Behavior
Principal Investigator: Eric Smouha, MD, with Daniel Calvin and Enrique Perez
This retrospective chart review demonstrates the emerging trend of treatment taking using conventional antibiotic regimens.
Sponsor: Boston Children's Hospital

Craniosynostosis
Characterizing the Nasal Airway in Syndromic Craniosynostosis
Principal Investigator: Satish Govindaraj
This study examines the effects of a hypotensive anesthetic with a comparison group. The study is examining the effects of a hypotensive anesthetic with a comparison group.
Sponsor: Children's Hearing Institute

Craniosynostosis
Characterizing the Nasal Airway in Syndromic Craniosynostosis
Principal Investigator: Satish Govindaraj
This study examines the effects of a hypotensive anesthetic with a comparison group. The study is examining the effects of a hypotensive anesthetic with a comparison group.
Sponsor: Children's Hearing Institute

Craniosynostosis
Characterizing the Nasal Airway in Syndromic Craniosynostosis
Principal Investigator: Satish Govindaraj
This study examines the effects of a hypotensive anesthetic with a comparison group. The study is examining the effects of a hypotensive anesthetic with a comparison group.
Sponsor: Children's Hearing Institute

Malignant External Otitis: Changing Clinical Behavior
Principal Investigator: Eric Smouha, MD, with Daniel Calvin and Enrique Perez
This retrospective chart review demonstrates the emerging trend of treatment taking using conventional antibiotic regimens.
Sponsor: Boston Children's Hospital

Craniosynostosis
Characterizing the Nasal Airway in Syndromic Craniosynostosis
Principal Investigator: Satish Govindaraj
This study examines the effects of a hypotensive anesthetic with a comparison group. The study is examining the effects of a hypotensive anesthetic with a comparison group.
Sponsor: Children's Hearing Institute

Craniosynostosis
Characterizing the Nasal Airway in Syndromic Craniosynostosis
Principal Investigator: Satish Govindaraj
This study examines the effects of a hypotensive anesthetic with a comparison group. The study is examining the effects of a hypotensive anesthetic with a comparison group.
Sponsor: Children's Hearing Institute

Craniosynostosis
Characterizing the Nasal Airway in Syndromic Craniosynostosis
Principal Investigator: Satish Govindaraj
This study examines the effects of a hypotensive anesthetic with a comparison group. The study is examining the effects of a hypotensive anesthetic with a comparison group.
Sponsor: Children's Hearing Institute

Craniosynostosis
Characterizing the Nasal Airway in Syndromic Craniosynostosis
Principal Investigator: Satish Govindaraj
This study examines the effects of a hypotensive anesthetic with a comparison group. The study is examining the effects of a hypotensive anesthetic with a comparison group.
Sponsor: Children's Hearing Institute

Craniosynostosis
Characterizing the Nasal Airway in Syndromic Craniosynostosis
Principal Investigator: Satish Govindaraj
This study examines the effects of a hypotensive anesthetic with a comparison group. The study is examining the effects of a hypotensive anesthetic with a comparison group.
Sponsor: Children's Hearing Institute

Craniosynostosis
Characterizing the Nasal Airway in Syndromic Craniosynostosis
Principal Investigator: Satish Govindaraj
This study examines the effects of a hypotensive anesthetic with a comparison group. The study is examining the effects of a hypotensive anesthetic with a comparison group.
Sponsor: Children's Hearing Institute

Craniosynostosis
Characterizing the Nasal Airway in Syndromic Craniosynostosis
Principal Investigator: Satish Govindaraj
This study examines the effects of a hypotensive anesthetic with a comparison group. The study is examining the effects of a hypotensive anesthetic with a comparison group.
Sponsor: Children's Hearing Institute

Craniosynostosis
Characterizing the Nasal Airway in Syndromic Craniosynostosis
Principal Investigator: Satish Govindaraj
This study examines the effects of a hypotensive anesthetic with a comparison group. The study is examining the effects of a hypotensive anesthetic with a comparison group.
Sponsor: Children's Hearing Institute

Craniosynostosis
Characterizing the Nasal Airway in Syndromic Craniosynostosis
Principal Investigator: Satish Govindaraj
This study examines the effects of a hypotensive anesthetic with a comparison group. The study is examining the effects of a hypotensive anesthetic with a comparison group.
Sponsor: Children's Hearing Institute
Head and Neck Oncology


The laryngoscope is a peer-reviewed medical journal published by Lippincott Williams & Wilkins.

For more information, visit www.laryngoscope.com.

Outcome and Performance

Mount Sinai Health System's Department of Otolaryngology-Head & Neck Surgery

Head and Neck Oncology


The laryngoscope is a peer-reviewed medical journal published by Lippincott Williams & Wilkins.

For more information, visit www.laryngoscope.com.

Outcome and Performance

Mount Sinai Health System's Department of Otolaryngology-Head & Neck Surgery

Head and Neck Oncology


The laryngoscope is a peer-reviewed medical journal published by Lippincott Williams & Wilkins.

For more information, visit www.laryngoscope.com.

Outcome and Performance

Mount Sinai Health System's Department of Otolaryngology-Head & Neck Surgery

Head and Neck Oncology


Faculty and Clinical Specialists

Mount Sinai Health System’s Department of Otolaryngology–Head and Neck Surgery

Allergy
Suhas Patel, MD

Facial Plastics
Matthew Hirsch, MD
William Lawson, MD, DDS
Grigory Machatschki, MD
Alexander Ovchinsky, MD
Joshua Rosenberg, MD
Joseph Rosso, MD

General ENT
Bart Castellano, MD
David Phillips Colang, MD
Claude Dougie, MD
Benjamin Makin, MD
Anthony Reino, MD
Benjamin Tweel, MD

Head and Neck
Raymond Chai, MD
Eric Genden, MD
Ilya Lichterov, MD
Brett Miles, MD, DDS
Stimson Schantz, MD
Edward Shin, MD
Marita Tang, MD
Mark Urken, MD
Mike Yao, MD
HeLEN Yoo-Bowne, MD

Laryngology
Mark Courey, MD
Pewl Woo, MD

Oral and Maxillofacial Surgery/Dentistry
Brian Bovino, DDS
Daniel Buchbinder, DMD, MD
Vincent Carrao, DDS, MD
Devlin Okay, DDS
Alan Schweitzer, DDS
Michael Turner, DDS, MD
David Valauri, DDS
Joshua Verona, DDS

Otology
Ronald Hoffman, MD
Christopher Linstrom, MD
Eric Smouha, MD
Peter Weber, MD

Pediatrics
Joseph Bernstein, MD
Alyssa Hatchett, MD
Michael Rothschild, MD

Research
Julio Aguirre-Olhalo, PhD
Cathy Lazarus, PhD
Marshall Posner, MD
Kristina Simonovyan, MD, PhD

Rhinology
Anthony Del Signore, MD
Satish Gowindaraj, MD
Alfred Kotre, MD
Madeleine Schaberg, MD

Sleep Surgery
Boris Chernobalsky, MD
Fred Lin, MD
Gennady Ukrainsky, MD

Health System Chairman Dr. Eric Genden presented, “HPV Oral Cancer: What Practicing Clinicians Need to Know” at the 2015 AAO-HNSF annual meeting

The Department welcomes Dr. Mark Courey, Vice Chair of Quality and Chief of the Division of Laryngology, who joined Mount Sinai in January 2016

49 Faculty and Clinical Specialists

Outcomes and Performance 2015

Mount Sinai Health System’s Department of Otolaryngology–Head and Neck Surgery

Department of Otolaryngology – Head and Neck Surgery Faculty

49

48
Mount Sinai Health System's Department of Otolaryngology–Head and Neck Surgery

Clinical Specialists

Audiologists
Stella Agapakis, AuD, CCC-A
Meghan Brady, AuD, CCC-A
Sandra Delapenha, MA, CCC-A
Karla Fernandez, AuD, CCC-A
Jessica Gailaitis, AuD, CCC-A
Nancy Gilbert, AuD, CCC-A – add
Lisa Golden, MPH, CCC-A
Melissa Harawitz, AuD, CCC-A
Jennifer Jones, AuD, CCC-A
Randy Judson, AuD, CCC-A, F-AAA
Elena Kagan, AuD, CCC-A
Lauren Kaplan, AuD, CCC-A
Sharon Kupfer, AuD, CCC-A
Tatyana Kennedy, AuD, CCC-A
Megun Kilminster, MS, CCC-A
Jayne Levine, AuD, CCC-A
Melissa Magnolia, AuD, CCC-A
Patricia Mazzulli, AuD, CCC-A
Tracey Moskalik, AuD, CCC-A
Sahnia Musawar, AuD, CCC-A
Bess Nagler, AuD, CCC-A
Keri O’Connor, AuD, CCC-A
Shally Ozdamar, AuD, CCC-A
Maryana Paravizozykova, AuD, CCC-A
Derick Petti, AuD, CCC-A
Katherine Scigliano, AuD, CCC-A
Karen Siegel, AuD, CCC-A
Nicole Stilman, PhD, CCC-A
Stephanie Tahaqad, AuD, CCC-A
Rendi Topper, AuD, CCC-A
Salma Vafaie, AuD, CCC-A
Nora Yang-Molina, AuD, CCC-A

Speech Language Pathologists
Erih Bedrich, MA, CCC-SLP
Denise Cruz, MS, CCC-SLP
Lisa Erfchiller, CCC-SLP
Cindy Ganz, MS, CCC-SLP
Leanne Goldberg, MS, CCC-SLP
Karen Keung, MS, CCC-SLP
Tamar Kitz, MS, CCC-SLP
Cathy Luizinis, PhD, CCC-SLP
Veronique Macdonald, MS, CCC-SLP
Jessica McGonigley, MS, CCC-SLP
Daniel McCabe, DMA, CCC-SLP
Elizabeth Roche, MS, CCC-SLP
Sarah Stitesman, MS, CCC-SLP
Karen Stolmich, CCC-SLP
Devin Zuller, MS, CCC-SLP

Vestibular Therapists
Bryan Hujak, DPT
Jennifer Kelly, DPT
Laura Lee-Beeri, DPT
Joanne Zaino, DPT

Physician Assistants
Sabia Baum, RPA-C
Kd Ling Choo, RPA-C
Katrina De Los Reyes, RPA-C
Lyudmila Milman, RPA-C
Angelia Marshall-Figueroa, RPA-C
Tanya Sharrett, RPA-C
Anna Trub, RPA-C
Mia Kuen Xiu, RPA-C

Lyudmila Milman, RPA-C, checks up on patient, Harvey, after surgery

Leanne Goldberg, MS, CCC-SLP, with a dysphasia patient

Mount Sinai Health System at a Glance
### Practice Locations

#### MOUNT SINAI
- **The Mount Sinai Hospital**
  - 530 East 68th Street, 8th floor
  - New York, NY 10021
  - 212-241-9410
- **Mount Sinai Doctors**
  - East 55th Street
  - 234 E 55th Street, 4th floor
  - New York, NY 10022
  - 212-241-9410
- **Mount Sinai Otolaryngology—Staten Island**
  - 2001 Richmond Road, Suite 1C
  - Staten Island, NY 10306
  - 718-425-1273
- **Mount Sinai North Shore Medical Group**
  - 325 Park Avenue
  - Huntington, NY 11743
  - 212-241-9410
- **Elmhurst Hospital Center Otolaryngology**
  - 79-01 Broadway – H2-69
  - Elmhurst, NY 11373
  - 718-333-5120
- **The Queens Hospital Center Otolaryngology**
  - 82-68 164th Street
  - Jamaica, NY 11432
  - 718-334-3392
- **St. Barnabas Hospital**
  - 4422 3rd Avenue
  - New York, NY 10467
  - 718-960-9000

#### MOUNT SINAI BETH ISRAEL
- **Mount Sinai Beth Israel—Phillips Ambulatory Care Center (PACC)**
  - 10 Union Square East
  - New York, NY 10003
  - 212-844-8450
- **Mount Sinai Beth Israel—Westchester**
  - Head, Neck and Thyroid Institute
  - 244 Westchester Avenue
  - Suite 405
  - White Plains, NY 10603
  - 212-844-8775
- **New York Eye and Ear Infirmary of Mount Sinai**
  - 310 E 14th Street
  - New York, NY 10003
  - 212-979-4700
  - Physician Referrals: 212-979-4472
- **Mount Sinai Doctors**
  - Columbus Circle
  - 200 W 57th Street, Suite 1410
  - New York, NY 10019
  - 212-966-3901
- **Mount Sinai Doctors**
  - Upper East Side
  - 1430 2nd Avenue
  - New York, NY 10028
  - 212-335-2038

#### NEW YORK EYE AND EAR INFIRMARY OF MOUNT SINAI
- **New York Eye and Ear Infirmary of Mount Sinai**
  - 310 E 14th Street
  - New York, NY 10003
  - 212-979-4000
  - Physician Referrals: 212-979-4472
- **Mount Sinai Doctors**
  - Bay Ridge
  - 9030 5th Avenue
  - Brooklyn, NY 11209
  - 718-951-9007
- **Mount Sinai Doctors**
  - Sheepshead Bay
  - 2560 Ocean Avenue, 2nd Floor
  - Brooklyn, NY 11229
  - 718-646-1234
- **Mount Sinai Doctors**
  - Williamsburg
  - 108-12 72nd Avenue
  - Forest Hills, NY 11364
  - 718-333-5120
- **Mount Sinai Doctors**
  - Bayside
  - 45-44 Francis Lewis Blvd., 2nd Fl
  - Bayside, NY 11361
  - 718-333-5120
- **Mount Sinai Doctors**
  - Forest Hills
  - 108-12 72nd Avenue
  - Forest Hills, NY 11375
  - 718-979-4000
- **Mount Sinai Doctors**
  - White Plains
  - 244 Westchester Avenue, #215
  - White Plains, NY 10604
  - 914-297-9700
- **Mount Sinai Doctors**
  - Short Hills
  - 1046 S Orange Avenue
  - Short Hills, NJ 07078
  - 973-379-0101

#### WEBSITE SHORTCUTS
- The Department of Otolaryngology—Head and Neck Surgery
  - www.mountsinai.org/ent
- www.nyee.edu/ent
- www.bethisraelny.org
- Head and Neck Institute
  - www.mountsinai.org/headandneck
- www.headandneckthyroid.com
- Center for Hearing and Balance
  - www.mountsinai.org/hearing
- Center for Minimally Invasive Robotic Surgery
  - www.headandneckrobotics.com
- Center for Thyroid and Parathyroid Diseases
  - www.mountsinai.org/thyroid
- Eugen Grabaseh MD Voice Center
  - www.mountsinai.org/voicecenter
- Facial Plastics and Reconstructive Surgery
  - www.mountsinai.org/facialplastics
- Rhinology and Sinus Surgery
  - www.mountsinai.org/sinus
- Skull Base Surgery Center
  - www.mountsinai.org/skullbase