United Hospitals.org/ENT

• DEPARTMENT OF OTOLARYNGOLOGY – HEAD & NECK SURGERY

| 216-844-6000 |

The UH Ear, Nose & Throat Institute at UH Case Medical Center has nine Centers of Excellence that showcase its national prominence in the field of otolaryngology and head and neck surgery:

CENTERS OF EXCELLENCE

• Audiology & Cochlear Implant Center
• Community Ear, Nose & Throat Center
• Ear, Hearing & Balance Center
• Head & Neck Cancer Center
• Nose, Sinus & Allergy Center
• Pediatric Ear, Nose & Throat Center
• Skull Base Diseases Center
• Translational & Basic Science Research Center
• Voice & Swallowing Center

To read our latest issue of Innovations in Otolaryngology – Head & Neck Surgery, please visit UHhospitals.org/ENTInnovations.

Visit UHhospitals.org/CME for the latest in live, webinar and on-demand Continuing Medical Education events.
Patients undergoing complex head and neck free-tissue transfers often recover in a general intensive care unit. However, physicians affiliated with UH Ear, Nose & Throat Institute hypothesized that caring for these patients on a dedicated otocare unit, or “mini-ICU,” could be a safe alternative, while providing additional benefits for both patients and the hospital.

OPTIMIZING HEAD AND NECK POSTOPERATIVE CARE PATHS

Mini-ICU Brings Cost Savings and Patient Benefits

To test the idea, the UH Head and Neck Surgery team conducted a retrospective study at the specialized otocare unit at UH Seidman Cancer Center, which opened in 2012. The study was led by UH otolaryngologist Chad Zender, MD, FACS, and Assistant Professor of Otolaryngology – Head & Neck Surgery at Case Western Reserve University School of Medicine. Also participating were Rod Rezaee, MD, FACS, Director of Microvascular Head and Neck Reconstructive Surgery at UH and Assistant Professor of Otolaryngology – Head & Neck Surgery at School of Medicine, and Pierre Lavertu, MD, Director of Head and Neck Surgery and Oncology at UH and Professor of Otolaryngology – Head & Neck Surgery at School of Medicine, among others.

The team collected data on 200 tissue reconstruction patients over two and a half years.

Results of the study showed that there was no statistical difference in length of stay, complication rate or readmissions between ICU and non-ICU care paths. However, using the dedicated unit yielded significant direct cost savings for the hospital – greater than $125,000 annually – while improving patient comfort and satisfaction. These results were presented at the 5th World Conference of the International Federation of Head and Neck Oncologic Societies and the 2014 American Head and Neck Society Meeting.

Head and neck free-flap transfer patients require close monitoring in the days following microvascular surgery. If problems arise, such as a thrombosis developing in vessels transplanted from the forearm to the tongue, it is essential to address them as quickly as possible to increase the chances of salvaging the graft. Additionally, free-flap transfer patients are typically older, with comorbidities. Although grafts are usually successful, patients require more acute postoperative nursing care than they would receive on a general floor.

“These patients require continual specialized monitoring checking the perfusion of grafts and frequent care of breathing tubes, but they’re not necessarily medically unstable,” says Dr. Rezaee. “If we’re keeping these patients in an ICU designed for minute-to-minute, life-or-death situations, we’re occupying resources that could be used for truly critically ill patients. That increases costs for the hospital and for health care overall. Our patients are not critical, they just need a higher level of specialty nursing care.”

The UH research team also believed that providing care on a specialized unit could improve patient outcomes.

“In a traditional ICU, free-tissue-transfer patients often remain intubated or ventilated for several days,” says Dr. Zender. “Yet we know that early ambulation often leads to better outcomes. One goal of the specialty unit was to get patients awake on postoperative day zero and ambulating by postoperative day two. In addition, because the otocare unit is not a general ICU, we believed it would provide a more stable and comfortable environment for patients and their families.”

The specialty otocare unit at UH includes 10 beds, supported by specific nursing ratios, new care path protocols coordination and education of staff. Although other centers have used specialty units for microsurgery patients, UH physicians were among the first to perform a rigorous cohort study of this care path.

In the year before the otocare unit opened, 29 percent of ENT patients utilized the ICU. In the year following, ICU utilization for ENT patients dropped substantially, to about 8 percent. These improvements translated to significant direct cost and resource savings – with shorter average length of stay and no increase in complication rates or rehospitalizations.

“The results speak for themselves,” says Dr. Zender. “When looking at ICU utilization, bed availability, costs and the ultimate goal of improving patient care, I believe that more hospitals will follow suit in the coming years.”
FIRST IN OHIO TO OFFER FDA-APPROVED INSPIRE™

UH Case Medical Center is the first in Ohio and among the first in the United States to begin offering a new FDA-approved treatment for obstructive sleep apnea (OSA).

The first-of-its-kind, implantable electronic stimulation device, called Inspire™ Upper Airway Stimulation (UAS) therapy, is designed to deliver mild stimulation to the main nerve of the tongue (hypoglossal nerve) on each breathing cycle during sleep. The stimulation is intended to restore tone to key airway muscles and prevent airway collapse.

UH Case Medical Center was one of the clinical sites for the Stimulation Therapy for Apnea Reduction (the STAR trial) study and the findings were published in the New England Journal of Medicine (Jan. 9, 2014). Kingman Strohl, MD, pulmonologist, UH Case Medical Center; Professor of Medicine, Physiology & Biophysics, and General Medical Sciences at Case Western Reserve University School of Medicine; and Director of the Sleep Disorders Program at the Louis Stokes Cleveland VA Medical Center, and Jonathan Baskin, MD, Chief, Otolaryngology – Head & Neck Surgery, Facial Plastic and Reconstructive Surgery, Louis Stokes Cleveland VA Medical Center and an attending physician at UH Case Medical Center were the site principal investigators for the study and co-authors of the NEJM article. The STAR trial results showed that Inspire therapy reduced apnea events by 68 percent and significantly improved key quality of life measures. Inspire therapy is offered in collaboration with specially trained surgeon, Diana Ponsky, MD, of UH Ear, Nose & Throat Institute; and Assistant Professor of Otolaryngology, Case Western Reserve University School of Medicine.

OFFICE-BASED VOICE SURGERY PROGRAM

Historically, patients with laryngeal or voice disorders affecting speech, swallowing and breathing had most procedures in the operating room. Today, patients can receive a broad spectrum of diagnostic and therapeutic interventions in an office setting through the Voice & Swallowing Center at the UH Ear, Nose & Throat Institute, UH Case Medical Center. The center, led by Nicole Marionian, MD, Director, Voice & Swallowing Center, UH Case Medical Center, and Associate Professor, Otolaryngology, School of Medicine, and Mark Weidenbecher, MD, Clinical Assistant Professor, Otolaryngology, School of Medicine, opened a second office at UH Chagrin Highlands Health Center on Cleveland’s Eastside. Both locations offer:

• Diagnostic vocal cord evaluation using digital videostroboscopy
• Biopsy of papillomas or other vocal cord lesions
• Minimally invasive removal of precancerous or cancerous lesions using pulsed-PTK laser
• Transnasal esophagoscopy
• Flexible endoscopic evaluation of swallowing (FEES)
• Outpatient laryngeal EMG and BOTOX® injections to treat muscle weakness due to spasmodic dysphonia or stroke

These and other procedures can be performed during office visits, under local anesthesia.

AUDITORY BRAINSTEM IMPLANT PROCEDURE

In March 2014, Maroun Semaan, MD, FACS, Director, UH Ear, Nose & Throat Institute, Ear, Hearing & Balance Center and Cochlear Implant Surgery; and Associate Professor, Otolaryngology – Head & Neck Surgery, School of Medicine, along with Cliff Megerian, MD, FACS, Chairman, Otolaryngology – Head and Neck Surgery, University Hospitals Case Medical Center and Case Western Reserve University School of Medicine; Interim President, University Hospitals Physician Services; Richard W. and Patricia R. Pogue Chair in Auditory Surgery and Hearing Sciences; Director, UH Ear, Nose & Throat Institute, UH Case Medical Center; and Julius W. McCall Professor, Case Western Reserve University School of Medicine, and Nicholas Bambakidis, MD, Vice Chairman and Program Director, Department of Neurological Surgery, UH Case Medical Center; and Associate Professor Neurosurgery and Radiology, School of Medicine, completed the first auditory brainstem implant (ABI) procedure in Northeast Ohio. The procedure provides direct electrical stimulation to the brainstem for patients with hearing loss caused by damaged auditory nerves, who cannot benefit from cochlear implants. It is FDA approved for adults and available locally. The technique is in trials for pediatric patients, and UH surgeons performed the first pediatric ABI in Ohio in 2014.

FIRST HYBRID L24 IMPLANT

Patients with severe hearing loss in higher frequencies but who still retain hearing in lower frequencies are often dissatisfied with hearing aids. These patients have not historically been candidates for cochlear implantation, which is typically reserved for patients with profound hearing loss. The new Nucleus® Hybrid L24 Cochlear Implant System (L24) combines a modified cochlear implant to electrically stimulate the auditory nerve for higher frequencies with amplification of existing hearing in lower frequencies. This hybrid approach, approved by the FDA in 2014, preserves 60 to 70 percent of hearing in low frequencies, providing an advantage over pure cochlear implantation, especially in noisy environments. The L24 device has been implanted at only a handful of centers in the United States. Dr. Maroun Semaan performed the first implantation of the L24 device in Cleveland in July 2014.

NEW PEDIATRIC AND CRANIOFACIAL SWALLOWING CLINIC

Physicians with the UH Ear, Nose & Throat Institute are collaborating with UH colleagues on a new Pediatric Aerodigestive Center at UH Rainbow Babies & Children's Hospital. Pediatric patients traveling to the hospital for airway or swallowing issues will be able to see a full complement of specialists – ENT, pulmonology, gastroenterology and speech pathology – in one clinic, during a single visit. Led by Jay Shah, MD, Division of Pediatric Otolaryngology, UH Case Medical Center and UH Rainbow Babies & Children's Hospital, and Assistant Professor, Otolaryngology, School of Medicine, the center also will include Todd Otteson, MD, MHP, Division Chief, Pediatric Otolaryngology, UH Case Medical Center and UH Rainbow Babies & Children's Hospital; James E. Arnold, MD and Nancy P. and Thomas W. Seitz Chair in Pediatric Otolaryngology; and Associate Professor, Otolaryngology, School of Medicine; Thomas Sferra, MD, Division Chief, Pediatric Gastroenterology and Nutrition, UH Case Medical Center and UH Rainbow Babies & Children’s Hospital; Jay K. Kinney, MD and Mark B. Puglisi, MD, Division Chief, Pediatric Pulmonary, UH Case Medical Center and UH Rainbow Babies & Children’s Hospital; and Professor, Pediatrics, School of Medicine. The center is slated to open in 2015.
UH Case Medical Center’s physicians, surgeons and scientists – all members of the faculty of Case Western Reserve University School of Medicine – are leaders in their respective fields, and their ongoing research programs are at the leading edge of medical progress. A strong emphasis on translational, or “bench-to-bedside,” research means that new and innovative treatments and technologies transfer more rapidly from the research laboratory to actual patient care.

**ZEBRAFISH LAB**

A team of UH researchers led by Brian McDermott, PhD, Assistant Professor, Otolaryngology, Genetics and Genome Sciences and Neuroscience, School of Medicine, published the cover article in the January 1, 2014, issue of the Journal of Neuroscience based on their work studying mechanosensitive hair bundles in zebrafish. Zebrafish provide a useful model for studying hearing loss, as the hair cells are very similar to human cells, and their development can be studied from the larval stage in the optically transparent fish. Using these models, Dr. McDermott’s team demonstrated that the protein ACF7 links hair cell microtubules to actin on the cuticular plate. The work provides new insight into the cytoskeleton and genesis of hair cells and, potentially, could help reveal underlying genetic causes of deafness. This is just one area of research in the zebrafish lab, which has recently been expanded with the support of UH Case Medical Center, to house more than 30,000 specimens.

**VALIDATION OF DIAGNOSTIC APPROACH FOR ENDOLYMPHATIC HYDROP**

Physicians have long used electrocochleography to measure fluid in the inner ear as a diagnostic tool for endolymphatic hydrop (ELH)-related disorders such as Meniere’s disease, which causes tinnitus, vertigo and hearing loss. But the correlation between elevated fluid ratios and ELH had not been scientifically proven. A team led by Kumar Alagramam, PhD, Anthony J. Maniglia Chair in Otolaryngology Head and Neck Surgery, Director of Research and Associate Professor of Otolaryngology, Genetics and Genome Sciences and Neurosciences, School of Medicine, collected auditory brainstem responses and electrocochleography data in mouse models mutated with ELH and compared them with controls. The mice were then euthanized to perform cochlear histology. The study revealed that elevated fluid ratios are indeed diagnostic of ELH. The study also demonstrated, however, that higher ratios do not correlate with the severity of histological ELH, and that severity of hearing loss is a much more reliable predictor. These results were published in the June 2014 issue of the Journal of the Association for Research in Otolaryngology.

**MOLECULAR CONSEQUENCES OF NOISE DAMAGE**

Noise-induced hearing loss (NIHL) is a major public health issue in the industrialized world, especially among military personnel, but the early molecular events associated with NIHL are not well understood. A team led by Dr. Kumar Alagramam investigated the immediate molecular responses in mice models exposed to different levels of noise to identify the pathways that mediate NIHL. The team identified a set of previously identified and novel genes associated with the mitogen-activated protein kinase (MAPK) signaling pathway that are activated following exposure. These insights provide a wealth of new data to explore and could ultimately provide targets for inhibiting the molecular chain of events that leads to NIHL. These results were accepted in September 2014 for publication in the journal Noise and Health.

**RUBEN STEPANYAN, PHD**

New to UH is Ruben Stepanyan, PhD, Assistant Professor of Otolaryngology – Head & Neck Surgery, School of Medicine. Dr. Stepanyan joined the department after completing his postdoctoral training at the University of Kentucky, where he studied the mechanosensitivity of the sensory hair cells of the inner ear. He is continuing this work at Case Western Reserve University, as well as studying the mechanisms by which hair cells modulate calcium, as compromised calcium balance is a significant factor leading to hair cell death and associated hearing loss. Dr. Stepanyan is particularly interested in the role that calcium modulation in hair cells plays in causing people to lose hearing in high frequencies before losing hearing in lower frequencies. He has developed a model to explain this phenomenon and his lab is now working to use this model to identify potential strategies to prevent hearing loss.

All National Institutes of Health (NIH) funding for basic and clinical research is awarded to the School of Medicine at Case Western Reserve University.
DEPARTMENT OF OTOLARYNGOLOGY – HEAD & NECK SURGERY

LEADERSHIP
Cliff A. Megerian, MD
Chair, Otolaryngology – Head & Neck Surgery
Director, UH Ear, Nose & Throat Institute
Richard W. and Patricia R. Pogue Chair in Auditory Surgery and Hearing Sciences Professor

James E. Arnold, MD
Program Director

Kumar Alagramam, PhD
Anthony J. Maniglia Chair in Otolaryngology Head and Neck Surgery.
Director of Research, Associate Professor

Jonathan Baskin, MD
Chief, Wade Park Medical Center
Assistant Professor

Pierre Lavertu, MD
Director, Head & Neck Surgery and Oncology and Vice Chair of Academic Affairs, Otolaryngology – Head & Neck Surgery
Professor

Nicole Maronian, MD
Director, Voice & Swallowing Center and Vice Chair of Education and Quality, Otolaryngology – Head & Neck Surgery
Associate Professor

Todd Otteson, MD, MHP
James E. Arnold, MD and Nancy P and Thomas W. Seitz Chair in Pediatric Otolaryngology Division Chief, Pediatric Otolaryngology
Assistant Professor

David Stepnick, MD
Associate Professor

Chad Zender, MD
Assistant Professor

ALLERGY/RHINOLOGY/ANTERIOR SKULL BASE SURGERY
Kenneth Rodriguez, MD
Chief of Rhinology, Allergy and Skull Base Surgery
Assistant Professor

Steven Houser, MD, FACS, FAAOA
Associate Professor

Nicole Ponsky, MD
Assistant Professor

Tony Reisman, MD
Assistant Professor

Chad Zender, MD
Assistant Professor

FACIAL PLASTICS & MICROVASCULAR RECONSTRUCTIVE SURGERY
Rod Rezaee, MD
Assistant Professor

Diana Ponsky, MD
Assistant Professor

Jonathan Baskin, MD
Assistant Professor

Nicole M. Fowler, MD
Assistant Professor

Freedom Johnson, MD
Assistant Professor

David Ludlow, MD
Assistant Professor

Chad Zender, MD
Assistant Professor

GENERAL OTOLARYNGOLOGY
Tony Reisman, MD
Assistant Professor

Joseph B. Carter, MD
Associate Professor

Gia Hoosien, MD
Assistant Professor

Melvin Strauss, MD
Professor

LARYNGOLOGY & VOICE DISORDERS
Nicole Maronian, MD
Associate Professor

Mark Weidenbecher, MD
Assistant Professor

Harvey M. Tucker, MD, FACS
Professor

HEAD & NECK SURGICAL ONCOLOGY
Pierre Lavertu, MD
Professor

Nicole Fowler, MD
Assistant Professor

Evan Greenbaum, MD
Fellow

Freedom Johnson, MD
Assistant Professor

Hassan Abbass, MD
Clinical Assistant Professor

Steve Hunyadi Jr., MD
Clinical Instructor

RESEARCH FACULTY
Kumar Alagramam, PhD
Director of Research, Associate Professor

James Dennis, PhD
Assistant Professor

Steven Eppell, PhD
Associate Professor

Anthony J. Maniglia, MD
Professor Emeritus

Brian McDermott, PhD
Assistant Professor

Reuben Stepanyan, PhD
Assistant Professor

Aaron Weinberg, DDS, PhD
Professor

Qing Yin Zheng, MD
Associate Professor

AUDIOLOGY
Gail S. Murray, MEd, PhD, CCC-A, AAA
Christine Boyer, AuD, CCC-A
Ellen Cobler, AuD, CCC-A
Sarah Curtis, AuD, CCC-A
Anne Christine Dolan, AuD, CCC-A (PRN)
Andrew DeLong, AuD, CCC-A
Jessica Dziedzicki, AuD, CCC-A
Danielle Hoenig, AuD, CCC-A
Sarah Lombardo, MA, CCC-A
Gail Murray, PhD, CCC-A
Christy Pappas, AuD, CCC-A
Robin Piper, AuD, CCC-A
Samantha Steiner, AuD, CCC-A
Andrea Sterkel, AuD, CCC-A
Katie Strange, AuD, CCC-A
Allyson Valentine, AuD, CCC-A

PEDIATRIC OTOLARYNGOLOGY
Todd Otteson, MD, MHP
Division Chief, Pediatric Otolaryngology
Assistant Professor

James E. Arnold, MD
Professor

Jay Shah, MD
Assistant Professor

Dina Cirino, RN, MSN, CPNP-AC

COMMUNITY OTOLARYNGOLOGY
Fadi Abbass, MD
Clinical Assistant Professor

Steve Hunyadi Jr., MD
Clinical Instructor

HEAD AND NECK CANCER/TEP SPEECH LANGUAGE PATHOLOGISTS
Jaclyn Benkofsky, MA, CCC-SLP
Kelley Heine, MA, CCC-SLP
Kevin Mahon, MA, CCC-SLP
Lindsey Noblitt, MA, CCC-SLP
Kimberly O’Brien, MA, CCC-SLP
Maureen Oleniczak, CFY-SLP

ADULT SPEECH LANGUAGE PATHOLOGISTS
Charita Gadson, MA, CCC-SLP (Supervisor)
Michelle Adessa, CFY-SLP
Jaimie Bifro, MA, CCC-SLP
Karen Bush, MA, CCC-SLP (PRN)
Jessica Cruz, MA, CCC-SLP (PRN)
Monica Gordon-Pershey, PhD, CCC-SLP (PRN)

Alexis Nahra, MA, CCC-SLP
Tracey Newman, MA, CCC-SLP
Candice Richard, MA, CCC-SLP (PRN)

VOICE SPEECH LANGUAGE PATHOLOGISTS
Michelle Adessa, MA, CFY-SLP
Tracey Newman, MA, CCC-SLP

HEAD AND NECK CANCER/TEP SPEECH LANGUAGE PATHOLOGISTS
Ellen Greenfield, MA, CCC-SLP
Elizabeth Lovelace, MA, CCC-SLP

PEDIATRIC SPEECH LANGUAGE PATHOLOGISTS

RESEARCH FACULTY
Kumar Alagramam, PhD
Director of Research, Associate Professor

James Dennis, PhD
Assistant Professor

Steven Eppell, PhD
Associate Professor

Anthony J. Maniglia, MD
Professor Emeritus

Brian McDermott, PhD
Assistant Professor

Reuben Stepanyan, PhD
Assistant Professor

Aaron Weinberg, DDS, PhD
Professor

Qing Yin Zheng, MD
Associate Professor

SCHOOL OF MEDICINE
CAS WERNER RESERVE UNIVERSITY

DEPARTMENT OF OTOLARYNGOLOGY – HEAD & NECK SURGERY
To refer a patient or learn more about UH Case Medical Center Department of Otolaryngology – Head & Neck Surgery, call 216-844-6000 or visit UHhospitals.org/ENT.