TRIOLOGICAL SOCIETY

128TH ANNUAL MEETING AT COSM

The Triological Society
UPHOLDING THE NOBLE LEGACY

Phoenix Convention Center | Phoenix, AZ
April 23-24, 2026

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128TH ANNUAL MEETING AT COSM

April 23-24, 2026 • Phoenix Convention Center • Phoenix, AZ

About the Triological Society
The American Laryngological, Rhinological and Otological Society, Inc., aka The Triological Society, was founded in 1895 in New York, NY. Since its founding, the Triological Society has attracted the best and brightest in academic and clinical otolaryngology. Membership in the Triological Society brings the distinction of being elected to the most prestigious society in otolaryngology. Active Fellowship is achieved by presenting a thesis in the field of otolaryngology considered acceptable to a panel of peers. For those entering the field of otolaryngology, the Society provides role models. For those who are committed to research and related scholarly activity, the Society offers fellowship with like-minded peers who share common values, interests, and concerns.

The Society disseminates scientific information by presenting the latest basic science and clinical information at scientific meetings and through publication of its scientific journals, The Laryngoscope and Laryngoscope Investigative Otolaryngology. The Society promotes research into the causes of and treatments for otolaryngic diseases by attracting promising physicians to scholarly otolaryngology research and supporting their development, providing financial support for the research efforts of young scientists, and promoting the highest standards in the field of otolaryngology-head and neck surgery.

Mission Statement
The mission of the Triological Society is to assist physicians and other health care professionals in maintaining and enhancing their knowledge of and skills in otolaryngology-head and neck surgery in pursuit of improved patient care.

Goals
- To continue the noble legacy of the Triological Society, which is to attract, develop and mentor the best otolaryngologists to become scholars and leaders.
- To encourage, support, and disseminate through meetings, print and electronic mediums the latest basic and clinical research findings and reports on evidence-based medicine pertaining to the diagnosis, treatment and prevention of the full spectrum of disorders of the head and neck and related structures.
- To seek out and encourage scientific and technical advances in otolaryngology-head and neck surgery.
- To provide a forum through meetings, print and electronic mediums for the international exchange of ideas and knowledge in otolaryngology-head and neck surgery and related fields of medicine and science.
- To provide for physician professional development through support of teaching and peer reviewed research.
- To encourage the highest ethical and professional standards in the delivery of patient care by otolaryngologist-head and neck surgeons.
- To promote academic excellence by requiring peer recommendations and an acceptable mentored thesis for admission to membership.
- To ensure that all educational activities comply with ACCME directives, and develop vehicles for otolaryngologist-head and neck surgeons to meet their Maintenance of Certification requirements.
- To enhance fellowship amongst members by creating social forums for interface and conversation.
- To maintain The Laryngoscope and Laryngoscope Investigative Otolaryngology as primary journals at the forefront of excellence as a resource and venue for scientific advancement of the profession.
- To advance the Society's standing outside the field of otolaryngology-head and neck surgery and promote across all types of practice environments.

- To facilitate the above goals, the Society sponsors educational meetings. The Society's journals, The Laryngoscope and Laryngoscope Investigative Otolaryngology serve as a means of disseminating the latest basic and clinical research results. The Society encourages research in otolaryngology-head and neck surgery by providing research grants and awards on a competitive basis.

Research and Travel Grants
- To date, TRIO has awarded over **$7 million** in grant funds to otolaryngologist-head and neck surgeons to 1) help facilitate research career development in young otolaryngologists; and 2) further support otolaryngology clinical scientists with new or existing K08/K23 awards;
- In 2025, the Triological Society awarded $269,250 to residents, medical students, and Fellows who presented award winning posters at the Society's meetings.

Program Objectives
This activity is designed for otolaryngologists-head and neck surgeons and other health professionals. At the conclusion of this activity, the learner should be able to:
- Update of evaluation and management of variety of common and uncommon disorders affecting the ear, nose, throat, head, and neck.
- Dissatisfaction and burnout among physicians and other healthcare professionals.
- Team approach in complex airway, otology and head-neck patients.
- Evaluate their own competence across clinical practice, education, research, and practice management in otolaryngology to identify and address knowledge gaps proactively.

Exhibits
Exhibitors will include representatives of pharmaceutical companies, instrument companies, diagnostic equipment companies, and others. We encourage attendees to visit the exhibit hall for information that may assist in their pursuit of improved patient care. Exhibitor arrangements are in compliance with the Accreditation Council for Continuing Medical Education (ACCME) Standards for Commercial Support.

Information presented by exhibitors and oral and poster presenters does not represent an endorsement by the Triological Society.

Disclosure Information
In accordance with the ACCME Accreditation Criteria, the American College of Surgeons must ensure that anyone in a position to control the content of the educational activity (planners and speakers/authors/discussants/moderators) has disclosed all relevant financial relationships with any ineligible company held in the last 24 months. All reported conflicts are managed by a designated official to ensure a bias-free presentation. Please note that first authors were required to collect and submit disclosure information on behalf of all other authors/contributors, if applicable.

Please see the insert to this program for the complete disclosure list.

CME
Award of CME credits by ACS is based on compliance of the program with the ACCME accreditation requirements and does not imply endorsement by ACS of the content, the faculty, or the sponsor of the program.

Successful completion of this CME activity, which includes participation in the evaluation component, enables the learner to earn credit toward the CME requirements of the American Board of Surgery's Continuous Certification program.

Diplomates of the American Board of Surgery
By participating in an ACS-accredited activity, you may choose to participate in the automatic transfer of your CME credits to the ABS via the ACCME. The direct automatic transfer applies to all learners who have an American College of Surgeons (ACS) profile, are Diplomates of the ABS, and have provided their ABS ID and date of birth in the ACS MyCME Portal on the Board Certification page.

If you do not already have an American College of Surgeons (ACS) profile (Learner ID), you can create one through the ACS New User Registration Form. This is a free offering for those who have enrolled in an ACS-Accredited educational activity. The ACS ID will grant you access to MyCME where you can track, manage, and send your CME Data to the ABS.

If you need assistance with creating an ACS Learner ID or are not certain if you already have one, please contact Log-In Help.

For more information or to request assistance, contact mycme@facs.org

CONTINUING MEDICAL EDUCATION CREDIT INFORMATION

Accreditation
This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of American College of Surgeons and Triological Society. The American College of Surgeons is accredited by the ACCME to provide continuing medical education for physicians.

AMA PRA Category 1 Credits™
The American College of Surgeons designates this live activity for a maximum of **13.25** *AMA PRA Category 1 Credits™.* Physicians should claim only the credit commensurate with the extent of their participation in the activity.

ACS AMERICAN COLLEGE OF SURGEONS

ACCME ACCREDITED WITH COMMENDATION

Message from the President
Alan G. Micco, MD FACS

Dear Colleagues and Friends,

On behalf of the Triological Society, it is my great pleasure and honor to welcome you to the 128th Annual Meeting. We are excited to gather once again with distinguished clinicians, scientists, educators, and trainees who share a commitment to advancing excellence in otolaryngology-head and neck surgery.

This annual meeting continues a proud tradition of scholarly exchange, innovation, and mentorship that has defined the Triological Society and its noble legacy for more than a century. We continue to be a transformative society with changing faces of our leadership and opportunities for participation for all our members.

The scientific program reflects the depth and breadth of our specialty. Our program Chair, Dr. Reza Rahbar, and his hardworking program committee have designed a superb program. We have clinical and scientific discussions for all the subspecialties and several very interesting panels that examine other aspects of our specialty including an update on graduate medical education, leadership, diversity, and cutting-edge technology. There will also be a featured lecture on healthcare systems. We are fortunate to have a society that provides opportunities for meaningful collaboration across subspecialties and generations and allow participants to explore a broad range of topics that they will not find at other meetings.

Beyond the academic program, we hope this meeting provides time to reconnect with colleagues, foster new professional relationships, and reflect on the shared mission that unites our Society: the pursuit of knowledge, lifelong learning, and improved care for our patients.

Our society owes a tremendous debt of gratitude to our outstanding staff of Beth Faubel, Colleen Finnerman, Angel Alcazar, and Beth Slovinski, who work tirelessly behind the scenes to create this wonderful experience for the attendees.

I look forward to welcoming you to Phoenix. Thank you for your participation and your continued dedication to the Triological Society. We wish you an engaging, inspiring, and rewarding meeting. If you are not a member yet we invite all of you to join our Society. We represent the entire specialty and the entire range of practice environments. The Triological Society is after all, The House of Otolaryngology.

With warm regards,

Alan G. Micco, MD FACS
President
Triological Society

Triological Society Honorees

CITATION AWARDEE
David B. Conley, MD FACS

Dr. David Conley is a board-certified otolaryngologist at Northwestern University in Chicago with a practice focus in Rhinology and Endoscopic Skull Base Surgery. He also practices at the John H. Stroger, Jr Hospital of Cook County and is a consultant at the Ann & Robert H. Lurie Children's Hospital of Chicago. He attended medical school at the University of Chicago Pritzker School of Medicine and completed both an Otolaryngology residency and a NIH research fellowship at Northwestern. He is an Associate Professor in the Department of Otolaryngology, Head and Neck Surgery. He is the director of the Northwestern Advanced Rhinology and Endoscopic Skull Base Fellowship with 21 years of fellows, and he is the clinical director of the Northwestern Otolaryngology practice.

Dr. Conley's clinical practice focuses on the surgical and medical treatment of chronic rhinosinusitis as well as the surgical management of sinus and skull base tumors. He is also a founding member of the Northwestern Allergy and Sinus Center which provides coordinated evaluation and care for patients with chronic rhinosinusitis and facilitates a longstanding interdepartmental research program to study the etiology and treatment outcomes of chronic rhinosinusitis.

Dr. Conley has served on numerous AAOHNS and ARS committees, is a past President of the Chicago Laryngological and Otologic Society and serves as a board member of the Intersocietal Accreditation Commission and is past president of the IAC-CT Board of Directors. He has presented at numerous national and international Otolaryngology conferences. His longstanding career goals are to provide the best care for patients, improve the education of residents and fellows, and to advance research to better understand the nature of sinus disease and optimize treatment outcomes.

CITATION AWARDEE
Pamela Fiebig, AuD

Pamela Fiebig had a 38 year career at Northwestern University in the Audiology and Otolaryngology Programs. During this time, she wore many different hats -- teacher, administrator, clinician, and mentor. Her most rewarding role was in the establishment and expansion of the cochlear implant clinical program at Northwestern Medicine. Along with the young Dr. Micco, she managed the patients and study data for early trials with devices and investigative protocols from the three major cochlear implant manufacturers. As the cochlear implant program grew, she mentored new audiologists by sharing her extensive historical experience in their skill development.

Dr. Fiebig was a founding member, past-president and Honors Recipient of the Illinois Academy of Audiology. She served as Trustee of the American Academy of Audiology Foundation.

She was surprised, flattered and honored by this nomination. She has been retired for three years and now lives quietly with her husband and two Maine Coon cats in Michigan.

CITATION AWARDEE
David S. Haynes, MD MMHC

David S. Haynes, MD MMHC FACS is chief of the Division of Otology and Neurotology, Program Director of the Neurotology Fellowship, Co-Director of the Cochlear Implant Program and Skull Base Center, and Endowed Director of Relationship Development in the Department of Otolaryngology-Head and Neck Surgery at Vanderbilt University Medical Center. He was named VUMC's Chief Patient Experience Officer in July 2023.

Dr. Haynes is a pioneer of otologic surgery and has helped to design many of the tools and techniques that have become the standard of practice in chronic ear surgery, cochlear implantation, and lateral skull base surgery. With a career-long focus on the care of the individual patient, Dr. Haynes has developed novel systems to overcome barriers to timely otologic care. Beginning in 1997, Dr. Haynes designed and piloted a streamlined process to reduce travel burden and wait times for cochlear implant patients that resulted in the world's first bundled cochlear implant program and, in 2019, the initiation of the Same Day Cochlear Implant Program.

He received his medical degree from the University of Tennessee College of Medicine, Memphis and was one of the first residents trained in Otolaryngology-Head and Neck Surgery at Vanderbilt University Medical Center. He completed his clinical fellowship at The Otology Group/the EAR Foundation, now known as the Otology Group of Vanderbilt. His leadership positions have included the executive board of the American Neurotology Society, the Hearing Health Foundation, Otology and Neurotology Inc., and the American Cochlear Implant Alliance, and he serves as an associate editor of *Otology and Neurotology Open*. He is the President elect of the American Neurotology Association. He holds a Master of Management in Healthcare from Owen School of Business (2017) and is a Fellow of the American College of Surgeons. He is a co Editor of the book Glasscock, Shambaugh, and Haynes Surgery of the Ear.

His research involves investigating treatment optimization of patients with hearing loss and skull base disorders as well as optimizing health care delivery to patients with otologic disorders and has appeared in leading academic journals including *The Laryngoscope* and *Otology and Neurotology*. Dr. Haynes serves as an advisor to the Haynes Award for Innovation given annually in Nashville, Tennessee. He has hosted many international conferences including the XIV International Pediatric Cochlear Implant Conference in Nashville, TN, as well as Co-Directing the International Fall CI Meeting.

GUEST OF HONOR
Elizabeth H.Y. Toh, MD MBA

Dr. Elizabeth Toh graduated from medical school at the National University of Singapore. She completed her Otolaryngology residency training at Mount Sinai Medical Center in New York and Neurotology fellowship training at the House Ear Clinic in Los Angeles. She joined the Otolaryngology faculty at the University of Pittsburgh in 2001 and was subsequently recruited to Lahey Clinic in 2009 to head the Division of Otology/Neurotology. Dr. Toh has a special interest in hearing implant technology and skull base surgery and serves as the Director of the Balance and Hearing Implant Center and Co-Director of the Center for Cranial Base Surgery at Lahey Hospital & Medical Center.

She completed her MBA from MIT School of Business in 2017. She was appointed to her current role at Lahey Hospital and Medical Center in 2021; Chair of Otolaryngology-Head and Neck Surgery. In addition, Dr. Toh has served in various national leadership roles in Otolaryngology and Neurotology. Dr. Toh is the Past President of the American Neurotology Society, Past President of the Otosclerosis Study Group, and Deputy Editor-in-Chief of the gold open-access journal, Otology & Neurotology Open. She also served as the Co-Advisor for the Asia Pacific Rim for the American Academy of Otolaryngology-Head and Neck Surgery. She currently serves on the Exam Council of the American Board of Otolaryngology.

JOSEPH H. OGURA, MD, LECTURER
Cliff A. Megerian, MD FACS

Cliff A. Megerian, MD, is Chief Executive Officer of University Hospitals (UH), a comprehensive health system with annual revenues of $7.0 billion, over 33,000 employees and nearly 300 locations in 16 counties throughout Northeast Ohio, including 21 hospitals, outpatient facilities and physician offices. He assumed this position in February 2021 and joined UH in 2002. He holds the Jane and Henry Meyer Chief Executive Officer Distinguished Chair.

In December 2019, Dr. Megerian was selected as the system's next CEO and initially appointed the system's President, where he led the organization through an unprecedented pandemic. Prior to that, he served as President, University Hospitals Physician Network, Physician Services and System Institutes. In these positions, he was charged with managing the clinical integration strategies, policies and practice guidelines for more than 2,500 UH employed physicians as well as the operations and infrastructure for UH system institutes. These clinical care institutes bring highly trained subspecialists together from multiple disciplines to collaborate on the best treatment for patients -- promoting uniform, standard care protocols and the sharing of best practices.

Additionally, he raised physician productivity to its highest level and significantly increased physician engagement and research funding. UH's physician network includes the full-time academic medical practice at UH Cleveland Medical Center and UH's community-based, multi-specialty physician network throughout Northeast Ohio.

Dr. Megerian is also a Professor in the Department of Otolaryngology, Head and Neck Surgery and Neurosurgery at Case Western Reserve University (CWRU) School of Medicine, where he was Chair from 2012-2018 and held the Julius McCall Professorship at CWRU, as well as the Richard and Patricia Pogue endowed Chair in Auditory Surgery and Hearing Sciences at UH. He also serves as an Adjunct Professor of Surgery at Northeast Ohio Medical University.

Prior to UH, he served on the physician staffs of the Louis Stokes Cleveland Veteran Affairs Medical Center and Metro Health System Medical Center. At the University of Massachusetts Medical Center, Dr. Megerian was the Director of Otology and Neurotology, as well as the Director of Residency Training, the Medical Director, Cochlear Implantation Program, and the Co-Director, Center for Skull Base Diseases. He also served on the medical staff of Massachusetts Eye and Ear Infirmary and Boston Medical Center.

Dr. Megerian's clinical career has been devoted to the management of hearing loss, chronic ear disease, cholesteatoma, otosclerosis, vertigo, and other otology and neurotology issues. As a surgeon, Dr. Megerian co-founded UH's Cochlear implant program and he and his team have performed thousands of cochlear implant surgeries, making it one of the largest programs in the country.

He is also an expert in the diagnosis and treatment of acoustic neuroma. He has published over 130 peer-reviewed manuscripts and abstracts and has served as visiting professor at numerous medical schools and institutions throughout the world.

His research interests in the pathogenesis of Meniere's disease have been funded by a number of agencies including the NIH and DRF. He previously served as a consultant to the FDA in the regulation of Ear, Nose and Throat Devices. He is co-author and co-editor of a textbook in its second publishing, "Surgery of the Cerebellopontine Angle".

Dr. Megerian is a graduate of the University of Michigan Medical School and completed a residency in otolaryngology-head and neck surgery at University Hospitals of Cleveland and CWRU. He completed a research and clinical fellowship in otology and neurotology at Harvard Medical School, Massachusetts Eye and Ear Infirmary. He also completed a certificate program in healthcare management at Weatherhead School of Business at CWRU.

Dr. Megerian has been widely recognized for his leadership in healthcare at the regional and national levels. In 2023, Modern Healthcare named him one of the 100 Most Influential People in the U.S. healthcare industry, and Ohio Business Magazine included him in the Ohio 500, honoring leaders shaping the state's future.

His influence continued to be acknowledged in 2024 and 2025, as Cleveland Magazine named him to the Cleveland 500 for guiding University Hospitals to grow and adapt in a rapidly changing healthcare landscape. In 2024, Crain's Cleveland Business again recognized his leadership, naming him to its Power 150 list of executives positioned to move Northeast Ohio forward -- an honor he had earned in prior years as well. That same year, Becker's Healthcare highlighted Dr. Megerian on multiple national lists, including 80 Great Leaders in Healthcare, 64 CEO Influencers to Know, and 30 Highly Successful CEO-CFO Duos.

Becker's continued to acknowledge his impact, most recently listing him among 95 Academic Medical Center CEOs to Know and naming him one of the Most Influential CEOs in healthcare. In 2025, Crain's Cleveland Business added him to its Who's Who list of leaders shaping the region's progress.

Under his leadership, University Hospitals has also earned significant accolades. UH was named by Forbes as one of America's Dream Employers for 2025, placing among the Top 10 nationwide. In 2024, U.S. News & World Report recognized UH Cleveland Medical Center as the Best Regional Hospital for Equitable Access -- the only Ohio hospital included on this inaugural list; and UK Brand Finance magazine named UH Cleveland Medical Center among the Top 10 academic medical centers in the U.S. and among the Top 25 in the world. Earlier, in 2022, University Hospitals received the American Hospital Association's Quest for Quality Prize, the organization's highest honor for excellence in quality and safety.

Dr. Megerian and his wife Lynne Sheffler Megerian, MD, have three adult children.

3rd Annual Gerald B. Healy Panel
Current State of Graduate Medical Education

To honor the manifold contributions to Otolaryngology-Head and Neck Surgery; and in particular, The Triologic Society, the Executive Committee and Council have unanimously chosen to create the Gerald B. Healy MD, FACS Panel, The panel will convene at each COSM meeting wherein living into the ecumenical spirit championed by Gerry including: scholarship, fellowship, advocacy, and the promotion of specialty and subspeciality interaction- sharing knowledge to better the lives of patients and promote the ongoing education of physicians.

This year's Gerald Healy panel will focus on the current state and future of graduate medical education. Dr. Jessica Bienstock, Chair of the ACGME Board of Directors, will be one of the featured panelists. The topics of discussion will include how private equity and unionization is becoming more common in residency training. In addition, discussion will include potential future changes in ACGME core requirements. The panel is scheduled on Friday, April 24 at 9:40am.

Program Planning Committee

Reza Rahbar, MD FACS
Program Chair

Alan G. Micco, MD FACS
President

Eelam A. Adil, MD MBA

Kenneth W. Altman, MD PhD FACS

James A. Burns, MD FACS

Susan R. Cordes, MD FACS

Sharon L. Cushing, MD BScH MSc

Steven L. Goudy, MD FACS

Tina C.T. Huang, MD MS

Ashutosh Kacker, MD FACS

David I. Kutler, MD FACS

Devyani Lal, MD MBBS MS

Miriam Lango, MD FACS

Yash J. Patil, MD MPH

Steven D. Pletcher, MD

Jason T. Rich, MD FACS

Brianne B. Roby, MD

Michael D. Seidman, MD FACS

Stephanie S. Smith, MD

Baran D. Sumer, MD

Maria V. Suurna, MD FACS

Elizabeth H.Y. Toh, MD MBA

Jennifer A. Villwock, MD

Mark K. Wax, MD FACS

Jose P. Zevallos, MD MPH FACS

TRIO LEADERSHIP ACADEMY

CALL FOR APPLICATIONS

The Triological Society (TRIO) is pleased to announce the launch of its **Leadership Academy**, a structured, year-long course designed to educate and cultivate leadership skills amongst **early- to mid-career otolaryngologists** within our membership.

This program leverages the expertise and experience of distinguished TRIO Fellows to promote the participants capabilities in clinical and academic medicine, organizational medicine, and healthcare systems. Through a combination of in-person and virtual learning experiences, participants will engage in practical leadership training, peer collaboration, and mentorship from established leaders in the field of Otolaryngology-Head and Neck Surgery.

Program Structure

The Leadership Development Program is a **12-month curriculum** that includes:

- **Four (4) in-person sessions**
- **Eight (8) virtual sessions**
- Interactive leadership workshops and discussions
- Networking and mentorship opportunities with senior leaders in the specialty

The **inaugural cohort will be limited to 10 participants**, allowing for a highly interactive and personalized learning environment.

Program Cost

The program fee is **$7,500**, which covers participation in the full 12-month curriculum. Lodging, meals, and meeting registration fees (where applicable) are included in the program fee. Expanded participation at selected meetings that are not related to this program will be the responsibility of the participant.

Eligibility

Applicants must:

- Be a current Fellow of the Triological Society in good standing
- Demonstrate interest in leadership development within academic/clinical medicine, healthcare organizations, or professional societies

Application Requirements

To be considered, applicants must submit:

1. **Completed Participant Application**
2. **Current Curriculum Vitae (CV)**
3. **Two (2) Letters of Recommendation**

Selection Process

Applications will be reviewed by the TRIO Leadership Academy Program Committee. Selection will be based upon demonstrated leadership potential, professional accomplishments, and commitment to collaboration in advancing the specialty.

How To Apply

Scan the QR code to complete application materials must be submitted by **Monday, June 8, 2026.**

2026 Thesis Award Winners

Harris P. Mosher Award

Gavriel D. Kohlberg, MD

Perceptual Effects of Delayed Speech Enhancement: Influence of Delay, Gain, and Listening Environment

Edmund Prince Fowler Award

Jin Young Min, MD PhD

Nongastric H,K-ATPase in Type 2 Inflammation Associated Airway Acidification: Implications of Chronic Rhinosinusitis with Nasal Polyps

Maureen Hannley Alternative Science Award

Susan D. Emmett, MD MPH

Reimagining School Hearing Screening in Rural America: An Evidence Based Approach

Honorable Mention for Basic Science Award

Alexander G. Bien, MD

Real Time Measurement of Basilar Membrane Movement During Low Intensity Blast Exposure

Honorable Mention for Basic Science Award

Anita S. Jeyakumar, MD MS FACS FAAP

Cochlear Implants and Electrocautery: A Live Animal Model

Honorable Mention for Clinical Research Award

Matthew L. Carlson, MD

The Unique Natural History of Very Small Vestibular Schwannoma Substantiates Wait and Scan Management via Size Threshold Surveillance

Honorable Mention for Clinical Research Award

R. Jun Lin, MD FRCSC MSc

Comparison of Blue Light Laser and KTP Laser for Treatment of Benign Vocal Fold Lesions: A Randomized Controlled Trial

With Distinction Award

Shumon I. Dhar, MD FACS

Laryngeal Cryotherapy for Refractory Neurogenic Cough: Safety, Feasibility, and Prospective Outcomes

With Distinction Award

Matthew Shew, MD

From Binary to Personalized: A Novel Machine Learning Probability Score for Cochlear Implant Candidacy - Empowering Providers and Improving Precision Hearing Healthcare Delivery

New Fellows to Be Inducted

The New Fellows Ceremony followed by the reception with Triological Fellows is scheduled on Thursday, April 23, 2026, from 7:00 am to 8:15 am in Room 106ABC

Alexander G. Bien, MD

Selena E. Briggs, MD PhD MBA FACS

Raewyn G. Campbell, MD

Matthew L. Carlson, MD

Brianna K. Crawley, MD

Shumon I. Dhar, MD FACS

Susan D. Emmett, MD MPH

Satish Govindaraj, MD FACS

Jonathan B. Ida, MD FACS MA

Noel Jabbour, MD

Anita S. Jeyakumar, MD MS FACS FAAP

Gavriel D. Kohlberg, MD

Antonia E. Lagos Villaseca, MD

Matthew K. Lee, MD

Michael Z. Lerner, MD

R. Jun Lin, MD FRCSC MSc

Lyndsay L. Madden, DO FACS

Patrick O. McGarey, MD

Mark M. Mims, MD

Jin Young Min, MD PhD

Samuel L. Oyer, MD

Aaron N. Pearlman, MD FACS

Harold S. Pine, MD

Ryan A. Rimmer, MD

Caroline M. Schlocker, MD

Matthew Shew, MD

Amar C. Suryadevara, MD

Mark S. Swanson, MD

Samantha H.L. Tam, MD MPH

Dennis M. Tang, MD

Andrew G. Tritter, MD

Michael T. Yim, MD FACS

Harris P. Mosher Award

Given in recognition of the excellence of the Candidate's Thesis in Clinical Research. This honor was created to perpetuate the ideals of the great teacher for whom it was named and to bestow upn a worthy recipient the responsibility of furthering the highest standards of perfection in the study, teaching and practice of Otolaryngology.

Harris P. Mosher • 1867-1954

Highly respected, feared, and revered by his students, Dr. Mosher attended Harvard College and the Harvard Medical School, receiving his MD degree in 1896. There were no formal residency training programs then, so he sought training at the best ear, nose and throat centers in Germany, namely, with Jansen in Berlin and Grunert in Halle. After returning home, Mosher became an instructor in the department of anatomy at the Massachusetts Eye and Ear Infirmary and the Harvard Medical School.

He started the first course in sinus anatomy in the United States. This course was to become famous for its content and its progenitor and was appropriately named "Mosher's course". It endured for 35 years.

In 1919 he was appointed Professor of Laryngology at the Harvard Medical School and Chief of Laryngology at the Massachusetts General Hospital. In 1932 he was appointed to the Walter Augustus LaCompte Chair of Otology at Harvard and at age 66 became the second individual to hold two chairs at Harvard. Dr. Mosher was a member and became the president of all of our prominent national otolaryngology societies. When the American Board of Otolaryngology was formed in 1924 (the second certification board after ophthalmology in 1917*) he was chosen as its president and served in that capacity for 25 years. He was the recipient of the Semon Medal from the Royal Society of Medicine of London, the Gold Medal from the American Laryngological Association, and a service medal from the American Academy of Ophthalmology and Otolaryngology. He is known for his intranasal ethmoidectomy technique and his method for the removal of safety pins swallowed by babies, for which he was given a citation by the American College of Surgeons in 1934.

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*Deliberations and progress in our specialty were interrupted by World War I. Also, there was growing resistance to authority to regulate specialty education and training--in essence, the transition from apprenticeships to formal training programs as we know them today. The need was urgent because some form of evaluation of physicians was needed to supplement the general licensing regulations of the various states' Boards of Public Health.

Mosher Award Recipients

1957 . . . . . Harold G. Tabb, MD
1958 . . . . . Jack V.D. Hough, MD
. . . . . John A. Kirchner, MD
1959 . . . . . Maurice Schiff, MD
1960 . . . . . Walter A. Petryshyn, MD
. . . . . Alex Weisskopf, MD
1961 . . . . . Godfrey E. Arnold, MD
1962 . . . . . Wesley E. Compere, MD
1963 . . . . . Edward G. McCoy, MD
. . . . . William W. Montgomery, MD
. . . . . Henry J. Rubin, MD
1964 . . . . . Hugh O. Barber, MD
1965 . . . . . Brian F. McCabe, MD
1966 . . . . . No award
1967 . . . . . Frank N. Ritter, MD
. . . . . George T. Singleton, MD
1968 . . . . . Leslie Bernstein, MD
1969 . . . . . David A. Hilding, MD
. . . . . Lindsay L. Pratt, MD
1970 . . . . . Herbert H. Dedo, MD
1971 . . . . . Byron J. Bailey, MD
1972 . . . . . Hugh F. Biller, MD
1973 . . . . . Mark May, MD
. . . . . Andrew W. Miglets, MD
1974 . . . . . Robert W. Cantrell, MD
1975 . . . . . Donald G. Sessions, MD
1976 . . . . . No award
1977 . . . . . Donald B. Hawkins, MD
1978 . . . . . Robert A. Jahrsdoerfer, MD
1979 . . . . . Arnold M. Noyek, MD
1980 . . . . . H. Bryan Neel III, MD PhD
1981 . . . . . Bruce A. Feldman, MD
1982 . . . . . Roger L. Crumley, MD
1983 . . . . . S. George Lesinski, MD
1984 . . . . . Irwin F. Stewart, MD
1985 . . . . . Frank E. Lucente, MD
1986 . . . . . Harold C. Pillsbury, MD
1987 . . . . . James N. Thompson, MD
1988 . . . . . Thomas V. McCaffrey, MD
1989 . . . . . Arnold Komisar, MD
. . . . . Bernard R. Marsh, MD
1990 . . . . . Patrick J. Gullane, MD
1991 . . . . . Robin T. Cotton, MD
1992 . . . . . Myles L. Pensak, MD
1993 . . . . . Ronald A. Hoffman, MD
1994 . . . . . Robert Sofferman, MD
1995 . . . . . Fred Herzon, MD
1996 . . . . . Stimson P. Schantz, MD
1997 . . . . . Scott C. Manning, MD
1998 . . . . . No award
1999 . . . . . Dennis S. Poe, MD
2000 . . . . . Lyon L. Gleich, MD
. . . . . David J. Terris, MD
2001 . . . . . Joseph G. Feghali, MD
2002 . . . . . Wendell G. Yarbrough, MD
2003 . . . . . Edwin M. Monsell, MD PhD
2004 . . . . . Craig A. Buchman, MD
2005 . . . . . Francisco J. Civantos, MD
2006 . . . . . Henry T. Hoffman, MD
. . . . . Dana M. Thompson, MD
2007 . . . . . Erin D. Wright, MD
2008 . . . . . Robert C. O'Reilly, MD
2009 . . . . . Steven J. Wang, MD
2010 . . . . . Adrian L. James, MD
2011 . . . . . Robert L. Ferris, MD PhD
2012 . . . . . Nira A. Goldstein, MD MPH
. . . . . Judith E.C. Lieu, MD MSPH
2013 . . . . . Joseph M. Chen, MD
. . . . . Adam M. Zanation, MD
2014 . . . . . George B. Wanna, MD FACS
2015 . . . . . Lisa E. Ishii, MD MHS
2016 . . . . . Giovana R. Thomas, MD FACS
2017 . . . . . Jonathan M. Bock, MD
2018 . . . . . Aaron C. Moberly, MD
2019 . . . . . David P. Goldstein, MD MSc FACS
2020 . . . . . Farrel J. Buchinsky, MBChB FACS
2021 . . . . . Kevin D. Brown, MD PhD
2022 . . . . . Theodore R. McRackan, MD
2023 . . . . . Brianne B. Roby, MD
2024 . . . . . Keith A. Chadwick, MD MS
2025 . . . . . Amal Isaiah, MD PhD
2026 . . . . . Gavriel D. Kohlberg, MD

Edmund Prince Fowler Award

Given in recognition of the excellence of the Candidate's Thesis in Basic Research. This honor was created to perpetuate the ideals of the great teacher for whom it was named and to bestow upon a worthy recipient the responsibility of furthering the highest standards of perfection in the study, teaching and practice of Otolaryngology.

Edmund Prince Fowler • 1872-1966

It says something about the intellectual wealth of the Triological Society that Edmund Prince Fowler Sr., MD, succeeded Max Goldstein, MD, as president in 1932. Both were giants in otology, prolific authors and advocates for the hard of hearing. In honor of Dr. Fowler's contributions to otolaryngology, the Society established The Edmund Prince Fowler Award in 1971, given each year for the best thesis in basic research.

After earning his MD from Columbia University, Dr. Fowler joined the Manhattan Eye and Ear Hospital and became a clinical professor at Columbia University in 1933. He was a decorated colonel of World War I. He was president of the American Otological Society in 1937, recipient of the first Award of Merit from that society in 1952 and founder of the first hearing center in the United States (in New York City). To the legacy of the prodigious researcher and "Dean of Audiology", as he was called, we attribute the invention of the modern clinical audiometer. He tested many patients and soon became aware of the fact that some patients with severe or unilateral losses had suprathreshold hearing values, a condition he coined as "recruitment". This clinical finding resulted in the Alternate Binaural Loudness Balance test, the first to separate cochlear from retrocochlear losses.

In his address to the sections in January 1932, Dr. Fowler described specific recommendations for hearing tests on schoolchildren. He also asked his colleagues to be thoughtful: "Let us not forget to treat the patient as a sensitive human being," he said, "and aid him in surmounting the drawbacks and psychological reactions to his disability."

At the 38th Annual Meeting in Atlantic City, NJ, in 1932, Dr. Fowler shared the spotlight with Edward B. Dench, MD, first president of the Triological, then 72 years old. (Dr. Dench had been named Honorary President of the Society in 1931 until his death in 1936.) At the meeting, George Richards, MD, editor of the Transactions, outlined a list of guidelines for submissions. During the same meeting the council approved a resolution supporting the ABO and its work in raising educational standards in the specialty as part of an effort to stem the tide of proposals for examinations for specialists by each of the 48 states.

Dr. Fowler died in 1966, six months after the last of his 113 papers was presented (at 94 years of age!) at a meeting of the American Otological Society.

Fowler Award Recipients

1971 . . . . . Richard R. Gacek, MD
1972 . . . . . Duane W. Nagle, MD
. . . . . Raimund G. Rueger, MD
1973 . . . . . Robert J. Ruben, MD
1974 . . . . . Robert I. Kohut, MD
. . . . . Willard B. Moran, Jr., MD
. . . . . Gershon J. Spector, MD
1975 . . . . . Gregory J. Matz, MD
. . . . . Richard L. Vorhees, MD
1976 . . . . . Shokri Radpour, MD
1977 . . . . . LaVonne Bergstrom, MD
1978 . . . . . Diran O. Mikaelian, MD
1979 . . . . . William L. Meyerhoff, MD
. . . . . Clarence T. Sasaki, MD
1980 . . . . . Robert A. Schindler, MD
1981 . . . . . Don E. Gebhart, MD
1982 . . . . . Michael E. Johns, MD
1983 . . . . . Bruce W. Jafek, MD
1984 . . . . . David E. Schuller, MD
1985 . . . . . Marvin P. Fried, MD
1986 . . . . . Michael Friedman, MD
1987 . . . . . Stanley M. Shapshay, MD
1988 . . . . . Timothy T.K. Jung, MD
1989 . . . . . Robert T. Sataloff, MD
1990 . . . . . Soly Baredes, MD
1991 . . . . . Douglas E. Mattox, MD
1992 . . . . . Vanessa G. Schweitzer, MD
1993 . . . . . Ralph F. Wetmore, MD
1994 . . . . . Paul Lambert, MD
1995 . . . . . Michael Pratt, MD
1996 . . . . . P. Ashley Wackym, MD
1997 . . . . . Allen Hillel, MD
. . . . . D. Bradley Welling, MD
1998 . . . . . No award
1999 . . . . . Debra L. Tucci, MD
2000 . . . . . Rick A. Friedman, MD
. . . . . Michael D. Seidman, MD
2001 . . . . . J. Christopher Post, MD
2002 . . . . . Richard D. Kopke, MD
2003 . . . . . Chung-Ku Rhee, MD PhD
2004 . . . . . Shawn D. Newlands, MD
2005 . . . . . Steven W. Cheung, MD
2006 . . . . . Alan G. Micco, MD
2007 . . . . . Bradley W. Kesser, MD
2008 . . . . . Eric M. Genden, MD
. . . . . Marlan R. Hansen, MD
2009 . . . . . Ravindhra G. Elluru, MD PhD
. . . . . Andrew P. Lane, MD
2010 . . . . . Philip D. Littlefield, MD
2011 . . . . . Stacey L. Halum, MD
2012 . . . . . Quyen T. Nguyen, MD PhD
2013 . . . . . Subinoy Das, MD FACS
2014 . . . . . Hinrich Staecker, MD PhD
2015 . . . . . Bradford A. Woodworth, MD
2016 . . . . . Gregory A. Grillone, MD FACS
2017 . . . . . Syed F. Ahsan, MD FACS
2018 . . . . . Murugappan Ramanathan, MD
2019 . . . . . Amber U. Luong, MD PhD FACS
2020 . . . . . Alexander Gelbard, MD
2021 . . . . . Adam J. Luginbuhl, MD
2022 . . . . . Steven J. Eliades, MD PhD
2023 . . . . . Thomas J. Ow, MD MS FACS
2024 . . . . . Devyani Lal, MD MBBS MS
2025 . . . . . Lauren T. Roland, MD MSCI
2026 . . . . . Jin Young Min, MD PhD

Maureen Hannley Award

Given in recognition of the excellence of the Candidate's Thesis in an Alternative Science category. This honor was created in 2016 to honor Dr. Hannley's contributions and legacy to the Triological Society. She was the Society's Thesis and Research Grants consultant from 2006 to 2015. Dr. Hannley assisted young researchers and mentored candidates for Triological Fellowship, assisting them with preparation of their theses.

Maureen Hannley • 1942-2015

Maureen Hannley, PhD, was a dedicated advisor and respected for her commitment to advance the mission of the Society to attract the best minds in otolaryngology. Her tireless work assured that the quality of the contributions of the candidates reflected the honor and prestige of membership. As the diversity of the academic and scientific work of the otolaryngology community evolved, Dr. Hannley acknowledged the importance of alternative scholastic contributions to our Society that fall outside the traditional basic and clinical research paradigms. This award is annually bestowed upon the candidate whose thesis represents an outstanding contribution in the alternative science category of Technology/Procedure Development, Otolaryngology Status and Trends, Health Services Research, or Historical Perspectives.

Maureen Hannley, PhD received her MA from the University of Arizona and a PhD in Hearing Science and Biocommunication from Baylor College of Medicine. Throughout her academic and research career, she held appointments at Louisiana State University, Kresge Hearing Research Laboratory, Stanford University School of Medicine, Duke University, Medical College of Wisconsin and, most recently, was a Professor in the Department of Otolaryngology at University of Arizona. Dr. Hannley held many administrative appointments, including that of Chief Research Officer at the AAO-HNSF and Health Services Administrator and Director of the Hearing Research Program at NIDCD. She lent her expertise to numerous advisory boards including NIH, ARO, SUO, and Boys Town National Research Hospital, to name a few. She was elected as an Honorary Triological Society Fellow in 2009.

Hannley Award Recipients

2016 . . . . . Paul Hong, MD FRCSC
2017 . . . . . Kofi D. Boahene, MD FACS
2018 . . . . . James C. Denneny, MD FACS
2019 . . . . . Alexander J. Langerman, MD FACS
2020 . . . . . Jennifer M. Lavin, MD
2021 . . . . . David W. Jang, MD
2022 . . . . . Antoine Eskander, MD FRCSC
2023 . . . . . Jose L. Mattos, MD, MPH
2024 . . . . . Francis X. Creighton, MD
2025 . . . . . Deepa Shivnani, MBBS DNB ENT
2026 . . . . . Susan D. Emmett, MD MPH

Honorable Mention for Basic Science Award

Given in recognition of the excellence of the Candidate's Thesis in Basic Science.

1998 . . . . . Perry M. Santos, MD, MS
1999 . . . . . Saumil N. Merchant, MD
2000 . . . . . Jennifer R. Grandis, MD
2001 . . . . . William H. Lindsey, MD
2002 . . . . . No Award
2003 . . . . . Sujana S. Chandrasekhar, MD
2004 . . . . . Joseph Sniezek, MD
2005 . . . . . Cliff A. Megerian, MD
. . . . . Brian Nussenbaum, MD
2006 . . . . . Eben Rosenthal, MD
. . . . . Richard L. Scher, MD
2007 . . . . . Joseph E. Kerschner, MD
. . . . . J. Paul Moxham, MD
2008 . . . . . No Award
2009 . . . . . No Award
2010 . . . . . Seth H. Dailey, MD
2011 . . . . . Norman D. Hogikyan, MD FACS
. . . . . Maie A. St. John, MD
2012 . . . . . Adrien Eshraghi, MD, MSC
2013 . . . . . John D. Macias, MD FACS
2014 . . . . . Kenneth H. Lee, MD PhD
2015 . . . . . Eunice Y. Chen, MD PhD
. . . . . Ian N. Jacobs, MD FACS
2016 . . . . . Lamont R.D. Jones, MD
2017 . . . . . Devraj Basu, MD PhD FACS
2018 . . . . . Alexander T. Hillel, MD
2019 . . . . . Ravi N. Samy, MD FACS
2020 . . . . . Ronna Hertzano, MD PhD
2021 . . . . . David G. Lott, MD
2022 . . . . . Trung N. Le, MD PhD
2023 . . . . . Konstantina M. Stankovic, MD PhD
2024 . . . . . Joshua M. Levy, MD MPH MS
2025 . . . . . Milan R. Amin, MD
2026 . . . . . Alexander G. Bien, MD
. . . . . Anita S. Jeyakumar, MD MS FACS FAAP

Honorable Mention for Clinical Research Award

Given in recognition of the excellence of the Candidate's Thesis in Clinical Research.

1998 . . . . . Kenneth M. Grundfast, MD
1999 . . . . . Randal Paniello, MD
2000 . . . . . Seth I. Rosenberg, MD
2001 . . . . . Mark S. Courey, MD
2002 . . . . . Christopher J. Linstrom, MD
2003 . . . . . Phillip K. Pellitteri, DO
. . . . . James C. Alex, MD
2004 . . . . . Donald T. Weed, MD
2005 . . . . . George T. Hashisaki, MD
. . . . . Judith C. McCaffrey, MD
2006 . . . . . Neil Bhattacharyya, MD
2007 . . . . . Joel A. Ernster, MD
. . . . . Natasha Mirza, MD
2008 . . . . . Marshall E. Smith, MD
2009 . . . . . Stephen F. Conley, MD FACS
. . . . . David R. Friedland, MD PhD
2010 . . . . . Peter C. Belafsky, MD PhD
. . . . . Seth M. Cohen, MD MPH
. . . . . Jeffrey H. Spiegel, MD
2011 . . . . . Carol R. Bradford, MD FACS
. . . . . Gregory J. Wiet, MD FACS
2012 . . . . . Bruce H. Haughey, MBChB FACS
2013 . . . . . Amy Y. Chen, MD FACS
. . . . . Sam J. Daniel, MD MSC
. . . . . Tanya K. Meyer, MD BS
2014 . . . . . Andrew R. Scott, MD FACS
2015 . . . . . Oliver F. Adunka, MD
. . . . . Hamid R. Djalilian, MD
. . . . . Brett A. Miles, MD DDS FACS
2016 . . . . . No Award
2017 . . . . . Daniel H. Coelho, MD FACS
2018 . . . . . Paul C. Bryson, MD FACS
2019 . . . . . Hadi Seikaly, MD
2020 . . . . . Reena Dhanda Patil, MD MBA
2021 . . . . . Cecelia E. Schmalbach, MD FACS
2022 . . . . . Karla D. O'Dell, MD
2023 . . . . . Jennifer A. Villwock, MD
2024 . . . . . Adele K. Evans, MD
2025 . . . . . Stephen R. Chorney, MD MPH
2026 . . . . . Matthew L. Carlson, MD
. . . . . R. Jun Lin, MD FRCSC MSc

Honorable Mention Award

Given in recognition of the excellence of the Candidate's Thesis.

1982 . . . . . Joseph B. Nadol Jr., MD
1983 . . . . . No award
1984 . . . . . No award
1985 . . . . . George P. Burns, MD
. . . . . Wayne F. Larrabee Jr., MD
. . . . . Richard T. Miyamoto, MD
. . . . . Leonard P. Rybak, MD
1986 . . . . . Paul J. Donald, MD
. . . . . Jack L. Gluckman, MD
. . . . . Jeffery P. Harris, MD
1987 . . . . . Frederick M.S. McConnell, MD
1988 . . . . . C. Gary Jackson, MD
1989 . . . . . Samuel R. Fisher, MD
. . . . . Joan T. Zajtchuk, MD
1990 . . . . . David M. Barrs, MD
. . . . . James A. Koufman, MD
1991 . . . . . Gary L. Schechter, MD
1992 . . . . . Lawrence P.A. Burgess, MD
. . . . . William W. Shockley, MD
1993 . . . . . C. Ron Canon, MD
. . . . . Gerald E. Merwin, MD (posthumous)
. . . . . James L. Netterville, MD
. . . . . K. Thomas Robbins, MD
1994 . . . . . Arthur S. Hengerer, MD
. . . . . Larry A. Hoover, MD
. . . . . Richard W. Waguespack, MD
. . . . . Steven M. Zeitels, MD
1995 . . . . . Kevin A. Shumrick, MD
. . . . . Robert C. Wang, MD
1996 . . . . . Author Unknown
1997 . . . . . George S. Goding Jr., MD
. . . . . Joseph Haddad Jr., MD
. . . . . Sigsbee W. Duck, MD

With Distinction Award

Given in recognition of the excellence of the Candidate's Thesis.

2011 . . . . . Julie L. Wei, MD
2012 . . . . . Daniel D. Lydiatt, DDS MD FACS
2013 . . . . . Joseph A. Brennan, MD FACS
2014 . . . . . Howard W. Francis, MD
2015 . . . . . Wade W. Chien, MD
. . . . . Noam A. Cohen, MD PhD
2016 . . . . . No Award
2017 . . . . . Matthew L. Bush, MD FACS
. . . . . David Goldenberg, MD FACS
2018 . . . . . David J. Eisenman, MD
. . . . . Jose P. Zevallos, MD MPH FACS
2019 . . . . . Mark J. Jameson, MD PhD FACS
2020 . . . . . Christopher G. Tang, MD
2021 . . . . . Maria V. Suurna, MD FACS
2022 . . . . . Joseph M. Curry, MD FACS
. . . . . Charles J. Limb, MD
2023 . . . . . Taher S. Valika, MD FACS
2024 . . . . . Michael B. Gluth, MD FACS
. . . . . M. Elise Graham, MD FRCSC
. . . . . Robert S. Hong, MD PhD
. . . . . Matthew R. Naunheim, MD MBA
. . . . . Jonathan R. Skirko, MD MHPA MPH
2025 . . . . . Mursalin M. Anis, MD PhD
. . . . . John P. Giliberto, MD
. . . . . Denis C. Lafreniere, MD MS
. . . . . Mirabelle B. Sajisevi, MD
. . . . . Seckin O. Ulualp, MD FACS
2026 . . . . . Shumon I. Dhar, MD FACS
. . . . . Matthew Shew, MD

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	Middle ● Lamont R. Jones, MD MBA FACS
	Southern ● J. Madison Clark II, MD FACS
	Western ● Steven J. Wang, MD
Thesis Chair	Daniel G. Deschler, MD FACS
Laryngoscope Editor-in-Chief	Samuel H. Selesnick, MD FACS
Laryngoscope Investigative Otolaryngology Editor-in-Chief	Romaine F. Johnson, MD MPH
ENTtoday Physician Editor	Robin W. Lindsay, MD BA

The Laryngoscope

Editor-in-Chief	Samuel H. Selesnick, MD FACS
Managing Editor	Kylie Bade thelaryngoscope@gmail.com
Website	www.laryngoscope.com

ENTtoday

Physician Editor	Robin W. Lindsay, MD BA enttodaychief@gmail.com
Editor	Lisa Casinger lcasinger@wiley.com
Website	www.enttoday.org

Laryngoscope Investigative Otolaryngology

Editor-in-Chief	Romaine F. Johnson, MD MPH Romaine.Johnson@UTSouthwestern.edu
Managing Editor	Emily Kane investigativeotolaryngology@gmail.com
Website	www.investigativeoto.com

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Coordinators	Colleen Finnerman 630-365-7574 colleen@triological.org
	Angel Alcazar 630-339-0393 angel@triological.org
	Beth Slovinski 630-365-7576 beth@triological.org
Website	www.triological.org

128th Annual Meeting at COSM
Thursday - Friday, April 23-24, 2026 | Phoenix, AZ

THURSDAY, APRIL 23, 2026

Room 106ABC

7:00 **Business Meeting / New Fellows Ceremony and Reception**

8:15 **Welcome by President Alan G. Micco, MD FACS**

8:25 **Introduction of Presidential Citations and Guests of Honor**
Citation Awardees
David B. Conley, MD FACS
Pamela Fiebig, AuD
David S. Haynes, MD MMHC

Guest of Honor
Elizabeth H.Y. Toh, MD MBA

8:45 **Presidential Address**
Nemo Resideo
Alan G. Micco, MD FACS

9:05 **Introduction of Joseph H. Ogura, MD Annual Lecturer**
Alan G. Micco, MD FACS

JOSEPH H. OGURA, MD, LECTURER
What We Give Next: Leadership, Humanity, and the Prologue to Medicine's Future
Cliff A. Megerian, MD FACS - Chief Executive Officer, University Hospitals Health System; Jane and Henry Meyer Chief Executive Officer, Distinguished Chair Professor, Otolaryngology - Head & Neck Surgery, Case Western Reserve University School of Medicine

9:45 **Introduction of 2026 Thesis Award Presentations**
HARRIS P. MOSHER AWARD
Perceptual Effects of Delayed Speech Enhancement: Influence of Delay, Gain, and Listening Environment
Gavriel D. Kohlberg, MD

Objectives: Background noise remains the primary obstacle to hearing aid satisfaction, with many users abandoning devices due to poor performance in noisy settings. While modern speech enhancement can improve signal clarity, it introduces processing delay between the original sound and the enhanced output. In open fit hearing aids - now the dominant fitting style - this delay causes the direct and processed signals to mix at the eardrum, creating audible artifacts. When the enhanced signal arrives late, it is out of sync with the direct path, producing a hollow, echo-tinged sound that can cancel parts of speech and, as delay grows, negate - and even reverse - the intended gains in intelligibility. To provide practical guidance, this study quantified delay tolerance and its perceptual consequences across everyday acoustic settings. The objectives were: (1) quantify how acceptable delay changes from Quiet to noise, (2) test whether enhancement magnitude alters delay tolerance, and (3) define a clinically meaningful acceptability threshold - the longest delay at which enhanced

speech remains preferred - to guide programming and algorithm design. Hypotheses were that benefits would be greatest at minimal delay and diminish as delay increases; that noise would mask delay artifacts, increasing tolerance relative to Quiet; and that the preference based threshold would align with the delay at which net intelligibility benefit approaches zero. Study Type: Clinical research; prospective repeated measures laboratory study. Methods: Fourteen normal hearing adults listened to IEEE/Harvard sentences in Quiet, −1 dB, and −3 dB signal-to-noise ratio (SNR) with multitalker babble under simulated open fit acoustics. Enhancement of either +0.5 or +1.0 dB was implemented by adding a delayed, slightly louder copy of the original clean speech to the noisy mixture after 0–64 milliseconds (ms) delays. Outcomes were: (1) speech understanding (keyword accuracy; percentage point change vs SNR matched baseline), (2) subjective ratings of clarity, naturalness, sound quality, and listening effort, and (3) an acceptability threshold - the longest delay at which the enhanced signal was still preferred. Results: In noise, enhancement yielded substantial gains at short delays, which eroded and reversed with increasing latency; for example at −3 dB SNR with +1.0 dB enhancement, accuracy improved by >20 percentage points at 0 ms, approached zero by 32 ms, and fell below baseline by 64 ms. In Quiet, accuracy remained near ceiling, but naturalness and quality declined with delay, indicating essentially zero tolerance for latency despite stable intelligibility. Acceptability thresholds captured this divergence: medians were 0.5 ms in Quiet and ~17–20 ms in noise, with most listeners accepting delays of ~20–30 ms; thresholds closely matched the delay where net intelligibility benefit disappeared. Conclusions: Delay tolerance depends strongly on acoustic setting under open fit–like listening. In Quiet, acceptable delay is effectively 0 ms; in everyday noise, most listeners tolerate approximately 20–30 ms - a bounded window where enhancement remains both beneficial and acceptable. The preference based threshold aligns subjective acceptance with objective performance, providing clinically actionable latency targets and clear benchmarks for environment aware enhancement algorithms.

EDMUND PRINCE FOWLER AWARD
Nongastric H,K-ATPase in Type 2 Inflammation Associated Airway Acidification: Implications of Chronic Rhinosinusitis with Nasal Polyps
Jin Young Min, MD PhD

Objectives: We hypothesized that nongastric H,K-ATPase (ngH,K-ATPase), encoded by ATP12A, contributes to airway acidification and type 2 inflammation in chronic rhinosinusitis with nasal polyps (CRSwNP), and that targeting this pump may have therapeutic potential. This study aimed to determine whether airway surface liquid (ASL) pH is altered in CRSwNP and to investigate the role of ngH,K-ATPase in IL-13–driven inflammation. Methods: Nasal secretions from the middle meatus of CRSwNP patients and controls were collected, and pH was measured using a micro-pH meter. Tissue levels of type 2 inflammatory mediators (IL-4, IL-5, IL-13, and eosinophil cationic protein) were analyzed. ATP12A mRNA expression was evaluated in nasal tissues and in human nasal epithelial cells (HNECs) cultured at an air-liquid interface with or without IL-13 stimulation. ASL pH and intracellular pH were measured using fluorescent indicators. The effects of IL-13 and inhibitors—including omeprazole (PPI), filgotinib (JAK inhibitor), and AS1517499 (STAT6 inhibitor)—were assessed in HNECs and BEAS-2B cells. Clinical outcomes were compared between CRSwNP patients using PPIs and non-users. Results: ATP12A expression was detected in nasal tissues and HNECs and was significantly upregulated by IL-13. Nasal secretions from CRSwNP patients were more acidic than controls (pH 6.16 ± 0.54 vs 6.56 ± 0.28, $P < .01$) and inversely correlated with levels of type 2 inflammatory mediators. In vitro, IL-13 induced ASL acidification and intracellular alkalinization, both of which were significantly attenuated by omeprazole and IL-13 signaling inhibitors. Clinically, CRSwNP patients taking PPIs demonstrated improved postoperative SNOT-22 scores and lower Lund-Kennedy endoscopic scores. Conclusions: ngH,K-ATPase contributes to airway acidification and type 2 inflammation in CRSwNP. Inhibition of this pump, including with PPIs, may represent a potential therapeutic strategy.

MAUREEN HANNLEY ALTERNATIVE SCIENCE AWARD

Reimagining School Hearing Screening in Rural America: An Evidence Based Approach
Susan D. Emmett, MD MPH

Objectives: School-based health programs are the only source of preventive care for many rural children and are essential to identify childhood hearing loss in rural and underserved communities. However, school hearing screening is variably implemented, and loss to follow-up is a ubiquitous problem worldwide. This analysis provides evidence-based recommendations on who to screen, how to screen, and how to maximize follow-up, including evaluating accuracy of screening protocols. These data can inform school hearing screening standardization for rural and underserved regions globally. Study Type: Analysis of three prospective school-based studies conducted in rural Alaska. Design: The study sample includes a parallel, two-arm, cluster-randomized controlled trial conducted in kindergarten through 12th grade (2017-2019) (main trial); a parallel, two-arm, cluster-randomized controlled trial conducted in preschool children (2018-2019) (ancillary trial); and an observational prospective cohort study conducted in children aged 7 and older (2024-2025). Methods: All children across the studies underwent screening and a gold standard audiometric evaluation in participating schools, with screening accuracy assessed at the ear level. The cohort study focused on accuracy of 15 dB pure-tone screening, aligning with World Health Organization's 2021 revised hearing loss definition, released after the trials concluded. The two trials compared telehealth specialty referral to standard primary care referral. Cumulative incidence of follow-up was visualized across both trials using Kaplan Meier curves by trial arm using prespecified time points. Results: A total of 2,986 children aged 3 to 21 years comprised the combined study sample. Prevalence of ear and hearing conditions was consistently high across all grades. Middle ear disease was more common in younger grades, and prevalence of high frequency hearing loss rose in higher grades. There were high levels of missing data for all behavioral tests from preschool through 1st grade; therefore, screening accuracy was evaluated separately for preschool through 1st and 2nd through 12th grades. DPOAE plus tympanometry demonstrated the highest sensitivity and Youden's Index in preschool through 1st grade children. High frequency pure-tone 20 dB screen plus tympanometry demonstrated the highest sensitivity and Youden's Index for 2nd through 12th grade children. The pure-tone 15 dB screen was more sensitive than 20 dB but with an increase in false positives. Children randomized to specialty telehealth follow-up were 2.2 times more likely to receive follow-up than children randomized to standard primary care referral, and follow-up happened more than 12 times faster. Conclusions: These data indicate the need to screen all grades for hearing loss annually. Objective testing with DPOAE is preferred in preschool through 1st grade due to frequent missing data from behavioral testing in younger children. To detect noise-induced hearing loss in 2nd through 12th grades, pure-tone screening should include high frequency (6 kHz). Tympanometry should be incorporated into screening at all grade levels given the high prevalence of middle ear disease in rural and underserved populations. Pure-tone screening at 15 dB is feasible, but better screening technology is needed to avoid false positives. Telehealth represents a powerful solution to improve follow-up for rural and underserved children with limited access to specialty care.

10:25 Star Reviewer Acknowledgement
Samuel H. Selesnick, MD FACS

10:30 BREAK/VISIT EXHIBITORS/VISIT POSTERS

HEAD AND NECK SESSION A
ROOM 106ABC

PANEL

10:50 - 11:34

Radiofrequency Ablation for Thyroid Nodules
Moderator: Baran D. Sumer, MD
Panelists: Louise Davies, MD MS; David C. Shonka Jr., MD FACS; Ralph P. Tufano, MD MBA FACS; Scott W. Young, MD FSRU

Moderators:
David I. Kutler, MD FACS
Yash J. Patil, MD MPH

11:35 **Impact of GLP-1 Receptor Agonists on Mucosal Head and Neck Squamous Cell Carcinoma Risk Among Adults with Type 2 Diabetes** - Allen Khudaverdyan, BA; Christie Hung, BS; Lindsey Moses, MD; Umamaheswar Duvvuri, MD PhD

Educational Objective: At the conclusion of this presentation, the participants should be able to describe the association between prior GLP-1 receptor agonist exposure and incident mucosal HNSCC in adults with type II diabetes, utilizing a national EHR database.

Objectives: Assess whether prior GLP-1 receptor agonist (GLP-1RA) exposure is associated with incident mucosal HNSCC among adults with type 2 diabetes (T2D), using active drug class comparators. Study Design: Retrospective cohort analysis in a national multi-system EHR network (Epic Cosmos), 2010 - 2025. Methods: Adults (>/=18 y) with T2D and no mucosal HNSCC before 1/1/2021 were identified. Drug exposure was ascertained during 2010-2020; the outcome was first mucosal HNSCC diagnosis from 1/1/2021-7/30/2025. For each comparator class (metformin, SGLT2 inhibitors, DPP-4 inhibitors, thiazolidinediones [TZD], sulfonylureas [SU], insulin), GLP-1 users not on that comparator were contrasted with non-GLP-1 users on that comparator. Absolute risks and risk ratios (RR) with 95% CIs were computed; BMI-stratified analyses were prespecified. Results: Cohorts included 227,277-3,326,496 patients each (non-additive totals due to overlapping eligibility). Absolute risks were low across cohorts (~0.08-0.11%). Prior GLP-1RA exposure was associated with modestly lower mucosal HNSCC risk versus several active comparators: TZD (RR 0.74, 95% CI 0.65 - 0.85), SU (RR 0.77, 0.69 - 0.86), DPP-4i (RR 0.81, 0.7 - 0.91), and metformin (RR 0.84, 0.73 - 0.98); differences vs SGLT2i (RR 0.89, 0.78 - 1.01) and insulin (RR 0.91, 0.81 - 1.02) trended below unity but were not significant. BMI subgroup analyses showed no convincing effect modification; small event counts yielded wide CIs. Conclusions: In a large, real-world T2D cohort, prior GLP-1RA use was associated with a modestly reduced risk of incident mucosal HNSCC versus several non-GLP active comparators, with neutral trends versus SGLT2i and insulin. Although absolute risks are small, these findings provide early, site specific safety/benefit signals that complement trial data and broader oncology agnostic studies. Residual confounding (e.g., tobacco/alcohol), exposure misclassification, and limited power in BMI strata remain limitations; larger, longitudinal studies are warranted to validate signal magnitude and explore mechanisms.

11:41 **Early Analysis of HPV Vaccination Association with Oropharyngeal Cancer Diagnosis** - Christie Hung, BA; Allen Khudaverdyan, BA (Presenter); Colin Hill, MD; Lindsey Moses, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand if there is an early link between HPV vaccination and oropharyngeal cancer incidence.

Objectives: A recent study reported early evidence of the human papillomavirus vaccine (HPV) in preventing the development of several types of HPV-associated cancers, including head and neck cancer. We aim to determine if there is further evidence for an early link between HPV vaccination and decreased oropharyngeal cancer incidence. Study Design: Population-based, retrospective cross-sectional study using Epic Cosmos. Methods: To capture all patients eligible for vaccination between 2006-2018, patients currently aged 9-44 with documented charts between the years 2007-2024 were identified using the Epic Cosmos database. Patients were divided into two cohorts based on the presence or absence of documented HPV vaccination. Patients diagnosed with oropharyngeal cancer were identified using ICD-10 codes for base of tongue, tonsil, and oropharyngeal cancers (C01, C09, and C10). Results: 131,466,782 patients were identified who met inclusion criteria of which 20.5% had a documented HPV vaccination. Patients vaccinated for HPV (26,888,530) were at decreased odds for oropharyngeal cancer (odds ratio (OR) = 0.378 [95% CI: 0.338 - 0.422], 1.7 diagnosed with oropharyngeal cancer per 100,000 HPV vaccinated compared to 3.4 diagnosed per 100,000 non-HPV vaccinated). Females had a significantly higher documented HPV vaccination rate compared to males (23.5% compared to 17.2%, respectively, p<0.00001). Conclusions: Though there are many limitations to this study including an inability to separate HPV-related head and neck cancers from non-HPV-related cancers and the presence of other risk factors, the results suggest that HPV vaccination is associated with decreased odds of developing oropharyngeal cancer. Long-term follow-up studies will be needed to confirm this association and understand the magnitude of impact.

11:47 **Efficacy of Enhanced vs Standard Navigation to Promote Timely Radiotherapy for Head and Neck Cancer: Subgroup Analyses from the NDURE RCT** - Jonathan M. Hughes, BS; Emily Kistner-Griffin, PhD; Bhisham S. Chera, MD; Katherine R. Sterba, PhD MPH; Chanita Hughes-Halbert, PhD; Evan M. Graboyes, MD MPH

Educational Objective: At the conclusion of this presentation, the participants should be able to describe the effect of the NDURE intervention on improving the delivery of timely post-operative radiation therapy (PORT) relative to standard navigation across a broad array of demographic and clinical subgroups.

Objectives: NDURE is an enhanced navigation-based intervention that improved the initiation of timely, guideline-adherent postoperative radiation therapy (PORT) relative to standard navigation for patients with head and neck squamous cell carcinoma (HNSCC). This study seeks to examine the effect of NDURE on improving timely PORT among demographic and clinical subgroups. Study Design: Single-institution, parallel-group, randomized clinical trial (RCT). Methods: Adults with locally advanced HNSCC planning to undergo surgery and PORT were randomized to usual care (UC) or NDURE, a navigation-based intervention developed to address barriers to guideline-concordant PORT. The primary endpoint was initiation of timely PORT (< 6 weeks postoperatively) which was modeled using a generalized linear binary regression approach with an identity link in R version 4.4.1. Results: Among 145 patients (67 NDURE, 78 UC), NDURE improved the delivery of timely PORT relative to UC across demographic subgroups including age (< 65 vs >/=65), sex, race (White, Black), and marital status (partnered vs non-partnered) ($p < 0.05$ for all). In terms of clinical characteristics, NDURE improved timely PORT in oral cavity cancers, T and N categories, and free fap reconstruction (yes/no) ($p < 0.05$ for all). Among patients who experienced postoperative surgical complications, NDURE improved the likelihood of timely PORT by 39% (model-based initiation of timely PORT, 62% v 23%; risk difference, 39% [95% CI, 14 to 61]). For patients who experienced care fragmentation between the surgical and radiation facilities, NDURE improved the likelihood of timely PORT by 59% (model-based initiation of timely PORT, 84% v 26%; risk difference, 59% [95% CI, 40 to 74]). Conclusions: Within this RCT, NDURE improved the initiation of timely, guideline-adherent PORT across a broad array of demographic and clinical subgroups. These data support the broad efficacy for patients with HNSCC undergoing PORT and also highlight its potential to improve delivery of timely PORT even among patients with postoperative surgical complications and care fragmentation.

11:53 **Mohs Micrographic Surgery Versus Wide Local Excision for Early Stage (AJCC 0-II) Head and Neck Melanoma** - Anna K. Ardoin, BS; Srivatsa S. Vasudevan, MD MS; Kashmira Rodrigues, BA; Jason Pou, MD; Cherie-Ann O. Nathan, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to compare current evidence on oncologic outcomes of Mohs micrographic surgery and wide local excision for early stage head and neck melanoma.

Objectives: To compare oncologic outcomes of Mohs micrographic surgery (MMS) versus wide local excision (WLE) in the management of head and neck melanoma in situ (Mis) and stage (1-2) invasive melanoma. Study Design: Systematic review and meta-analysis. Methods: PubMed, Embase, ScienceDirect, and Web of Science were systematically searched to identify studies reporting outcomes of MMS and WLE for melanoma in situ and AJCC stage I-II melanoma. A random effects meta-analysis model was used to evaluate oncologic outcomes with further sensitivity analysis and meta regression. Results: Out of 24 included studies, 15,104 early-stage (AJCC 0-II) head and neck melanoma cases were analyzed, with a median age of 68.9 years and a male predominance (68.6%). MMS was associated with a significantly lower local recurrence rate for melanoma in situ (1.7%, 95% CI: 0.7-4.4) compared to WLE (6.3%, 95% CI: 3.4-11.4). Upstaging to invasive melanoma occurred less frequently with MMS (3.3%, 95% CI: 2.1-4.9) than with WLE (8.1%, 95% CI: 4.3-14.8). Secondary surgical excision was also less common following MMS (1.2%, 95% CI: 0.1-10.3) compared to WLE (9.7%, 95% CI: 3.0-27.0). Among stage I-II cases, MMS had a lower recurrence rate (1.3%, 95% CI: 0.3-4.6) than WLE (16.0%, 95% CI: 1.6-69.6). Conclusions: While our meta-analysis did not demonstrate a statistically significant advantage of MMS versus WLE, MMS still showed favorable trends in local control and in reducing upstaging and secondary procedures for early stage melanoma. This supports consideration of MMS in suitable candidates.

11:59 **WITHDRAWN**

12:05 **Predicting Loss of Independence after Head and Neck Cancer Surgery: A Novel Online Risk Calculator** - Alexa J. Kacin, MD; Felipe Porto, MD; Valentina Montanez Azcarate, MD; Annie Abruzzo, BS; Brett Campbell, MD; Scharukh Jalisi, MD, MBA

Educational Objective: At the conclusion of this presentation, the participants should be able to understand how to apply a predictive model for postoperative loss of independence (LOI) to guide individualized diagnostic and surgical strategies in geriatric patients undergoing head and neck cancer resections.

Objectives: To develop a predictive tool for postoperative LOI in geriatric patients undergoing head and neck cancer (HNC) resection. Study Design: Retrospective Cohort Study. Methods: We analyzed 2021-2023 ACS-NSQIP data for patients aged >/=75 years who underwent HNC surgery with preoperative and discharge functional status data. Patients underwent oncological resection for one of the following: laryngeal, oral cavity, salivary gland, sinonasal, cutaneous, pharyngeal, or other cancer. Demographic, clinical, and surgical variables were compared using chi-squared testing. Multivariate logistic regression identified predictors of postoperative LOI. Significant variables were used to develop a nomogram to estimate individual risk. The nomogram was incorporated into a risk calculator. Results: Of 2891 patients, 396 (13.6%) experienced postoperative LOI. On multivariable logistic regression analysis, age, BMI, diabetes, dementia, and ASA class were independent predictors of postoperative LOI. Cancer subsites associated with increased likelihood of LOI included larynx, oral cavity, and pharynx. Surgical interventions including craniofacial/oral cavity resection, free flap, hemi/partial glossectomy, laryngeal resection, neck dissection, regional flap, salivary gland excision and composite/total glossectomy were independent predictors of postoperative LOI. A nomogram including these variables was created to estimate the probability of postoperative LOI. The C-index of the model was 0.785 (95% CI [0.76-0.80]) suggesting good discriminative ability. The nomogram was incorporated into an online calculator. Conclusions:

This study provides a novel predictive tool to estimate the risk of postoperative LOI in geriatric patients undergoing HNC resection. Using patient specific preoperative factors, personalized surgical decision-making and counseling can be provided to patients.

12:11 Trends in Awareness of HPV Related Oropharyngeal Cancer: A Cross-Sectional Analysis - Francisco Javier Garraton Gutierrez, MD; Nicolle a. Cordero Virella, BS; Maria Fernanda Estevez Delgado, BS; Javier Antonio Vila Ortiz, BS; Sergio I. Perez Guerrero, BS; Shayanne A. Lajud Guerrero, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to evaluate temporal trends in public awareness of HPV related oropharyngeal cancer here and identify knowledge gaps that can inform targeted education and prevention strategies aimed at reducing HPV associated cancer disparities.

Objectives: Human papillomavirus (HPV) is a major cause of oropharyngeal cancer (OPC), yet population level awareness here remains poorly defined, despite persistent OPC incidence and health disparities. This study assesses changes in public knowledge of HPV and its link to OPC over a six year period. Study Design: Cross-sectional analysis. Methods: Two cross-sectional surveys: one in 2019 among otolaryngology clinic patients (n=204), and one in 2025 via digital platforms targeting the general population (n=347). Surveys evaluated awareness of HPV transmission, associated cancers, vaccine availability, and OPC specific risk factors. Descriptive and inferential analyses were performed. Results: OPC specific HPV awareness rose from 54% (2019) to 74.1% (2025). While 92.8% linked smoking to OPC, only 55.7% recognized excessive alcohol as a risk factor. Awareness of HPV related anal and penile cancers remained lower (63.6%, 61.3%). General HPV knowledge was high (99.1%), and 95.1% knew of vaccine availability. Higher education and vaccination predicted greater knowledge ($p<0.0001$); sex and age were not significant. Participants identified healthcare providers and academic institutions as the most trusted information sources. Conclusions: Awareness of HPV's role in OPC has improved here since 2019. A potential study limitation is survey selection bias. Nonetheless, gaps persist in understanding non-viral risk factors and non-cervical HPV cancers. Importantly, knowledge of HPV's association with male predominant cancers like OPC remains lower than for cervical cancer. Early OPC identification is often delayed due to lack of symptom recognition and limited screening methods. Leveraging trusted information sources and integrating OPC specific education into vaccine campaigns may improve outreach, early detection, and ultimately reduce HPV related cancer disparities.

12:17 Q&A

12:25 BREAK FOR LUNCH

PEDIATRIC OTOLARYNGOLOGY SESSION B
ROOM 106ABC

PANEL

1:15 - 1:59

Innovation and Evidence in Pediatric Head and Neck, Otology, and Sleep Medicine
Moderator: Sharon L. Cushing, MD BScH MSc
Panelists:
Innovations in Pediatric Head/Neck/Vascular Anomalies
John P. Dahl, MD FACS PhD MBA
Genetic Update in Pediatric Otology
Margaret A. Kenna, MD FACS
State of the Art in Pediatric Sleep Medicine
Seckin O. Ulualp, MD FACS

Moderators:
Steven L. Goudy, MD FACS
Jonathan R. Skirko, MD MHPA MPH

2:00 **Large Language Models for Frenulectomy Counseling: Accuracy, Readability, and Day to Day Consistency Over Two Months** - Shrey B. Shah, BA; Hetal Lad, BS; Shreeya R. Bahethi, BS; Sudeepti Vedula, MD; Brian Manzi, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to better understand the accuracy/comprehensiveness, readability, and variability of large language models (LLMs) in answering parent facing questions related to frenulectomy.

Objectives: Three popular LLMs were compared using single prompts and multiple consecutive question (MCQ) prompts over a two month period. Study Design: Prospective, repeated measures content audit with daily (single) and weekly (MCQ) prompts. Methods: Over a two month period, ChatGPT 5, Gemini 2.5 Flash, and Google Search AI were prompted and scored on a 12-point composite rubric (diagnostic assessment, preoperative counseling, procedure clarity, risk mitigation, postoperative care, implementation practicality, and source transparency). Readability metrics were Flesch Reading Ease (FRE) and Flesch Kincaid Grade Level (FKGL). LLM differences were compared with repeated measures ANOVA. Results: Over 2 months, mean scores for single prompts were 10.824 for Google Search AI, 10.368 for Gemini, and 9.96 for ChatGPT ($F=38.93$, $p<0.001$). Both Google Search AI ($p<0.001$) and Gemini ($p=0.0039$) had significantly higher composite scores than ChatGPT. Google Search AI (SD=0.312) had lower day to day variability compared to ChatGPT (SD=0.708) and Gemini (SD=0.828). Readability was significantly greater in Google Search AI and Gemini compared to ChatGPT (FRE 8.4, 17.2, 19.1; FKGL 19.0, 22.7, 26.9; $p<0.001$), with all models exceeding the recommended patient reading levels. For MCQ, there were no significant pairwise differences in the models' composite score or readability when compared to the daily single prompt. Conclusions: Both Google AI and Gemini outperformed ChatGPT in producing guideline aligned content, and MCQ did not improve composite performance. All models produced overly complex text, supporting clinician review and simplification before family use.

2:06 **Dynamics of BMI Progression after Adenotonsillectomy in Pediatric Obstructive Sleep Apnea Patients** - Kunal A. Koka, BS; Veenadhari Kollipara, BA; Kimberly Chan, MD; Allison Keane, MD; Neerav Goyal, MD MPH FACS; Gil Zoizner-Agar, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to describe the

time course of BMI changes and identify which baseline BMI categories are at risk for BMI progression following adenotonsillectomy in pediatric OSA patients.

Objectives: Adenotonsillectomy is the first-line surgical treatment for pediatric obstructive sleep apnea (OSA). However, body mass index (BMI) dynamics following adenotonsillectomy remains unclear. The aim of this study is to quantify the risk and timing of BMI category progression following adenotonsillectomy based on baseline BMI. Study Design: Retrospective cohort. Methods: The TriNetX database was queried for pediatric patients who underwent adenotonsillectomy for OSA between 2010-2023 with at least one year of follow-up. Control cohorts included patients who underwent adenotonsillectomy for tonsillitis or OSA patients managed without adenotonsillectomy. The cohorts were stratified into baseline BMI categories (underweight, normal weight, and overweight) and propensity score matched for age, sex, race, and ethnicity. Outcome was BMI progression, defined as movement to a higher BMI category from baseline, and measured at 1day-6months, 6months-1year, 1-3 year, or 3-5 year intervals after adenotonsillectomy. Results: We identified 19,605 adenotonsillectomy patients and 16,422 controls. Compared to controls, underweight and normal weight adenotonsillectomy for OSA patients showed the highest significant risk of BMI progression within 6 months after surgery (risk ratio (RR): 1.48 and RR: 1.60, respectively), with diminishing risk thereafter. Overweight adenotonsillectomy patients only had significant BMI progression within 6 months after adenotonsillectomy (RR: 1.82). Similar trends were not evident and results were inconsistently significant when comparing adenotonsillectomy for tonsillitis vs OSA patients. Conclusions: Adenotonsillectomy is associated with BMI category progression across all baseline BMIs with highest effect within the first 6 months after surgery. This study provides evidence for targeted counseling and weight management of pediatric patients following adenotonsillectomy.

2:12 Evaluation of Anti-Migraine Medications for Management of Pediatric Vestibular Migraines - Kyle K. Pandiscio, BS; Marco J. DiBlasi, BA; Alice Yun, BS; Hae-Young Kim, DrPH; Kate Mysak, CPNP; Jacob R. Brodsky, MD

Educational Objective: At the conclusion of this presentation, participants should be able to understand how pediatric vestibular migraines respond to different medications.

Objectives: To compare the efficacy and tolerability of medications used to treat pediatric vestibular migraines. Study Design: Retrospective cohort study. Methods: Patient charts were reviewed to identify those with Vestibular Migraine of Childhood (VMC), Probable VMC (pVMC), or Recurrent Vertigo of Childhood (RVC) per the 2021 Barany Society diagnostic criteria. Prophylactic medications included cyproheptadine, propranolol, topiramate, amitriptyline, nortriptyline, venlafaxine, and duloxetine. Abortive medications included triptans, meclizine, and nonsteroidal anti-inflammatory drugs (NSAIDs). Demographic information was recorded, and changes in headache and dizziness symptoms were classified as no improvement, minor improvement, major improvement, or complete resolution. Generalized Estimating Equations were used to compare the proportion of patients with at least major improvement for each medication. Results: 160 patients were included [mean (SD) age 12.8 (3.9) years; 70% female]. Among prophylactics, the proportion of patients who experienced at least major improvement was greatest for topiramate, with a significant difference relative to the lowest performer, cyproheptadine, for dizziness (67.6% vs. 37.5%, p=0.01) and headache (69.4% vs. 37.5%, p=0.01). Among abortive medications, triptans significantly outperformed meclizine in dizziness (40.0% vs. 12.5% p=0.04) and headache (42.7% vs. 5.6%, p=0.03) and outperformed NSAIDs in dizziness (40.0% vs. 11.5%, p=0.02). Age, sex, and history of anxiety, depression, or concussion did not influence treatment outcomes for any medication. Conclusions: For pediatric vestibular migraine prevention, topiramate showed superior improvement in both dizziness and headache with acceptable tolerability, while cyproheptadine was least effective. Triptans performed the best among abortive medications. This highlights topiramate as a potential first line prophylactic and supports triptans' efficacy in treating pediatric vestibular migraine attacks. Future

prospective, randomized studies are warranted to further validate these findings.

2:18 **How Common Is a Posterior Ankyloglossia in Children?** - Chinelo U. Eruchalu, BS; Abraham A. Kassem, BS; Ryan Dewan, BS; Ellen Piccillo, MD; Michele M. Carr, DDS MD PhD

Educational Objective: At the conclusion of this presentation, the participants should be able to describe the prevalence of posterior ankyloglossia in children and evaluate its clinical significance using the Coryllos classification.

Objectives: To determine the prevalence of posterior ankyloglossia using the Coryllos classification and to compare oral complaints between children with and without a history of lingual frenotomy. Study Design: Prospective observational study. Methods: Consecutive pediatric patients were recruited and evaluated for ankyloglossia in an otolaryngology clinic from June - August 2025. Each patient was assigned a Coryllos classification (types 1 - 4) based on physical examination findings. Data collected included age, sex, prior history of frenotomy, and oral clinical symptoms. Children who had undergone frenotomy versus those who had not were compared for oral symptoms. Results: In 245 pediatric patients (median age 6 years), posterior (type 3 - 4) ankyloglossia was identified in 89 (36%), representing 97% of all ankyloglossia cases and significantly more frequent than anterior types (2 90.8%0, Fisher p less than .01). No ankyloglossia was present in 153 (62%) children. Median age differed between those with and without prior frenotomy (4 vs 6 years, p=.03). Prior frenotomy was documented in 40 (16%) children. There was no sex difference between groups (male 25/39 [64%] vs female 116/205 [57%]; p=.49, OR = 1.37, 95% CI 0.67 - 2.79). Speech delay was more frequent among children with prior frenotomy (10/40 [25%] vs 25/205 [12%]; Fisher p=.05, OR = 2.40, 95% CI 1.05 - 5.50), while other oral complaints (feeding issues, mouth breathing, snoring, malocclusion) were not significantly different (p greater than .05). Conclusions: Posterior ankyloglossia via Coryllos classification was highly prevalent, identified in over one-third of children, suggesting that it is a normal variant. Although most oral symptoms did not differ by frenotomy status, speech delay was significantly associated with previous frenotomy.

2:24 **Impact of Social Determinants of Health on Treatment and Clinical Outcomes in Pediatric Lymphatic Malformations** - JB Eyring, BS; Brandon M. Hemeyer, BS; Maha Alsomali, MD; J. Fredrik Grimmer, MD; Reema Padia, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to describe how census tract level social determinants of health affect treatment modality and functional outcomes in pediatric lymphatic malformations and identify strategies to promote more equitable access to minimally invasive care.

Objectives: To evaluate the relationship between census tract level social determinants of health (SDOH) and clinical outcomes including sclerotherapy, surgery, and dysphagia among pediatric patients with lymphatic malformations (LMs). Study Design: Retrospective cohort study. Methods: Patients aged 0 - 18 years diagnosed with LMs at two tertiary children's hospitals between January 2014 and December 2024 were included. Outcomes were treatment type (sclerotherapy vs. surgery) and dysphagia. Census tract level predictors included median household income, educational attainment, racial/ethnic composition, and distance to the nearest pediatric otolaryngologist. Associations were assessed using chi-square, t-tests, Fisher's exact, and logistic regression. Results: A total of 176 patients (mean age 4.7 years) met inclusion criteria; 69 (39.2%) underwent surgery, 88 (50.0%) received sclerotherapy, and 13 (7.4%) had dysphagia. Dysphagia was significantly associated with lower income, greater Black representation, lower educational attainment, and shorter distance to pediatric otolaryngologists (all $p<0.05$). Sclerotherapy patients resided in tracts with lower education and higher Hispanic representation ($p<0.05$) but did not differ by income, gender, age, or distance. Surgical patients were from higher-income tracts ($p<0.01$) but were otherwise similar across demographic variables. Conclusions: Neighborhood level socioeconomic and demographic characteristics were significantly associated with

treatment modality and dysphagia in children with LMs. These findings highlight community level inequities that may influence disease presentation, access to minimally invasive care, and overall clinical outcomes.

2:30 Outcomes of Hemi Versus Total Thyroidectomy in Pediatric Low Risk Papillary Thyroid Cancer: A Systematic Review - Emma Finnegan; Muhammad Suleiman, MBBCh; Matteo Lazzeroni, MD; Michelle Azevedo, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand current guideline recommendations for surgical management of pediatric low-risk thyroid cancer, summarize evidence comparing hemithyroidectomy and total thyroidectomy outcomes and recognize the need for further research to guide evidence-based practice.

Objectives: Papillary thyroid cancer (PTC) is the most common endocrine malignancy in children, typically demonstrating an excellent prognosis with survival rates exceeding 95%. Historically total thyroidectomy (TT) has been recommended for most pediatric cases. However, recent shifts in guidelines, including those from the European Thyroid Association, suggest hemithyroidectomy (HT) may be suitable for low-risk, non-aggressive tumors. This systematic review aims to assess existing evidence comparing recurrence and survival outcomes between HT and TT in pediatric low-risk PTC. Study Design: A systematic review was conducted in accordance with PRISMA and Cochrane Collaboration guidelines. Methods: PubMed, Embase, and the Cochrane Library were searched from inception for studies comparing surgical extent in pediatric PTC (â‰¤ 21 years). Eligible studies included those reporting recurrence, survival, or long-term outcomes in patients meeting American Thyroid Association (ATA) pediatric low-risk thyroid cancer criteria. Results: Of 1,068 studies screened, four met inclusion criteria, encompassing 1,349 pediatric patients with ATA low-risk thyroid cancer. Three studies compared outcomes between HT and TT. Recurrence rates were similar between surgical groups (HR 1.58; 95% CI 0.26 - 9.61). Overall survival was also comparable, ranging from 0 - 0.61% for HT and 0 - 1.29% for TT. As only one study reported mortality, pooled statistical analysis for survival was not feasible. Conclusions: No statistically significant difference was found in recurrence rates between HT and TT in our population. These findings suggest that HT may represent a safe and less morbid surgical alternative in appropriately selected pediatric patients. Further large-scale, multicenter studies are required to confirm these findings and inform future evidence-based guidelines.

2:36 Rates of Complications and Healthcare Utilization after Pediatric Intracapsular vs. Total Tonsillectomy - Dylan J. Cooper, MD; LeeAnn T. Marcello, BS; Jingwen Wu, BA; Michal Preis, MD

Educational Objective: By the end of this presentation, listeners should be able to counsel families on expected adverse outcomes and anticipate healthcare utilization rates in pediatric patients who are undergoing intracapsular versus total tonsillectomy.

Objectives: To analyze adverse effects and healthcare utilization rates among children after intracapsular tonsillectomy (IT) compared to total tonsillectomy (TT). Study Design: Case series with chart review. Methods: The medical records of 300 consecutive patients who underwent tonsillectomy at our institution between January 2021 and June 2024 were reviewed. Incidence of delayed postoperative hemorrhage, return to the emergency room for pain/dehydration, prolonged hospital stay, need for operative intervention, and phone calls to the provider's office were measured in the two cohorts. Logistic regression analysis was used to examine factors predictive of adverse events. Results: A cohort of 179 children who underwent IT (mean age 6.36 years, SD: 3.79) with obstructive breathing indications for 69.2% was compared to TT cohort of 121 children (mean age 7.64 years, SD: 3.81) with obstructive breathing indications for 63.3%. Incidence of delayed hemorrhage was 1.62% in the IT group vs. 6.37% in the TT cohort (p = .022). Treatment for pain/dehydration was necessary in 2.17% of IT cohort vs. 3.18% of TT cohort (P = .562). For the TT cohort, there was a 1.93% increase in return

to OR for bleeding (p = .058), 3.84% increase in office calls for pain (p = .123), 1.5% increase in total office calls (p = .741), and 6.67% increase in adverse events (Pearson $\chi 2 = 4.839$; p = .028). On regression analysis, intracapsular approach was found to be predictive of decreased postoperative adverse events (OR: 0.339, 95% CI: 0.199-0.467, p = .013). Conclusions: Intracapsular approach yielded a lower incidence of postoperative hemorrhage, pain, and general adverse events compared with total tonsillectomy approach. It also led to fewer emergency room visits and returns to the operating room, but similar rates of postoperative office phone calls.

2:42 **Risk Stratification in Pediatric Tracheostomy Using the Pediatric Health Information System** - Emma Martin, MD; Douglas Kempthorne, MD; Yann-Fuu Kou, MD; Stephen R. Chorney, MD MPH; Cynthia S. Wang, MD; Romaine F. Johnson, MD MPH

Educational Objective: At the conclusion of this presentation, participants should be able to describe how a PHIS-derived composite risk score stratifies pediatric tracheostomy patients by age at tracheostomy, hospital course, and resource utilization.

Objectives: To assess whether a PHIS-based composite risk score stratifies pediatric tracheostomy patients into tiers associated with age at tracheostomy, length of stay, ventilator days, charges, and in-hospital mortality. Study Design: Retrospective cohort study. Methods: Children undergoing tracheostomy at a tertiary children's hospital from 2015 to 2023 were identified in the Pediatric Health Information System (PHIS). PHIS provided a composite risk score (0 - 9) incorporating age, respiratory disease, neurologic disability, congenital anomalies, sepsis, and complex chronic conditions. Patients were stratified into three tiers: Critical (6 - 9), Moderate (3 - 5), and Standard (0 - 2). Outcomes included age at tracheostomy, length of stay (LOS), ventilator days, hospital charges, and in-hospital mortality. Cox proportional hazards regression was used for time-to-discharge analysis. Results: A total of 388 children were included: 108 (27.8%) Critical, 245 (63.1%) Moderate, and 35 (9.0%) Standard. Age at tracheostomy differed significantly across tiers (mean years [SD]: Critical 0.39 [1.54], Moderate 4.48 [5.78], Standard 7.45 [5.52]; p<0.001). Median LOS was 207 days (Critical), 126 days (Moderate), and 28 days (Standard). Hazard of discharge was lower in the Critical tier compared with Moderate (HR 1.90, p<0.001) and Standard (HR 16.15, p<0.001). Mean ventilator days were 154, 95, and 17, respectively (p<0.001). Critical patients accounted for 55% of total hospital charges ($1.1M per patient vs $325K). In-hospital mortality was 7.7% overall and did not differ significantly between tiers (p = 0.468). Conclusions: A PHIS-based composite score stratifies pediatric tracheostomy patients by age at the time of tracheostomy, hospital course, and resource utilization. Despite similar mortality across groups, the score identifies children most likely to require prolonged supportive care. This tool may inform resource allocation and strengthen family counseling about the expected hospitalization duration.

2:48 **Q&A**

2:55 **BREAK/VISIT EXHIBITS/VISIT POSTERS**

GENERAL SLEEP SESSION C
ROOM 106ABC

DEBATE PANEL

3:20 - 4:04

Role of Comprehensive Otolaryngologist in Academic Practice--Career Maker or Dead End!
Debate Moderator: Ashutosh Kacker, MD FACS
Debaters: Carol R. Bradford, MD MS FACS; Michael G. Stewart, MD MPH FACS

Moderators:
Susan R. Cordes, MD FACS
Steven D. Pletcher, MD

4:05 **Risk of Persistent Opioid Use after Oxycodone/Hydrocodone and Tramadol Prescribing in Adult Tonsillectomy: A TriNetX Database Study** - Kunal A. Koka, BS; Veenadhari Kollipara, BA; Hera Mukhtar, BS; Fred J. Lorenz, MD; David Goldenberg, MD FACS; Neerav Goyal, MD MPH FACS

Educational Objective: At the conclusion of this presentation, the participants should be able to recognize the increased risk of persistent opioid use in adult patients prescribed oxycodone/hydrocodone or tramadol following tonsillectomy and consider non-opioid analgesics as safer alternatives for postoperative pain management.

Objectives: Tonsillectomies are commonly performed procedures with postoperative pain traditionally managed using opioids. Growing concerns about the opioid epidemic have highlighted risks of persistent opioid use following brief postoperative exposure. This study assessed the association between postoperative pain prescriptions and persistent opioid use following tonsillectomy in adults. Study Design: Retrospective cohort. Methods: The TriNetX Research Network was queried for adult patients who underwent tonsillectomy between 2010-2023. Three cohorts were created based on postoperative prescriptions: oxycodone/hydrocodone, tramadol, or non-opioid analgesics (control), then propensity-matched (PSM) for age and sex. The primary outcome was persistent opioid use, defined as new opioid prescriptions 1-9 months postoperatively without another surgery requiring anesthesia. Results: We identified 6,990 patients in the oxycodone/hydrocodone cohort and 551 in the tramadol cohort. Before PSM, patients prescribed oxycodone/hydrocodone (RR 2.00; 95% CI 1.81-2.21, $p < 0.0001$) and tramadol (RR 2.31; 95% CI 1.77-3.01, $p < 0.0001$) had increased persistent opioid use compared to controls. The same was found after PSM for oxycodone/hydrocodone (RR 2.07; 95% CI 1.80-2.38, $p<0.0001$) and tramadol cohorts (RR 3.47, 95% CI 1.98-6.08, $p<0.0001$). Before PSM, opioid prescription refills were significantly lower in the oxycodone/hydrocodone cohort compared to the tramadol cohort (t-value -3.46, $p=0.006$), which was consistent after PSM (t-value: -2.55, $p=0.012$). Conclusions: Adult patients prescribed oxycodone/hydrocodone or tramadol were more likely to fill subsequent opioid prescriptions following tonsillectomy compared to those receiving non-opioid analgesics.

4:11 **Quantifying Patient Demand for Otolaryngologists in the United States** - Aravind Sreeram, BS; Christine Gourin, MD MPH; Anirudh Saraswathaula, MD MS

Educational Objective: At the conclusion of this presentation, the participants should be able to identify geographic areas of mismatch between otolaryngologist workforce distribution and patient demand using population and digital search data.

Objectives: To assess the geographic distribution of otolaryngologists across the US and compare it to population-level demand using Google Trends data. Study Design: Cross-sectional, population-based analysis.

Methods: State level otolaryngologist workforce data, population estimates, and Google Trends relative search volume (RSV) for nine otolaryngologist-related terms were integrated. A Relative Demand Index (RDI) was calculated by normalizing search volume averages against otolaryngologist physician density. Linear regression assessed supply demand mismatch, and residuals were calculated to identify oversupplied and undersupplied states. Spearman correlation was used to assess associations between otolaryngologist density, RSV, and urbanicity. Results: Among all 50 US states, 10,135 otolaryngologists were identified with a median density of 0.304 per 10,000 residents (σ = 0.088). The average Relative Search Volume (RSV) for otolaryngologist related terms ranged from 28.3 (North Dakota) to 72.9 (Mississippi). The highest RDI scores were observed in Mississippi (100.0), Nevada (89.1), and Oklahoma (88.6), indicating high demand relative to supply. Washington, DC (0), North Dakota (5.2), and Oregon (10.2) exhibited the lowest RDI. There was no association between physician density and RSV (p = -0.16, 95% CI [-0.41-0.10]), or between physician density and urbanicity (p = 0.12, 95% CI [-0.14-0.38]). The top oversupplied states included South Dakota, Wisconsin, and North Dakota, while the top undersupplied states included Mississippi, New Jersey, and Wyoming. Conclusions: Geographic disparities exist between otolaryngologist availability and public digital interest, with certain states demonstrating disproportionately high demand and low supply. These findings underscore the need for data driven workforce planning and support the utility of digital tools in identifying underserved regions.

4:17 **The Impact of Coaching on Professional Fulfillment, Self-Compassion, and Impostor Syndrome in Academic Otolaryngologists** - Armita Norouzi, BA; Kennedy Johnson, BS; Mary Jue Xu, MD; Stacey Ishman, MD MPH; Jolie L. Chang, MD; Megan Durr, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to describe the association between professional coaching and self-compassion, professional fulfillment, and well-being outcomes in otolaryngologists.

Objectives: To evaluate changes in well-being following a structured coaching intervention for academic otolaryngologists. Study Design: Pilot prospective cohort study. Methods: Seven academic otolaryngologists participated in a coaching program that included: one 3-hour foundational workshop on values-based leadership, a 360-degree assessment, and three virtual 1-hour individual coaching sessions with a professional coach over a 9 month period. The surveys administered pre- and post-intervention included the Stanford Professional Fulfillment Index (SPF), Self-Compassion Scale Short Form (SC), Secure Flourish Index (SFI), and Young Impostor Syndrome (YIS) Scale. Wilcoxon signed-rank tests were used to compare ordinal measures and McNemar's test for dichotomous measures pre- and post-coaching. Results: Coaching topics varied based on the individual. The top two topics covered included: professional advancement (6/7 participants) and building leadership skills (5/7 participants). Self-compassion scores significantly improved following coaching (Z = -2.4, p = .02), with a mean increase of 7.9 points (95% CI: -0.7 to 16.4), representing a 27% gain. SPF scores also increased significantly (Z = -2.0, p less than .05), with a mean change of 10.3 points (26% gain). SFI scores showed a non-significant change (p = .07). No statistically significant changes were observed in binary YIS items (all p greater than 0.05). Conclusions: Professional coaching was associated with improved self-compassion and professional fulfillment in this pilot cohort of academic otolaryngologists. These findings support the potential value of structured coaching programs in promoting clinician wellness and highlight the need for larger, controlled studies to evaluate long-term impact for academic surgical sub-specialists.

4:23 **Artificial Intelligence in Otolaryngology: Bubble or Boom?** - Gaurav A. Jategaonkar, BS; Shawn M. Stevens, MD; Ameya A. Jategaonkar, MD

Educational Objective: The presenter should be able to understand the current status of artificial intelligence in otolaryngology. Gain an appreciation for the volume of publications that discuss artificial intelligence and the relative dearth of novel applications or prospective studies that are utilizing artificial intelligence.

Objectives: Artificial intelligence (AI) has rapidly entered the zeitgeist and is increasingly being discussed within otolaryngology. The recent past has demonstrated a deluge of AI related publications within otolaryngology. Despite this it is unclear how these publications are contributing to novel uses of AI and how established methodologies to evaluate new interventions in medicine are being utilized. Here we aim to characterize the current publication trends regarding artificial intelligence in otolaryngology. Study Design: We aimed to perform a systematic review of the literature regarding artificial intelligence in otolaryngology with the aim of characterizing the studies being published. Methods: A PubMed search was conducted to identify studies involving artificial intelligence in otolaryngology over the past calendar year (09/2024 - 09/2025). Terms including "Artificial Intelligence", "AI", and "otolaryngology" were searched across MeSH indexing and free text mentions. The identified studies were then sorted individually into various study design categories. Results: An initial search had 625 results. Results were narrowed using various factors including full text availability and English language publication. This resulted in 151 manuscripts for full review. Only a small minority of these were for prospective studies of novel applications of AI (5/151 and 4/151 respectively). Conclusions: AI continues to grow both in popularity and its capabilities. While publications about AI have ballooned, articles that discuss novel implementations of AI remain scarce. Moreover, when AI is being utilized, often its implementation is not being evaluated with robust established techniques such as prospective studies. While our work certainly may contribute to this "bloat" in AI, we aim to highlight the disparity between interests in AI and meaningful research on AI and its applications within otolaryngology.

4:29 **Imposter Syndrome Among Otolaryngology Residents: A Cross-Sectional Survey** - Alexander Moise, MDCM; Ying J. Li, BSc; Yvonne Chan, MD FRCSC; Elise Graham, MD FRCSC; Amanda Hu, MD FRCSC

Educational Objective: At the conclusion of this presentation, the participants should be able to: Interpret the prevalence and severity of impostor syndrome among our country's otolaryngology-head and neck surgery residents using validated psychometric tools (CIPS, GSES); identify demographic and training level factors associated with increased impostor phenomenon scores; evaluate strategies for addressing impostorism in residency, including mentorship models and interventions aimed at improving self-efficacy and psychological well-being.

Objectives: To assess the national prevalence and severity of imposter syndrome (IS) among our country's otolaryngology-head and neck surgery (OHNS) residents and to explore associations between IS, demographic factors, and self-efficacy. Study Design: National cross-sectional survey. Methods: A national cross-sectional survey was distributed to OHNS residents using the Dillman Tailored Design Method over an eight week period. The survey included the Clance Impostor Phenomenon Scale (CIPS) and the General Self-Efficacy Scale (GSES). Responses were analyzed with t-tests, ANOVA, and multivariable regression. Results: Fifty-six OHNS residents participated (response rate 34 percent), including 29 men and 27 women. The mean CIPS score was 61.43 (SD 15.52), with 44.6 percent meeting criteria for significant impostorism (CIPS score 61 to 80). Women reported higher impostor scores than men (mean CIPS 65.9 versus 57.0, $p = 0.038$). Among those who experienced intense impostorism (CIPS above 80), 71.4 percent were women and 28.6 percent were men. Year of residency was significantly associated with impostor syndrome ($p = 0.024$), with PGY-1 residents exhibiting the highest CIPS scores (62.5) compared with PGY-5 residents (48.1). The mean GSES score was 31.75 (SD 3.46), with no significant variation across demographic groups. Self-efficacy was inversely correlated with impostorism (Pearson correlation coefficient negative 0.366, $p = 0.005$). Conclusions: Impostor syndrome is common among our country's OHNS residents, particularly women and those in early training. Higher impostor scores are linked to lower self-efficacy, underscoring the need for structured support and wellness initiatives within residency programs.

4:35 **Medical School Applicant Factors for a Successful Otolaryngology Match, Trends between 2018-2025** - Layla Ali, BA; Jefferson Norwood, MS (Presenter); Jefferson Norwood, MS; Samuel Salib, BS; Jose L. Puglisi, PhD; Angela Mihalic, MD; Richard Isaacs, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to learn about the most important factors for matching into Otolaryngology since step 1 went pass-fail and to determine longitudinal factors which improve chances of matching.

Objectives: To identify applicant characteristics most strongly associated with matching into Otolaryngology from 2017 to 2025 and to evaluate how the relative importance of academic performance and scholarly productivity has evolved following the transition of USMLE Step 1 to pass/fail scoring. Study Design: We conducted a retrospective analysis of Texas STAR (Seeking Transparency in Application to Residency) data from 2017 to 2025 for Otolaryngology. Methods: A binary logistic regression for matching into otolaryngology with the variables including abstracts, posters and presentations (research activity), research experience, peer reviewed publications, and clerkship honors. The odds ratio was determined for significant findings. Results: Each additional clerkship honors resulted in a 13 percent greater odds of matching (odds ratio is equal to 1.134, p is less than 0.001). Step 2 showed no statistically significant difference between those who matched (mean is equal to 254.3) and those who did not (mean is equal to 254.8, p is equal to 0.5949). The number of posters, abstracts and presentations was correlated with a 5.1% greater chance of matching (odds ratio is equal to 1.051), though this value was not statistically significant (p is equal to 0.064). Research experiences and peer reviewed publications showed no significant findings. Conclusions: From 2017 through 2025, clerkship honors emerged as the single strongest predictor of matching into Otolaryngology. Continuous academic performance with validation on step 2 is the most likely indication for match success. Traditional research metrics, including publications and presentations, showed limited predictive value. These findings highlight the increasing emphasis on clinical excellence over research volume in the post Step 1 pass/fail era and may inform both applicant preparation and program selection criteria.

4:41 **Loop Gain May Predict Surgical Response to Hypoglossal Nerve Stimulation Therapy** - Allison Lin, BS; Andrea S. Rivera Diaz, MSc; Ashutosh Kacker, MD; Yi Cai, MD

Educational Objective: Participants will understand the association between loop gain and hypoglossal nerve stimulation response.

Objectives: Hypoglossal nerve stimulation (HGNS) is an effective therapy for obstructive sleep apnea; however, some patients do not achieve complete treatment response. Loop gain (LG), a measure of unstable respiratory control, is underexplored as a potential predictor of HGNS outcomes. This study evaluated whether an estimate of LG from pre-operative sleep testing was associated with surgical response to HGNS. Study Design: Retrospective cohort. Methods: We analyzed patients undergoing HGNS between 3/2022-6/2025 at two academic institutions. Surgical response was defined as greater than or equal to 50% reduction in apnea-hypopnea index (AHI) with postoperative AHI less than 20 events/h. LG was estimated through a validated clinical prediction tool using sleep study data. Univariate and multivariable logistic regressions adjusting for body mass index (BMI), sex, and pre-operative AHI were used to evaluate whether high LG (greater than 0.7) was associated with HGNS response. Results: In total, 54 patients (mean age 66.0+/=10.4 years, mean BMI 28.9+/=4.1 kg/m2, 75% male) had complete PSG data needed for LG calculation. Mean baseline AHI was 34.3+/=17.4, and high LG was present in 24 patients (44.4%). Post-operative AHI decreased by mean 18.3 events/h ($p<0.001$), and 29 (53.7%) were HGNS responders. Univariate logistic regression showed no significant association between high LG and surgical response, while multivariable regression showed that high LG was associated with decreased likelihood of HGNS response (adjusted odds ratio 0.23, $p=0.049$). Conclusions: These results suggest that high LG could be used to identify patients less likely to respond to HGNS.

4:47 **Palate Surgical Interventions for Obstructive Sleep Apnea: A Systematic Review and Meta-Analysis**
- Justina T. Sargios, BA; Shaina W. Twardus, BA; Shaun A. Nguyen, MD; Mohamed A. Abdelwahab, MD PhD

Educational Objective: At the conclusion of this presentation, the participants should be able to recognize common palate surgery procedures and appreciate the impacts of technical modifications on patient outcomes.

Objectives: To compare AHI reduction and success rates among palatal surgeries for OSA. Study Design: A systematic review was conducted in CINAHL, Cochrane Library, PubMed, and Scopus from inception to July 2025. Methods: Studies on palatal surgeries for obstructive sleep apnea (OSA) with polysomnography (PSG) data were included. Procedures included UPPP (with modified and laser-assisted variants), ZPPP, RFSP (soft palate radiofrequency), AP (anterior palatoplasty), lateral (LP) and expansion-sphincter (ESP) pharyngoplasty, UPF (uvulopalatal flap), barbed reposition palatopharyngoplasty (BRP), barbed pharyngoplasty (BP), LPMR (limited palatal muscle resection), and PP (preservation pharyngoplasty). Extracted data included demographics, surgical technique, pre- and postoperative AHI, and surgical success. Results were presented as means and percent AHI reduction (%) with 95% confidence intervals. Study quality was evaluated using the Joanna Briggs Institute (JBI) tool. Results: Altogether, 238 studies were included. Procedures comprised UPPP, mUPPP, ZPPP, RFSP, AP, LP, UPF, ESP, barbed techniques, LPMR, and PP. Mean preoperative BMI was comparable across most procedures. All techniques significantly reduced AHI ($p<0.01$) except ZPPP and RFSP. AP, LP, UPF, ESP, and barbed procedures achieved higher success rates ($p<0.0001$) compared with UPPP and the less invasive LAUP and RAUP. Mean AHI reduction ranged from 42 - 48% for UPPP and LAUP to over 56% for reconstructive (LP, ESP) and barbed (BP, BRP) approaches and LPMR, indicating superior efficacy of tissue-preserving procedures. Conclusions: AP, LP, UPF, ESP, and barbed palatal techniques provide greatest improvement in OSA severity, while ZPPP and RFSP show limited effectiveness in reducing AHI. These findings highlight the superiority of advanced palatal approaches in managing OSA.

4:53 **Q&A**

5:00 - 5:30
The Legend and the Learner: A Fireside Chat with Gayle E. Woodson, MD FACS, and Albert L. Merati, MD
Moderator: Alessandro de Alarcon, MD MPH

5:30 **Adjourn**

FRIDAY, APRIL 24, 2026

7:15 TRIO Annual Business Meeting/Remarks/Announcements/Intro of President-Elect (TRIO Fellows Only)

FACIAL PLASTICS CONCURRENT SESSION D
ROOM 106ABC

Moderators:
P. Daniel Knott, MD
Robin W. Lindsay, MD BA

8:00 Multimodal Computer Vision Analysis of Motor Function and Affective Expression in Unilateral Facial Paralysis - Corinne R. Stonebraker, BA; Komal Kainth, MSE; Stephen Heisig, MSc; Christopher Razavi, MD; Joshua Rosenberg, MD; Mingyang Gray, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to describe methods for quantifying motor and emotional facial expression using computer vision.

Objectives: Facial expression reflects integrated motor and emotional signaling, and its disruption impairs social communication and affective reciprocity. Current clinical assessments of facial paralysis are qualitative and lack temporal or emotional resolution. Emerging computer vision and affective modeling techniques permit objective, frame-level quantification of facial dynamics and expression, offering new tools to characterize motor deficits and their socio-emotional consequences. Study Design: Prospective feasibility study. Methods: We conducted a feasibility study applying automated facial analysis to 25 patients with unilateral flaccid facial paralysis and 25 healthy controls during elicitation of a standardized protocol of facial movements, including eyebrow raise, frown, eye closure and blink, nose wrinkle, gentle and strong smiles, lip purse, display of lower teeth, and cheek puff. Facial motion was quantified using optical flow fields and 478-point landmark trajectories extracted via MediaPipe. Emotional expression and action unit (AU) activations were estimated with HUME.AI software. Group-level analyses compared interhemifacial asymmetry and intraindividual synchrony across modalities, including optical flow, landmarks, AUs, and emotion intensity, to evaluate sensitivity in detecting paralysis-related deficits. Results: Automated extraction and multimodal facial analysis can reliably differentiate facial paralysis patients from controls. Optical flow and AU synchrony metrics demonstrated the greatest sensitivity to hemifacial asymmetry. Emotion intensity measures revealed reduced affective output in paralyzed faces relative to controls. Conclusions: Computer vision-based analysis provides a scalable, objective method to quantify motor and emotional expression in facial paralysis. These findings establish feasibility for multimodal facial analysis and support future integration into facial reanimation research.

8:06 Comparing Effects of Functional Septorhinoplasty on Intranasal Drug Nasal Penetration from Nebulizers and Sprays - Yang U. Lee, BA; J. Madison Clark, MD; Dennis O. Frank-Ito, PhD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand how functional septorhinoplasty impacts intranasal drug penetration in the airway with nasal nebulizers and sprays.

Objectives: Effectiveness of topical intranasal medications, often prescribed to address various sinonasal diseases, is limited by ability to penetrate posteriorly to target site. This study investigates the effect of functional septorhinoplasty addressing nasal valve collapse on drug delivery from nasal nebulization and sprays. Study

Design: Computational study using parametric modeling to investigate intranasal drug transport. Methods: Three fresh cadaveric heads underwent septoplasty, dorsal preservation rhinoplasty (DPR), and butterfly graft (BFG) placement. Radiographic images obtained preoperatively and after each intervention were used for three-dimensional reconstructions of each nasal airway. Drug delivery simulations were performed under these conditions: particle size (1-30µm), 5m/s particle velocity. Particle sizes were divided into 3 groups: small (1-10µm), medium (11-20µm), large (21-30µm). Drug particle deposition to the posterior airway was calculated from simulation results. Results: In general, nasal sprays produced greater posterior deposition than nebulizers (range: spray=10.1-27.2%, nebulizer=0.2-5.9%). With nebulization, total greatest posterior deposition is achieved following DPR in D1 (5.9%), DPR+BFG in D2 (3.9%), and septoplasty in D3 (5.8%), while with nasal sprays, it is achieved with DPR for both D1 (27.2%) and D3 (20.1%) and septoplasty for D2 (20.6%). For both drug delivery mechanisms, majority of posterior depositions were medium-sized particles (maximum unilateral deposition: nebulizer=18.0%, spray=64.9%). Conclusions: Functional septorhinoplasty improves posterior drug delivery for both nasal nebulization and sprays, with sprays demonstrating superior posterior deposition. Medium-sized particles achieved more posterior deposition in both delivery methods.

8:12 Evaluation of Persistent Salivary Fistula from Facelift Surgery - Ifeanyi C. Onuh, MS; Henry Hoffman, MD; Brian Andrews, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the use of imaging modalities to evaluate a persistent salivary fistula after rhytidectomy.

Objectives: To present unique findings on imaging of parotid duct injury following revision rhytidectomy employing point-of-care ultrasound and sialography. To discuss the rare complication of obstruction to Stensen's duct in association with the more commonly recognized complication of injury to the parotid capsule during rhytidectomy. Study Design: Case report. Methods: Review of medical records including diagnostic imaging. Results: A healthy 76-year-old woman underwent a revision rhytidectomy resulting in a persistent depression in her left preauricular cheek area addressed by a second revision resulting in a left infra-auricular swelling progressing to a parotid-cutaneous fistula. The fistula persisted despite anticholinergic therapy supplemented with botulinum toxin injection at the time of drain placement. Continued salivary drainage warranted referral to our institution despite a second botulinum toxin injection performed at the time of drain removal. Ultrasound evaluation led to sialography demonstrating complete obstruction to the midportion of left Stensen's duct. These findings clarified the clinical presentation to identify ductal injury in association with parotid capsule disruption. The fistula closed without further intervention on post-surgical day # 101. Conclusions: Ultrasound supplemented with sialography assisted in the diagnosis of complete stenosis of Stensen's duct leading to conservative treatment of the parotid cutaneous fistula.

8:18 Facial Retaining Ligaments Limit Basal Cell Carcinoma Growth in the Midface and Periorbital Areas - Margareta Morrissette, MD; Jin Hua Li, BS (Presenter); Nandita V. Vegesna, BS; Anthony P. Sclafani, MD FACS

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the role of facial retaining ligaments (RLs) and describe how RLs influence the dermal spread pattern of basal cell carcinomas (BCCs), specifically exhibiting a growth pattern parallel to the ligament

Objectives: RLs are osseocutaneous connective tissue condensations that anchor the facial skin to the underlying periosteum. We hypothesized that the dermal insertion of RLs affects the dermal spread pattern of basal cell carcinomas (BCCs). Study Design: An observational study was conducted to analyze the post-Mohs micrographic surgery (MMS) excision defects of BCCs in relation to RLs in the midface and periorbital area. MMS is an ideal technique for this analysis as it serves a proxy for true tumor margins. Methods: Photographs of 163

post-Mohs defects were analyzed and their maximal lengths (perpendicular to the RL) and widths (parallel to the RL) were measured. Each defect was categorized based on its relationship to the RL: very near, near, far, or crossing. The ratio of the parallel to the perpendicular length were used to quantify the growth pattern as either concentric or eccentric. Results: The average parallel:perpendicular ratio for very near lesions was 1.39, for near lesions was 1.30 while the average ratio for far lesions was 1.03 ($p<0.0001$). This indicates that lesions near the RLs have a statistically significantly more eccentric growth pattern (directed more parallel than perpendicular to the RL), suggesting that the RL may serve as a barrier to BCC growth. This restrictive pattern was also seen in subgroup analysis of each individual RL. Conclusions: RLs appear to limit BCC growth and shape. Lesions near a RL show a growth pattern that is preferentially parallel to the ligament. These insights may help surgical planning and to predict recurrence.

8:24 **Outcomes and Innervation of Gracilis for Pediatric Facial Paralysis: A Systematic Review** - Kaiwen Chen, BS; Charles M. Henry, BS (Presenter); Shaun A. Nguyen, MD; Warren B. Chun, MD; Matthew H. Cheung, BS; Cory Hyun-su Kim, BS; Michelle S. Hwang, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the outcomes from different innervation techniques for gracilis free muscle transfer in pediatric facial paralysis.

Objectives: This systematic review aims to describe and compare outcomes of innervation techniques for gracilis free muscle transfers for facial reanimation in the pediatric population. Study Design: CINAHL, Cochrane Library, PubMed, and SCOPUS were systematically queried from inception to February 20th, 2025. Methods: Eligible studies included pediatric patients (/=18 years old) who underwent free gracilis muscle transfer for facial reanimation. Outcomes extracted included commissure excursion, facial asymmetry, validated instruments, patient satisfaction, and complications. Study quality and risk of bias were evaluated using the Joanna Briggs Institute (JBI) appraisal tool. Outcomes included continuous measures (mean/range) and proportions (%) with 95% confidence intervals (CIs). Results: A total of 14 retrospective studies were included for review, covering cross-facial nerve graft, masseteric innervation, and dual-innervation. The mean surgery age was 8.8 +/= 1.1 years (95% CI: 7.5 to 10.1 years, range 0.2 - 18 years) and were followed for a mean time of 8.0 +/= 1.1 years (95% CI: 5.0 - 10.1 years). CFNG was utilized for muscle innervation in 51.8% of cases, and masseteric in 40.2%. Masseteric innervation generally produced the largest commissure excursion (6.1-8.6 mm), while CFNG yielded moderate improvements (4.6-6.9 mm). Patients reported high overall satisfaction across all techniques (83-100%), and complications were infrequent and minor. Conclusions: Gracilis free muscle transfer is safe and effective for pediatric facial reanimation. Masseteric innervation provides strong, volitional smiles, while CFNG provided spontaneous smiles, with dual-innervation offering a balance of the two.

8:30 **Outcomes and Predictors in Fibula Flap Reconstruction for Neoplastic Mandibular Defects: A Systematic Review and Meta Regression** - Pushti Shah, BA MBA; Disha Patil, BS (Presenter); Nitya Devisetti, BS; Steven Ovadia, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to make data driven decisions in mandibular reconstruction by explaining which factors affect outcomes in fibula flap reconstructions. With the understanding that age is a strong predictor of complications, greater preoperative optimization and postoperative care can be given to older patients and improve their outcomes. Furthermore, recognizing the insignificant benefit of computer assisted planning for flap complications can allow surgeons to only employ computer planning for complex cases rather than for every patient. Overall, this abstract can help refine surgical judgment, streamline preoperative planning, and support improved patient outcomes.

Objectives: Fibula flaps remain the gold standard for mandibular reconstruction, yet prior reviews conflict on outcome-predicting factors and are limited by including non-neoplastic cases. The rise of computer-assisted

planning (CAP) raises debate over whether improved outcomes justify costs. This systematic review and meta-regression aim to establish safety benchmarks, identify predictors of complications, and determine whether CAP provides clinical benefit. Study Design: Systematic Review and Meta-Regression. Methods: PubMed, Embase, and Scopus were searched (2015 - 2025) for studies on mandibular reconstruction in benign/malignant neoplasms. Demographics, surgical details, and flap outcomes were extracted. Meta-analysis was performed, and meta-regression assessed age, radiation, and malignancy as covariates. Results: Sixty studies with 3,008 patients (age:54, females:36.6%) were included. Etiologies included squamous-cell carcinoma (61.4%), ameloblastoma (23.1%), and sarcoma (3.0%). Single-barrel and double-barrel flaps were used in 67.1% and 32.9% of cases; 10.4% utilized CAP. Mean quality-of-life was 88.1/100. Compared to conventional techniques, CAP showed no difference in complications (p greater than 0.99) or flap-failure(p=0.22). Pooled complication and flap-failure rates were 39.0% ([95% CI=0.29-0.50], I2=95%) and 1% ([0.01-0.03], I2=42%). Complications included infection (4.4%), reoperation (4.4%), recurrence (2.3%), and death (0.9%). Meta-regression showed a 1% increase in absolute complication risk with each additional year of age, significantly accounting for heterogeneity in the meta-analysis(p=0.02). Whether patients had a malignancy (p=0.69) or radiation(p=0.45) was not associated with complication risk. Conclusions: Free fibula flaps demonstrate low complication rates and high quality-of-life. CAP showed no advantage and should be reserved for high-risk cases where precision may aid outcomes. Counterintuitively, malignancy and radiation did not impact complications, shifting focus to age related frailty. These findings define fibula flap benchmarks, highlight complication predictors, and support selective CAP use in reconstruction.

8:36 Systematic Review: Outcomes Between Immediate, Early, and Late Upper Eyelid Weight Placement for Lagophthalmos - Arianna V. Ramirez, MD; Adithya Srikanthan, MD (Presenter); ; Delaney Clark, MS4; Sarah Schuster, MS3; Viran Ranasinghe, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to evaluate outcomes and complications associated with different timing strategies of upper eyelid gold weight implantation in the management of paralytic lagophthalmos.

Objectives: This systematic review aims to analyze outcomes and complications associated with different timing strategies for upper eyelid gold weight implantation in the management of paralytic lagophthalmos. Study Design: Systematic review of published interventional studies. Methods: A PRISMA systematic search was conducted across PubMed, Scopus, Cochrane Library, and Medline databases. Search terms were “gold weight”, “upper eyelid weight”, “immediate”, “early”, and “delayed gold weight”. Immediate was defined as time of surgical resection causing paralysis and early was defines as 1 day to 1 month from paralysis. Inclusion criteria required studies involving upper eyelid weight implantation for lagophthalmos with documented timing, etiology, and outcomes measured beyond three months postoperatively. Both objective (lagophthalmos reduction, scleral show, eye closure) and subjective (patient satisfaction, symptoms) outcomes were included, as well as complication rates. Results: Thirty-three studies met inclusion criteria, encompassing 1,145 eyes with a mean patient age of 53.3 years. Approximately 54% of subjects were male. Most common etiology of lagopthamos was acoustic neuroma resection (35%) followed by Bell’s Palsy (20%), and parotidectomy (15%). Most studies (26 studies) involved delayed implantation, with 5 Early studies and 2 Immediate studies used. Early placement demonstrated significantly improved postoperative eyelid closure rates (86%) and the lowest residual lagophthalmos rate compared to immediate and delayed groups (p = 0.01). Early gold weight placement resulted in the highest rate of eye recovery and implant removal at 15% (p = 0.001). Ptosis was more frequent in the delayed cohort, and extrusion was more frequent in the Immediate group, however these findings were not statistically significant. Conclusions: Early gold weight implantation offers favorable outcomes with improved eyelid closure and lower complication trends compared to delayed or immediate placement. Timing should be individualized based on the likelihood of facial nerve recovery. Further prospective, controlled studies are

warranted to validate optimal timing and refine patient selection criteria.

8:42 Who Undergoes Facial Reanimation for Bell's Palsy? A U.S. Multi-Center EHR Analysis - Sujay Ratna, BS; Rachit Kumar, PhD; Joshua Rosenberg, MD; Mingyang Gray, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to describe the national demographics of patients with Bell's palsy who undergo facial reanimation.

Objectives: Bell's palsy affects approximately 20-30 per 100,000 people annually. While most recover, a minority develop persistent weakness requiring facial reanimation surgery. An assessment of U.S. surgical demographics for facial reanimation remains limited, especially across various techniques, including fascia or muscle static slings, nerve transfers, and free tissue transfer (flap) procedures. Such an assessment can help to identify possible disparities or help inform procedure selection for future patients. Study Design: Retrospective database review. Methods: We performed a cross-sectional analysis of the de-identified electronic medical records of Epic Cosmos multi-institution cohort of patients with Bell's palsy who underwent facial reanimation. In total, 10,549 patients received at least one reanimation procedure. Demographic distributions for specific procedure categories (sling, nerve transfer, flap) were compared with the overall reanimation cohort using chi-square tests to assess differences by procedure type. Results: Overall, participants were 74.7% White, 7.6% Black, 3.2% Asian, 1.2% American Indian, 0.6% Pacific Islander, and 12.7% other/none. Nerve-transfer recipients had lower White representation (69.6%) and higher Black representation (10.2%) versus sling (75.6%, 7.0%) or flap (75.3%, 8.7%) ($p<.001$). Flap recipients were more often male (62.1%) than nerve recipients (50.8%) or sling recipients (55.9%) ($p<.001$). The southern U.S. represents 41.5-45.0% across all procedures, with relatively greater western U.S. representation for sling (17.7%) versus flap (12.1%) ($p<.001$). Conclusions: In this national cohort, demographics of Bell's palsy patients undergoing facial reanimation differ significantly by procedure across race, sex, and region. Future work should identify underlying drivers and adjust for clinical covariates to guide equitable, evidence based treatment.

8:48 Q&A

PANEL

8:55 - 9:39

New Frontiers in Otolaryngology
Co-Moderators: Mark K. Wax, MD FACS; Brianne B. Roby, MD
Panelists: Andres M. Bur, MD FACS; Stephen S. Park, MD; Andrew R. Scott, MD FACS; Maie A. St. John, MD PhD

3RD ANNUAL GERALD B. HEALY PANEL
ROOM 106ABC
OPEN TO ALL ATTENDEES

PANEL

9:40 - 10:20

Current State of Graduate Medical Education
Moderator: Alan G. Micco, MD FACS
Panelists: Mona M. Abaza, MD; Jessica Bienstock, MD; Sarah N. Bowe, MD FACS; Brian Nussenbaum, MD MHCM

10:20 BREAK/VISIT EXHIBITS/VISIT POSTERS

Allergy/Rhinology Concurrent Session E
Room 106ABC

Moderators:
Mohamad R. Chaaban, MD MBA FACS
Spencer C. Payne, MD

10:45 Exploring the Link Between Olfactory Dysfunction and Metabolic Syndrome: A Systematic Review and Meta-Analysis - Neeti Gandra, BA; Kaitlyn A. Roberts, BS; Shaun A. Nguyen, MD; Pete Peters, BS; Lauren A. Howser, MD; Rodney J. Schlosser, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to describe the association between olfactory dysfunction and metabolic syndrome components.

Objectives: To determine associations between OD and components of metabolic syndrome. Study Design: A systematic review was conducted using CINAHL, Cochrane Library, PubMed, and Scopus databases, querying from inception to June 2025. Methods: Eligible studies were stratified by olfactory dysfunction or different metabolic parameters. Extracted variables included metabolic measures (BMI, waist circumference, cholesterol levels, blood pressure, fasting glucose, HbA1c), olfactory scores, and comorbidities. Data were summarized as means, proportions (%), and corresponding differences (Δ) with 95% confidence intervals (CI). Risk of bias was evaluated using Joanna Briggs Institute (JBI) tool. Results: A total of 3,264 studies were screened using Covidence, with 78 studies included for data analysis. Participants with OD demonstrated higher pooled proportions of overweight status (Δ=1.1%, p=0.046), antihypertensive medication use (Δ=4.17%, p=0.0001), stroke (Δ=3.49%, p<0.0001), hypertension (Δ=5.78%, p<0.0001), atrial fibrillation (Δ=3.05%, p<0.0001), congestive heart disease (Δ=3.21%, p<0.0001), heart failure (Δ=4.43%, p<0.0001), cardiovascular comorbidities overall (Δ=4.44%, p<0.0001), metabolic syndrome (Δ=7.97%, p<0.0001), and diabetes (Δ=4.45%, p<0.001). No significant difference was observed for hyperlipidemia (Δ=0.49%, p=0.57). Participants with diabetes exhibited lower olfactory discrimination scores on the Sniffin' Sticks test (Δ=1.829, p=0.0473), and individuals with elevated BMI demonstrated lower TDI scores (Δ=2.423, p=0.0070). Conclusions: Patients with OD showed increased rates of conditions that comprise and contribute to metabolic syndrome. Conversely, individuals with metabolic disorders exhibited lower mean scores on olfactory testing, indicating a bidirectional relationship between olfactory impairment and metabolic dysregulation.

10:51 Calculating Value in Sinonasal Care: A Proof of Concept of the Application of the Average Cost Effectiveness Ratio to Sinus Surgery in Hospitals and Ambulatory Surgery Centers - Tala Al-Saghir, MD; Ravi R. Shah, MD (Presenter); William Mann, BS; Jun Jin, PhD; Steven Chang, MD; John Craig, MD

Educational Objective: At the conclusion of this presentation, participants should be able to evaluate cost effectiveness using the incremental cost effectiveness ratio (ICER), understand the proof of concept framework for applying value based care to endoscopic sinus surgery, and extend these principles to other otolaryngology practices to optimize value based care outcomes.

Objectives: Despite high U.S. healthcare spending, standardized measures of value remain limited. Endoscopic sinus surgery (ESS) for chronic rhinosinusitis (CRS) is common, but its value is poorly defined. This study applies a value based care (VBC) framework using costs and SNOT-22 derived quality adjusted life years (QALYs) to calculate the incremental cost effectiveness ratio (ICER), comparing ESS performed in ambulatory surgery centers (ASCs) versus hospital outpatient departments (HOPDs). Study Design: Retrospective cohort study. Methods: This study included patients who underwent ESS for CRS between September 2021 and July 2024 at a single tertiary care center, treated in either HOPDs or ASCs. Pre- and 6 months postoperative Sinonasal Outcome

Test (SNOT-22) scores were converted into health utility values (HUVs) using the validated EuroQol-5D-3L instrument to calculate QALYs. Costs were combined with QALYs to the ICER, comparing value between ASC and HOPD based procedures. Results: 49 patients were included; 7 underwent ESS at an ASC, 41 at HOPD. The adjusted incremental QALY gain for HOPD versus ASC was small and not statistically significant (ΔQALY = 0.036; 95% CI: -0.029-0.101), while costs were higher (ΔCost = $1,439; 95% CI: -$2,938-$5,817). The resulting ICER was $40,456/QALY gained. Combining the ICER with the cost effectiveness acceptability curve (CEAC) analysis, a willingness to pay threshold of $40,000-$45,000 per QALY appeared to be a cutoff range at which HOPD and ASC were equally preferred. At $100,000/QALY, HOPD had a 68% probability of cost effectiveness, increasing to 79% at $200,000/QALY. In the QALY per cost analyses, no significant differences were observed between settings (p = 0.13). As a summary, although both analyses suggested that HOPD settings were associated with higher costs and greater QALY gains, with a higher efficiency measured by QALY gain per unit cost, there was insufficient evidence to demonstrate that these differences were statistically significant. Conclusions: ASC based ESS achieved comparable clinical outcomes to HOPD procedures at lower costs, indicating greater value. Although differences were not statistically significant, this study demonstrates how ICER and PROMs can quantify value in ESS and may guide site selection and VBC initiatives in otolaryngology with larger sample sizes.

10:57 Surgery or Suppression? Biological Agents Associated with Reduced Risk of Sinus Surgery Compared to Primary Surgical Intervention in Chronic Rhinosinusitis with Nasal Polyps - Shvetali Thatte, BS; Mohamad R. Chaaban, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to compare rates of functional endoscopic sinus surgery (FESS) between individuals who have undergone sinus surgery and those prescribed biological agents for chronic rhinosinusitis with nasal polyps (CRSwNP).

Objectives: Given the high revision rate of FESS in surgically treated patients, this study evaluates whether the use of biological therapies decreases the rate of FESS when compared to primary surgical intervention. Study Design: Retrospective cohort study. Methods: Using the U.S. Collaborative Network on the TriNetX Analytics Platform, adult patients with CRSwNP, defined by the J33 ICD-10 code, were separated into surgery or biologic cohorts. The surgical cohort consisted of individuals with CRSwNP who had undergone FESS without prescription of a biologic. The biologic cohort consisted of those with CRSwNP who had been prescribed a biologic but had no history of FESS. FESS was identified by CPT codes, and the biologics of interest were dupilumab, mepolizumab, and omalizumab. Patients in the two cohorts were matched by age, gender, race, tobacco use, and asthma and allergic rhinitis comorbidities. The outcome of interest was risk of FESS at 2- and 5-years follow-up. The two cohorts were compared by calculating risk ratio (RR) with a 95% confidence interval (CI). Results: 44,486 individuals with CRSwNP underwent FESS without prescription of a biologic while 8,813 individuals with CRSwNP were prescribed a biological agent without history of FESS. After matching, individuals in the biologic cohort had a 77.9% relative risk reduction of FESS at 2 years follow-up compared to the surgery cohort (RR = 0.221, 95% CI: 0.171 - 0.285). This relationship persisted at five years follow-up, with the biologic group having an 82.0% relative risk reduction of FESS compared to the surgery cohort (RR = 0.18; 95% CI: 0.144 - 0.224). Conclusions: Biological agents reduce the risk of future sinus surgery in CRSwNP when compared to primary surgical intervention. Future studies should expand on patient and disease characteristics where biological agents may be used as the initial intervention compared to sinus surgery.

11:03 Scoping Review of Spontaneous Cerebrospinal Fluid Leaks in the Absence of Imaging Findings - Grant Ethan Gochman, MS; Meghana Babu, MD; Rohit Chatterjee, MD; Chirag R. Patel, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to better predict localization of spontaneous CSF leaks in the absence of radiology imaging findings.

Objectives: Successful identification of the location of a spontaneous CSF leak preoperatively can help with surgical planning and patient counseling. Many different radiologic imaging modalities are available to try and localize the source of anterior skull base CSF leak. This study aims to identify the most common source of CSF leak in the absence of localizing neuroradiology imaging. Study Design: A systematic review of English articles using the PubMed, Cochrane and Google Scholar Library. Methods: A systematic review was performed in accordance with PRISMA guidelines using the following keywords: "cerebrospinal fluid leak", "radiology imaging", "rhinorrhea", and "spontaneous". Data was collected for patients where CSF leak was identified intraoperatively but not able to be identified radiographically preoperatively. Results: 5 studies encompassing 98 patients met inclusion criteria. The majority of patients presented with clear rhinorrhea and orthostatic headaches. The main site of CSF leak in the absence of neuroradiology imaging finding was the cribriform plate at 46.9% (n=46/98) followed by the sphenoid sinus at 32.7% (n=32/98). Other sites included sphenoid roof (3.06%) and posterior ethmoid roof (2.04%). Conclusions: Spontaneous CSF leaks can be present despite nondiagnostic neuroradiology imaging, highlighting the importance of adjunctive diagnostic modalities and clinical suspicion. In instances where radiographic imaging is unable to locate the leak, the most common location is the cribriform plate.

11:09 Comparative Predictive Capacity of the Risk Analysis Index and Modified Frailty Index-5 for Postoperative Outcomes Following Endonasal Endoscopic Skull Base Surgery - Akshay Warrier, BA; Rushikesh Pande, BA; David Wassef, MD; Christian Bowers, MD; Jean Anderson Eloy, MD FACS

Educational Objective: At the conclusion of this presentation, the participants should be able to distinguish between different frailty indices and understand their comparative utility for endoscopic endonasal skull base surgery.

Objectives: To compare the predictive capacity of the Risk Analysis Index (RAI) and the Modified Frailty Index-5 (mFI-5) regarding poor postoperative outcomes among patients undergoing complex rhinologic skull base surgery. Study Design: Retrospective Study of 2385 patients from 2005-2020. Methods: A retrospective cohort analysis utilized a national surgical database to identify patients undergoing complex rhinologic skull base surgery through CPT codes, and assess patient frailty via RAI and mFI-5. Multivariable logistic regression determined predictive capacity, while model discrimination was compared using ROC analysis (AUC) across 11 key outcomes. Results: Both indices were strongly associated with adverse outcomes. The severely frail RAI cohort showed significantly elevated odds for major complications, specifically Clavien-Dindo Class II (OR 25.10, 95%CI 5.35-118.19) and Superficial SSI (OR 30.18, 95%CI 7.45-122.22). Similarly, RAI 41+ was strongly associated with resource use, including eLOS (OR 2.95) and Non-Home Discharge (OR 9.13). The mFI-5 severely frail cohort also demonstrated strong associations with eLOS (OR 3.80) and Non-Home Discharge (OR 2.92). In predictive analysis, RAI showed superior discrimination for key resource outcomes: eLOS (AUC 0.641 vs mFI-5 AUC 0.630) and Non-Home Discharge (AUC 0.674 vs mFI-5 AUC 0.633), but not for mortality. Overall, RAI showed superior or comparable discrimination for 9 of 11 outcomes compared to the mFI. Conclusions: Both RAI and mFI-5 are highly valuable tools for preoperative risk stratification in patients undergoing endoscopic skull base surgery. The RAI, however, demonstrated superior discriminatory capacity across the majority of severe complication categories and resource utilization measures, supporting its primary use for preoperative risk screening in this complex surgical population.

11:15 Validating a Computational Method for Predicting Surgical Targets in Nasal Airway Obstruction - Adam N. Kaakati, BSE; Sarah Russel, MD; Dennis O. Frank-Ito, PhD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand how computationally identified nasal obstruction sites align with surgeon-selected operative targets and their association with symptom improvement.

Objectives: This study aims to validate a computational method for identifying the most obstructive nasal airway sites and assess its clinical relevance by comparing predicted obstruction sites with actual surgical locations and postoperative outcomes. Study Design: Retrospective validation study using preoperative and postoperative computational fluid dynamics models based on patient-specific computed tomography (CT) scans and patient-reported outcome measures. Methods: Anatomically realistic nasal airway models were generated from CT scans of ten patients who underwent surgery for correction of nasal airway obstruction. Airflow simulations at 15 L/min inspiratory flow were performed under steady laminar conditions. Sites of greatest obstruction (SGOs) were identified computationally, and surgical locations were mapped from operative data. Metrics including preoperative model surgeon agreement, post-surgical obstruction resolution, and emergence of new obstructive sites were analyzed and correlated with changes in Nasal Obstruction Symptom Evaluation (NOSE) scores. Results: Across all patients, the average model surgery consistency was 0.41, indicating moderate overlap between identified SGOs and surgical targets. Patients with higher consistency and greater obstruction resolution generally demonstrated larger NOSE score improvements. An efficiency index incorporating model consistency, obstruction resolution, and absence of new obstructions showed a positive correlation with NOSE improvement (r = 0.33). Conclusions: Computational modeling demonstrates measurable concordance with surgeon selected sites and clinical outcomes, supporting its potential role in optimizing surgical planning for nasal airway obstruction. Further refinement of regional obstruction analysis may enhance predictive precision and clinical utility.

11:21 Q&A

PANEL

11:25 - 12:10

Environmental, Genetic and Epigenetic Components in CRS Pathogenesis
Moderator: Devyani Lal, MD MBBS MS
Panelists: Peter H. Hwang, MD FACS; Murugappan Ramanathan, MD FACS; Jayant M. Pinto, MD

12:10 LUNCH/VISIT EXHIBITORS/VISIT POSTERS

Otology/Neurotology Concurrent Session F
Room 101ABC

PANEL

8:00 - 8:44

Lessons Learned from Management of Eustachian Tube Disorders: Indications for Treatment, Pearls, Challenges and Complications
Moderator: Tina C.T. Huang, MD MS
Panelists: Seilesh C. Babu, MD; Judith E.C. Lieu, MD MSPH; Dennis S. Poe, MD PhD FACS

Moderators:
Michael D. Seidman, MD FACS
Elizabeth H.Y. Toh, MD MBA

8:45 Effect of Late Congenital CMV Treatment on Hearing Loss: A Systematic Review and Single Arm Meta-Analysis - Thamiris Dias Delfino Cabral, MD; Marcela Mafra, MD; Jaime Plane, MD; Matheus Sewastjanow-Silva, MD; Asitha Jayawardena, MD; Luke Jakubowski, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to evaluate the

impact of antiviral treatment initiation after 4 weeks of life in patients with congenital cytomegalovirus (cCMV) infection.

Objectives: Assess the effects of post-neonatal cCMV treatment in the pediatric population. Study Design: Systematic Review and Meta-Analysis. Methods: PubMed, Embase, the Cochrane Library, and Web of Science were systematically searched for studies evaluating antiviral treatment of cCMV initiated after the neonatal period. Outcomes of interest included hearing improvement (via auditory brainstem response), deterioration, or no change; return to normal hearing in those with previously confirmed sensorineural hearing loss; viral load in urine and plasma; and the incidence of neutropenia. Results: Eight studies comprising 197 patients were included. Between 1 and 2 months following treatment start, viral load decreased greatly in urine (-3.52 to -3.67 $\log_{10}$ copies/ml) with more minor changes in plasma (-0.95 to -0.80 $\log_{10}$ copies/ml). In the best ear evaluations,44.79% of treated patients improved, while of all patients, 9.98% showed deterioration, and 65.68% no change. Across all ears, 38.48% of treated patients had improvement, and 42.29% returned to normal. Of all patients, 5.47% had deterioration, and 63.34% no change. Neutropenia occurred infrequently, with 6.98% grade 1 - 2 and 6.49% grade 3 - 4 events. Conclusions: Initiating antiviral cCMV treatment started after the neonatal period resulted in improvement or stability for the majority of patients, with a very low rate of deterioration. The pooled estimate of improvement ranged from 38% to 45%. These findings indicate that the late intervention in this population is generally safe and often beneficial, with consistent functional preservation.

8:51 **Association Between GLP-1 Receptor Agonist Use and Otologic Outcomes** - Maia R. Smith, BSA MS; Sara A. Schuster, BA MS; Robert E. Africa, MD; Harold S. Pine, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to recognize the potential association between glucagon-like peptide-1 receptor agonist (GLP-1 RA) exposure and the development of otologic comorbidities for patient education and counseling regarding otologic symptoms during GLP-1 therapy.

Objectives: To address a gap in evidence regarding otologic side effects of GLP-1 RA by evaluating the relationship between GLP-1 RA use and the incidence of otologic comorbidities including tinnitus, vertigo, and patulous eustachian tube (pET). Study Design: Multicenter, retrospective cohort study in the United States. Methods: Using the TriNetX database, adults with obesity and/or type 2 diabetes mellitus were divided into cohorts with and without GLP-1 RA exposure (N=571,196). Patients were identified via CPT codes for flexible laryngoscopy or nasal endoscopy and matched 1:1 by age, sex, ethnicity, and metabolic comorbidities (N=155,792). Incidences of pulsatile and non-pulsatile tinnitus, vertigo, and pET within two years of GLP-1 use were compared using risk ratios (RRs) with 95% confidence intervals. Results: No significant association was observed between GLP-1 RA use and relative risk of vertigo or pET. Intriguingly, GLP-1 RA use was associated with an increased risk of pulsatile tinnitus ($p = 0.0076$, RR 1.305, 95% CI [1.073,1.588]) and a decreased risk of non-pulsatile tinnitus ($p < 0.0001$, RR 0.851, 95% CI [0.787, 0.913]). Conclusions: This large-scale cohort study identifies a novel relationship between GLP-1 RA use and tinnitus subtypes. In our analysis, GLP-1 RA use was not associated with pET development within two years of use. GLP-1 exposure appears protective against non-pulsatile tinnitus, perhaps due to decreased inflammatory mediators resulting in preservation of hair cells. Alternatively, GLP-1 use may predispose patients to pulsatile variants, perhaps due to changes in blood volume and autonomic signaling resulting in altered microvascular signaling and perception. These findings emphasize the importance of integrated, multidisciplinary approach for counseling of patients on GLP-1 therapy, as well as highlight the necessity for future studies exploring vascular and metabolic pathways linking GLP-1 signaling to otologic function.

8:57 **Auditory Rehabilitation Using Cochlear Implantation after Focused Radiation for Nasopharyngeal Carcinoma: A Systematic Review** - Lauren E. Williamson, BS; Lucas C. Licaj, BS BA; Kaitlyn A. Roberts, BS; Shaun A. Nguyen, MD; Jason G. Newman, MD; Ted A. Meyer, MD PhD

Educational Objective: At the conclusion of this presentation, the participants should be able to appreciate the currently reported use and potential benefits of cochlear implantation as auditory rehabilitation within the nasopharyngeal carcinoma patient population.

Objectives: Cochlear implantation (CI) has demonstrated benefit as auditory rehabilitation following focused radiation in various head and neck cancers, yet limited research exists on outcomes in patients with nasopharyngeal carcinoma (NPC). This systematic review evaluates the efficacy and safety of CI for radiation-induced hearing loss in this population. Study Design: Systematic review. Methods: A comprehensive literature search of CINAHL, COCHRANE Library, PubMed, and SCOPUS were conducted through March 2025. Studies reporting CI after radiotherapy for NPC were included. Primary outcomes included both subjective and objective hearing outcomes such as quality-of-life measures (QOL) and pure tone averages (PTA), as well as surgical complication rates. Results: A total of 10 studies (N= 72 patients) were included. Subjective reports indicated hearing improvement in all cases. Objective audiometric data was inconsistently reported and too heterogeneous for meta-analysis. Complications occurred in 17.7% of cases [95% CI: 8.7-30.3]. Conclusions: Although data are limited, existing evidence supports CI as a viable rehabilitative strategy in NPC patients with radiation-induced hearing loss. These findings underscore the need for further high-quality studies to guide practice.

9:03 **Hearing Impairment and Self-Reported Civic Engagement, Social Avoidance, and Heightened Vigilance** - Nivedita Sabarinathan, BA; Margaret Engelhardt, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the association between hearing loss and decreased community engagement, as well as the underlying psychological factors that drive this social isolation.

Objectives: To investigate the impact of hearing loss (HL) on civic and community engagement and evaluate underlying drivers of social isolation in those experiencing HL. Study Design: Cross-sectional study of U.S. adults from the 2022, 2023, and 2024 National Health Interview Survey (NHIS). Methods: Self-reported data on demographics, severity of hearing impairment, and community engagement were obtained. Possible drivers of social isolation were measured through discrimination and heightened vigilance variables. Analysis was performed with logistic regression models with adjustment for covariates. Results: Of 89,768 participants, those with self-identified moderate to severe HL reported experiencing a greater incidence of harassment (OR 1.49, 95% CI=1.16-1.91), treatment with less courtesy or respect (OR 1.44, 95% CI=1.22-1.69), frequent loneliness (OR 1.97, 95% CI=1.70-2.29), lack of emotional support (OR 0.69, 95% CI=0.59-0.81), and perception of being seen as unintelligent (OR 1.58, 95% CI=1.31-1.91). As such, they altered their social behaviors through increased avoidance of certain situations (OR 1.48, 95% CI=1.25-1.76), consciousness of their appearance (OR 1.33, 95% CI=1.05-1.68), and preparation for possible insults (OR 1.34, 95% CI=1.05-1.71) compared to those with little to no self-reported hearing loss ($p<0.01$). Hearing difficulty was associated with decreased odds of voting in a local election (OR 0.69, 95% CI=0.62-0.77), attendance at a public meeting (OR 0.65, 95% CI=0.53-0.80), and performance of volunteer work (OR 0.65, 95% CI=0.56-0.75) in the past 12 months. Significant HL was also associated with decreased odds of overall life satisfaction (OR 0.41, 95% CI=0.37-0.46). Conclusions: Adults with self-reported moderate to severe HL experience increased social isolation and hyper-vigilance behaviors as well as decreased civic engagement compared to those with little to no HL.

9:09 Impact of Surgical Corridor Morphology on Access to the Internal Auditory Canal in an Endoscopic Assisted Presigmoid Approach - Nauman F. Manzoor, MD; Aaron Tucker, BA (Presenter); Sammy Gao, BS; Brendon Warner, MD; Arman Saeedi, MD MPH; Lawrance Lee, MD

Educational Objective: At the conclusion of this presentation, participants should understand the anatomy and the potential benefits of the presigmoid retrolabyrinthine approach to internal auditory canal (IAC) lesions. Participants should understand how endoscopic assistance allows for additional lateral exposure of the fundus.

Objectives: The retrolabyrinthine approach is a presigmoid hearing preservation option for the management of IAC lesions, although its microsurgical technique offers limited IAC visualization. We aim to quantify the additional lateral exposure offered by angled endoscopy, and to analyze how retrolabyrinthine corridor morphology is associated with IAC exposure. Study Design: Cadaver dissection and radiomorphometric analysis. Methods: Thirteen cadaveric temporal bones were dissected via the retrolabyrinthine corridor with posterior semicircular canal preservation. High-resolution computed tomography delineated total IAC volume. Projected pre-dissection accessible IAC volumes were compared to post-dissection volumes. Results: Results: Mean IAC volume was 232.8+/=85.1mm^3. Surgical freedom ranged from 123.3 - 319.2mm^2 (median 182.9mm^2), and the angle of attack ranged from 13.9 - 27.1° (median 19.9°). Compared to median post-dissection IAC exposures, the projected approach underestimated 0° (-5.9%, p=.02) and overestimated 30° (+16.7%, p=.003) endoscope access. Compared with 0°, 30° endoscopy improved projected median IAC exposure (30°: 92.2%, range 37.3 - 98.3; 0°: 59.2%, range 0.0 - 78.6; p<.001) and post-dissection exposure (30°: 75.6%, range 62.5-92.0; 0°: 65.1%, range 57.3 - 80.1; p=.02). Median pre- and post-dissection retrolabyrinthine corridor widths were similar (4.4 vs 5.8mm; p=.050). Pre-dissection corridor width greater than 4mm was associated with increased projected IAC exposures (0°: +31.4%, p=.002; 30°: +5.2%, p=.001). After logarithmic transformation, pre-dissection corridor width strongly correlated with projected, but not post-dissection IAC exposure. Surgical freedom was moderately correlated with post-dissection volumes; this relationship was stronger in bones with <4mm corridor width. Conclusions: The retrolabyrinthine endoscopic-assisted approach to the IAC provided access to most of the IAC; angled endoscopy provided additional access towards the fundus. Preoperative measurement of corridor width and surgical freedom may aid in identifying surgical candidates.

9:15 Musical Sound Quality Perception Across Hearing Assistive Devices: Sensitivity to Low Frequency Degradation - Emmeline Y. Lin, BS; Brooke Barry, BS BA; Patpong Jiradejvong, MS; Charles J. Limb, MD; Karen C. Barrett, PhD; Nicole T. Jiam, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to elucidate differences in low-frequency musical sound quality perception between hearing aid, cochlear implant, and bimodal device users.

Objectives: To compare low-frequency-degraded, musical sound quality perception between users of different hearing-assistive devices. Study Design: Cross-sectional observational study. Methods: 51 adults including 11 normal-hearing (NH) listeners, 16 bilateral cochlear implant users (CICI), 16 bimodal users (CIHA), and 8 bilateral hearing aid users (HAHA) who qualified for CI were recruited. Participants assessed the sound quality of 3-second-long musical segments (15 sets) using the Cochlear Implant Multiple Stimulus with Hidden Reference and Anchor test. Subjects rated and ranked an original reference (best); three high-pass filtered (hpf) versions with low-frequency cutoffs at 200 Hz, 400 Hz, and 800 Hz; and an anchor (most degraded version). Two-way ANOVA with post-hoc comparisons was conducted to identify between group differences in average perceived sound quality ratings for each stimulus version. Results: Both population group and low-frequency degradation had significant effects on sound quality perception, with a significant interaction between them all ($p < 0.001$). HAHA users rated sound quality higher than both CIHA and CICI users for the 200 Hz and 400 Hz hpf conditions ($p < 0.001$). However, no difference was seen at 800 Hz hpf, suggesting all three hearing impaired groups were

similarly affected when low-frequency loss was severe. Overall, HAHA, CIHA, and CICI all displayed impairments with identifying the unaltered reference and correctly ordering the degraded stimuli compared to NH. Conclusions: HAHA users exhibit superior sensitivity to low-frequency sound degradation (</=400 Hz) than CI users. These findings elucidate low-frequency perception limitations as a contributing factor to diminished CI-mediated musical sound quality and provide evidence-based guidance for preoperative counseling of implant candidates regarding their postoperative music listening experience.

9:21 **Spatiotemporal Analysis of Medicare Reimbursement and Procedural Clusters in Otologic Surgery: A 13 Year National Study of Trends and Geographic Variation** - Akshay Warrier, BA; Ryan Bartholomew, MD; Liliya Benchetrit, MD; Daniel Lee, MD FACS

Educational Objective: At the conclusion of this presentation, the participants should be able to understand national trends in Medicare reimbursement and economic behavior for otologic procedures over the past 13 years.

Objectives: Otologic surgery encompasses a wide range of procedures with varying complexity and cost, yet Medicare reimbursement trends at the procedural level remain underexplored. This study examines national trends in Medicare reimbursement for otologic procedures from 2012 to 2024, utilizing unsupervised machine learning to inform reimbursement policy and value-based care models. Study Design: Retrospective cross-sectional study of Medicare Part B data. Methods: Data was queried from Medicare Part B data (2012-2024) using all otologic surgical CPT codes with at least 100 total services. Data preprocessing included inflation adjustment to 2024 USD. We applied principal component analysis (PCA) for dimensionality reduction and performed unsupervised clustering using both k-means and hierarchical clustering to classify CPT codes based on reimbursement growth, variability, and volume characteristics. The primary outcome was average inflation adjusted reimbursement per service over time. Secondary analyses included total volume trends, payment variability, and state-level differences. Results: Otologic procedural volume increased from 1.85 million to 2.15 million annually, while average reimbursement per service declined from $80 to $57. Clustering revealed three distinct economic phenotypes of procedures: low-volume stable codes, high-volume moderate variability codes, and high-cost volatile codes. Geographic analysis showed over 20% reimbursement decline in several states and persistent interstate variation. Conclusions: Despite growing procedural demand, otologic reimbursement per service has steadily declined. Unsupervised learning methods reveal meaningful clusters of surgical codes that may aid in refining payment policy and procedure valuation.

9:27 **Artificial Intelligence in Otology: How Well Does It Follow the Tinnitus Guidelines?** - Emily Kwon, BA; Annie Xu, BS; Alexandra Filipkowski, BA; Michael Moentmann, MD; Yu-Lan Mary Ying, MD; Wayne Hsueh, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to evaluate if artificial intelligence platforms can support tinnitus education and clinical decision making. This presentation will highlight platforms' strengths and limitations as adjunctive tools in physician and patient education.

Objectives: As patients increasingly turn to artificial intelligence (AI) for medical advice, the accuracy of its clinical recommendations remains uncertain. We aim to evaluate and compare AI-generated clinical recommendations against the 2014 American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS) Clinical Practice Guidelines (CPG) for Tinnitus. Study Design: Cross-sectional analysis using ChatGPT, Google Gemini, Microsoft Copilot, and OpenEvidence. Methods: 20 clinical queries were derived from the 2014 Tinnitus executive and plain-language CPG and entered into four AI platforms. Physician raters, blinded to source, evaluated responses for accuracy, comprehensiveness, patient-level appropriateness, and patient safety using a 5-point Likert scale (1=strongly disagree, 5=strongly agree) against the published CPG. Mixed-effects modeling with

Bonferroni correction compared AI outputs. Results: For physician directed questions, Copilot received the lowest mean ratings for accuracy (3.692, p less than 0.05), comprehensiveness (3.54, p less than 0.05), and safety (4.15, p greater than 0.06). In contrast, ChatGPT, Gemini, and OpenEvidence showed no differences in accuracy, comprehensiveness, or safety (means=4.54-5.00, all p greater than 0.05). For patient directed questions, mean ratings ranged from 4.29 - 5.00, with no differences across platforms for accuracy, comprehensiveness, appropriateness, or safety (all p greater than 0.05). Gemini achieved the highest mean scores for comprehensiveness (5.00), safety (4.86), and appropriateness (4.86). ChatGPT had the lowest score for appropriateness (4.29), while Copilot rated lowest for safety (4.43). Conclusions: Across all domains, OpenEvidence and Gemini demonstrated the highest concordance with guideline-based tinnitus recommendations, while Copilot trended lowest, particularly in clinician directed queries. Although Copilot underperformed in several domains, the remaining AI models provided clinically relevant and guideline consistent information. These findings highlight AI's emerging role as an educational and clinical decision-support tool for tinnitus management among both patients and clinicians.

9:33 Q&A

Laryngology/Bronchoesophagology Concurrent Session G
Room 101ABC

PANEL

10:45 - 11:25

Balancing the Voice and Management of Leukoplakia
Co-Moderators: Kenneth W. Altman, MD PhD FACS; James A. Burns, MD FACS
Panelists: Lee M. Akst, MD; Brianna K. Crawley, MD; Sunil P. Verma, MD MBA; VyVy N. Young, MD FACS

Moderators:
Michael M. Johns III, MD
Stephanie N. Misono, MD MPH FACS

11:26 N-Acetylcysteine Microparticles Enhance Functional Recovery after Recurrent Laryngeal Nerve Crush Injury in a Rat Model: Quantitative Analysis Using Deep Learning Based Motion Tracking - Amin Mirzaaghasi, PhD; Ashley Kita, MD (Presenter); Ashley Kita, MD

Educational Objective: Learn about the N-Acetylcysteine improvement and Functional Recovery After Recurrent Laryngeal Nerve Crush Injury in a Rat Model

Objectives: Recurrent laryngeal nerve (RLN) injuries are a frequent cause of vocal fold paralysis following anterior neck surgeries such as thyroidectomy. This can result in debilitating deficits in phonation, swallowing, and airway protection. Although most surgical traction or crush injuries recover, a therapeutic that could expedite such recovery would be useful. N-acetylcysteine (NAC) is an antioxidant with demonstrated neuroprotective effects. We hypothesized that NAC delivered gradually via biodegradable PLGA microparticles within a thermosensitive hydrogel would accelerate functional recovery after RLN injury. To quantify recovery a deep learning-based motion analysis was developed to determine laryngeal symmetry from video. Study Design: Controlled laboratory animal study. Methods: Twelve adult Long-Evans rats underwent unilateral RLN crush injury at the level of the 5th tracheal ring. Animals were randomized to receive NAC-loaded microparticles within a pluronic hydrogel, empty microparticles within a hydrogel, or no treatment (control). Laryngeal mobility was evaluated by serial transoral laryngoscopy at baseline and three times weekly for one month. Videos were

analyzed using the Social LEAP Estimates Animal Poses (SLEAP) deep learning platform. Bilateral arytenoid displacement as a proxy of glottal movement was quantitatively tracked frame by frame. Recovery was defined as the restoration of symmetric motion using a validated displacement threshold. One-way ANOVA compared recovery timelines between treatment groups. Results: NAC microparticle treated rats exhibited significantly accelerated recovery of symmetric laryngeal motion (mean recovery on day 9.75) as compared with empty microparticle-treated rats (day 17.25, $p = 0.02$), and untreated controls (day 16.5, $p = 0.03$). Deep learning analysis enabled tracking of mobility recovery. Conclusions: NAC microparticles promote earlier functional recovery in a rat RLN crush injury model. Deep learning-based video analysis provides a precise, reproducible platform for assessing laryngeal function and therapeutic efficacy. These findings support further translational investigation of neuroprotective interventions in nerve injury and the integration of artificial intelligence-driven motion analysis in otolaryngology research.

11:32 Amprenavir Protects Human Airway Cells from Pepsin Induced Inflammation and Early Epithelial Mesenchymal Transition - Karolina Lungova, BS; Pelin Ergun, PhD; Nikki Johnston, PhD

Educational Objective: At the conclusion of this presentation participant should be able to Demonstrate that pepsin triggers airway inflammation and early epithelial-mesenchymal transition (EMT), and that amprenavir prevents these effects.

Objectives: We previously showed that the FDA-approved HIV protease inhibitor amprenavir prevents pepsin-mediated mucosal damage in the laryngopharynx in vivo. Repurposing amprenavir could provide a novel strategy to prevent aspiration-related lung disease progression. This study evaluated time and dose dependent effects of pepsin on inflammatory and early EMT responses in human bronchial/tracheal epithelial cells (HBECs) and assessed the protective role of amprenavir. Study Design: In vitro translational. Methods: HBECs were treated in triplicate with 0.1 - 1mg/mL pepsin and/or 10¼M amprenavir at pH 6.5 for 15 or 30 minutes, followed by 6- or 24-hour rest. Secreted inflammatory response was measured by IL-8 ELISA, and early EMT was assessed by E-cadherin, Catenin, and Vimentin Western blot. Student's t-test (parametric) and Mann-Whitney U test (non-parametric) compared groups. Results: Early peak low pepsin exposure (15 minutes, 0.1mg/mL, 6-hour rest) induced maximal IL-8 increase ($p<0.01$), reversed by amprenavir ($p<0.01$). High-dose pepsin did not alter IL-8. EMT markers were unchanged at low-dose exposure. Prolonged high-dose pepsin (30 minutes, 1mg/mL, 24-hour rest) caused E-cadherin cleavage ($p<0.05$) and increased Vimentin ($p<0.01$), both reversed by amprenavir; Catenin remained unchanged. Conclusions: Pepsin elicits dose and time dependent effects in airway epithelial cells. Low-dose pepsin rapidly induces IL-8 mediated inflammation, whereas high-dose exposure does not increase IL-8 but may trigger alternative stress pathways, such as apoptosis, leading to epithelial injury and early EMT. Amprenavir prevents both inflammatory and epithelial-disruptive responses, highlighting its potential as a therapeutic agent to mitigate aspiration-related airway damage.

11:38 Investigating Barriers to Patient Adherence of Recommended Laryngology Care Plans - Jennifer A. Silver, MD MSc; Riley Jackson, MS; Tyler W. Crosby, MD; Clark A. Rosen, MD; VyVy Young, MD; Yue Ma, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand barriers to patient adherence to physician recommended care plans.

Objectives: To quantify patient adherence to laryngologist recommended care plans; to understand barriers to patient adherence to physician-recommended care plans; we aimed to explore completion rates of recommended tasks after laryngology visits and causes of incomplete adherence. Study Design: Mixed methods: Retrospective review and prospective phone interviews. Methods: Retrospective review was conducted on consecutive adult patients in a laryngology center. Demographics and documented physician recommenda-

tions, including follow-up visits, speech therapy, specialty referrals, imaging studies, and prescriptions, were collected. Standardized prospective patient phone interviews were performed for incomplete tasks, subsequently categorized as patient level barriers, system level failures, or process gaps. Results: Of 220 consecutive patients between March 3-18, 2025, 200 met inclusion criteria. Cohort was 55% female with mean age 60.5 years (SD 17.1). A total of 347 recommendations were recorded (1.74 per patient). Within 6 months follow-up, 76 incomplete tasks among 46 patients yielded a 21.9% incompletion rate. Incomplete tasks included follow-up (16.7%), speech therapy (23.8%), specialty referrals (28.1%), imaging studies (21.3%), and prescriptions (14.3%). Median social vulnerability index scores did not differ significantly between groups (Mann-Whitney U=4094, p=0.14). Identified barriers included symptom improvement, patient did not feel action was necessary, logistics of test/appointment being difficult to complete, patient not being contacted, lack of insurance coverage, and long wait times, amongst others. Conclusions: Approximately one in five Laryngology physician recommendations were incomplete. Barriers stem from both patient and system factors, highlighting opportunities to improve coordination, education, and support to enhance adherence and outcomes.

11:44 **Beyond TNM: Tumor Volume as a Prognostic Marker in Laryngeal Cancer** - Daniel Uralov, MD; Chiara Iovine, MD; Francesca Gaino, MD; Caterina Giannitto, MD; Alberto Paderno, MD PhD; Giuseppe Mercante, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to: describe the prognostic significance of radiologic tumor volume in patients with laryngeal squamous cell carcinoma; compare tumor volume thresholds with traditional TNM staging for predicting overall survival and disease-free survival; recognize the potential role of volumetric analysis in refining risk stratification and treatment planning for advanced laryngeal cancer.

Objectives: To determine whether radiologic tumor volume adds prognostic value for overall survival and disease-free survival in laryngeal squamous cell carcinoma, and to evaluate associations with T stage, nodal status, grade, subsite, and treatment. Study Design: Single-institution retrospective cohort. Methods: Ninety-two patients with clinical T2-T4 laryngeal squamous cell carcinoma treated with curative intent from 2018-2024 were included. Tumor volumes were derived from MRI, CT, or radiotherapy planning contours and analyzed as continuous variables and at empirical cutoffs. Survival was assessed with Kaplan-Meier methods and Cox proportional hazards models. Associations with T stage, nodal status, histologic grade, subsite, and treatment modality were examined. Results: A 30 cm^3 threshold was associated with a threefold increase in disease-specific mortality (33.3% vs. 11.2%; p<0.01). Tumor volume correlated strongly with T stage (p=0.62, p<0.01), and N+ tumors were 3.3 times larger than N0 (p<0.01). Prognostic impact appeared strongest in T4 tumors. Supraglottic cancers had larger volumes than glottic (12.9 cm^3 vs. 1.7 cm^3; p<0.01), and poorly differentiated tumors were larger than well-differentiated (p<0.01). Median tumor volume was lower in RT vs. surgery patients (2.6cm^3 vs. 5.7 cm^3), with corresponding mortality of 7.5% vs. 20.0% (p<0.01). Imaging volumes from MRI and CT showed high concordance with RT-planning contours (MRI--GTV r=0.872; CT--GTV r=0.801; p<0.01). Conclusions: Tumor volume is a robust prognostic marker in laryngeal cancer and may improve risk stratification beyond TNM classification. A 30 cubic centimeter threshold warrants consideration in staging and treatment planning.

11:50 **Intraoperative Bradycardia: Evaluating Vasovagal Events During Adult Suspension Microlaryngeal Surgery** - Thomas Q. McClelland, BS; Cyrus W. Abrahamson, BA; Abbey L. Landini, BA; Andrew P. Stein, MD; James A. Burns, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to recognize the incidence, risk-factors, and clinical management of vasovagal-induced bradycardia during suspension microlaryngoscopy.

Objectives: To measure the incidence and severity of bradycardia during suspension microlaryngoscopy (SML), identify risk factors predictive of vasovagal responses (VVR) during SML, and propose a series of immediate interventions to stabilize patients in whom significant bradycardia occurs. Study Design: Retrospective cohort study. Methods: This study retrospectively assessed intraoperative vital signs in all patients who underwent SML with a single surgeon between September 2023-June 2025. A VVR was defined as a drop-in heart rate (HR) of >/=10 bpm (to a nadir of /=20/10 mmHg (to a systolic value of <90 mmHg) within a 5-minute period. Patient demographics, medical history, surgery specifics, and intraoperative vital signs were recorded. Chi-squared tests and Fisher's Exact tests were utilized to compare those who did and did not have a VVR as the glottiscope was placed in suspension. Results: Significant bradycardia occurred in 17/190 (8.9%) of patients undergoing SML. Chi-squared and Fisher's Exact tests revealed no significant differences between those who did or did not experience a VVR based on age, sex, race, comorbidity, VVR during intubation, glottiscope size, or peri-operative medications given. The pulse dropped an average of 16 bpm in symptomatic patients, and patients averaged 9 minutes to fully recover, often requiring pharmacologic intervention. Nine patients needed intraoperative glycopyrrolate to treat the bradycardia and allow SML to proceed ($p<0.001$). No patients developed asystole requiring resuscitative chest compressions or pharmacologic intervention. Conclusions: VVR occurred in 8.9% of patients undergoing SML, often with significant bradycardia and the need for glycopyrrolate intervention. Otolaryngologists performing SML should be aware of patients' HR during SML and be prepared to treat acute changes immediately. Data presented can serve as foundational research for future, prospective investigations into this phenomenon.

11:56 Living with Subglottic Stenosis: Quality of Life, Healthcare Use, and Financial Impact - Ethan B. Robertson, BS BA; Marta Williams, MD; Roy Cho, MD MHA; Stephanie Misono, MD MPH; Raluca Gray, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to describe the quality of life, healthcare utilization, and financial burden experienced by adults with subglottic stenosis, and recognize the role of patient self-monitoring in care satisfaction and outcomes.

Objectives: To characterize patient experience of adults with subglottic stenosis, focusing on quality of life, healthcare utilization, and financial impact. Study Design: Prospective cross-sectional survey study of adults with subglottic stenosis. Methods: Adults aged 18 years and older with subglottic stenosis were prospectively enrolled to complete an online survey assessing demographics, quality of life [Dyspnea Index (DI), Brief Illness Questionnaire (BIQ), and 36-Item Short Form Health Survey (SF-36)], emergency healthcare utilization, financial burden, symptom monitoring, and treatment satisfaction. Descriptive statistics summarized all findings. Results: 50 patients (93% female, 98% White) reported moderate respiratory symptoms (DI 16.5 +/= 8.3). BIQ indicated moderate daily impact (M= 4.7+/= 2.7), symptom burden (M = 4.5 +/= 2.3) and emotional impact (M = 5 +/= 2.5). Though high concern (6.5 +/= 2.6), patients reported strong understanding (M = 6.9 +/= 2.4) and treatment confidence (M = 7.2 +/= 2.1). SF-36 scores were below population norms for physical (46.6 +/= 10.3) and mental (47.2 +/= 9.5) health. 20% at least sometimes sought urgent medical attention, 7% had more than 5 emergency surgeries and all reported less than 5 emergency department visits. 47% reported financial strain. 71% spent less than $5,000 annually. 69% used a peak flow meter, with 91% using it at least monthly; 51% found it helpful for symptom awareness and care decisions. Overall, 73% were at least somewhat satisfied with their care. Conclusions: Patients with subglottic stenosis experience moderate symptom burden, reduced quality of life but maintain confidence in treatment and satisfaction with care. Continued support for self-monitoring may improve outcomes.

12:02 Environmental Impact of a Novel Disinfection Machine, D60, for Non-Channel Flexible Laryngoscopes - Abhishek Mahesh, BS; Paul C. Bryson, MD MBA

Educational Objective: At the conclusion of this presentation, the participants should be able to delineate the environmental and clinical benefits that UV-C light disinfection offers over traditional high-level disinfection for flexible endoscopes.

Objectives: Introduce the potential of UV-C light technology for high-level disinfection (HLD) of non-channel laryngoscopes; perform a life cycle analysis (LCA) of UV-C HLD of non-channel laryngoscopes; understand the potential impact of UV-C HLD on otolaryngology clinical operations. Study Design: Life cycle analysis of UV-C light HLD for non-channeled laryngoscopes. Methods: Three equipment, materials, and disposables audits were conducted where the turnover and HLD process of a single non-channeled laryngoscope was analyzed. Every item involved in the cleaning process was documented for both the standard HLD and UV-C light chamber (D60) workflows. Water quantity for both methods was also documented and a power meter was used to determine the wattage of the machinery used. Additionally, scope turnover time was documented and CO2 emissions were calculated from known quantities. Results: Results demonstrated a significant reduction in materials used for D60 disinfection as compared to traditional HLD including a reduction in nitrile gloves, shoe covers, masks, etc. In addition, the total water usage was about 12 L per scope for traditional HLD as compared to 1 L per scope for the D60. Watt analysis demonstrated a reduction of 250 watts per scope with UV disinfection. Additionally, the D60 was found to reduce CO2 emissions by over a factor of 2. Finally, scope turnover time was found to average about 2 hours for standard HLD as compared to 6 minutes for the D60. Conclusions: Life cycle analysis demonstrates a significant amount of usage of disposables, water, and energy per scope with current HLD protocols. UV-C light HLD resulted in significantly less consumption of the same resources. Prior research has shown non-inferiority in achieving HLD for the D60 as compared to the current protocols. The marked reduction in turnover time and scope handling likely represents a significant opportunity for clinical efficiency, cost reduction, and resource consumption and will merit further investigation.

12:08 Q&A

12:10 Adjourn

POSTER PROGRAM

ALLERGY/RHINOLOGY

TRIO001. Surgical Repair of Nasal Septal Perforation in Hereditary Hemorrhagic Telangiectasia - Authors: Stephen F. Bansberg, MD; Trenton J. House, BS (Presenter); Devyani Lal, MD; Michael J. Marino, MD; Cullen M. Taylor, MD; Amar Miglani, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to recognize the benefit in nasal septal perforation repair in patients with hereditary hemorrhagic telangiectasia, while understanding the inherent difficulties and additional treatment considerations necessitated by the disease process.

Objectives: To illustrate outcomes of surgical management of nasal septal perforation (NSP) in patients with hereditary hemorrhagic telangiectasia (HHT). Study Design: Case series. Methods: Case series of HHT patients with NSP surgically addressed by bilateral mucosal flap repair, with minimum follow-up period of six months. Outcome measures included closure status, symptom outcomes via NOSE-Perf scale, quality-of-life change via 5-Factor Glasgow Benefit Inventory (GBI-5F) determined at last follow-up. Results: Four patients (3 males, aged 52-63 years) presented with primary symptoms of crusting and epistaxis. Perforation size ranged from 1.4-2.1cm length, 1.1-1.2cm height. In three cases, surgery was staged following sodium tetradecyl sulfate (STS) sclerosing telangiectasia injections. Repairs utilized mucosal advancement and pedicled flaps, with STS sclerosing injections administered post repair in three patients. At the last follow-up, complete closure was achieved in all cases. The mean NOSE-Perf score improved significantly from 23 (range: 16-27) preoperatively to 9 (range: 7-10) postoperatively (maximum score: 48). Additionally, all patients reported enhanced quality of life as measured by the GBI-5F, with mean score across all subdomains of 43.3 (maximum score: 100). Conclusions: Bilateral mucosal flap repair effectively achieves durable septal perforation closure in HHT patients, resulting in significant symptom relief and quality of life improvement. This approach also supports subsequent sclerotherapy with minimal risk of re-perforation.

TRIO002. Prognostic Significance of p16 in Sinonasal Squamous Cell Carcinoma: A Single Institution Retrospective Cohort Review - Authors: Nathan R. Barefoot, BS; Benjamin Dosan, BS; Teresa Zheng, BS; Priya Desai, BS; Adam J. Kimple, MD PhD; Brian D. Thorp, MD

Educational Objective: This presentation will inform participants about the relationship between p16 expression and HPV status in sinonasal squamous cell carcinoma, clinicopathologic differences between p16-positive and p16-negative cases, and the prognostic utility of p16 as a surrogate marker for HPV-related disease.

Objectives: p16 immunohistochemistry (IHC) is a valuable surrogate marker for human papillomavirus (HPV) in oropharyngeal squamous cell carcinoma (SCC), but its role in sinonasal SCC (SNSCC) remains incompletely defined. This study evaluated clinicopathologic features, recurrence rates, and survival outcomes in SNSCC stratified by p16 status, and assessed p16â€™s utility as a surrogate for HPV status. Study Design: Single-center retrospective cohort study. Methods: Chart review identified 39 p16-positive and 40 p16-negative SNSCC cases. Categorical variables were compared using chi-square or Fisher's exact tests, and quantitative variables with unpaired, two-tailed t tests. Kaplan-Meier analyses with log-rank testing were performed to compare overall survival (OS) and disease-specific survival (DSS). Results: p16+ cases were significantly younger at diagnosis (mean 59.4 vs. 64.4 years, p=0.040) and were more likely to report smoking (84.6% vs. 62.5%, p=0.026) and weekly alcohol use (49% vs. 25%, p=0.028). Gender distribution, average pack-years, and heavy alcohol use were similar between groups. HPV DNA testing demonstrated poor concordance with p16 status: of 37 p16+ tumors tested, 18 were HPV positive. All 29 p16- tumors tested were HPV negative, yielding a sensitivity and negative predictive value of 1.0, specificity of 0.60, and positive predictive value of 0.49. Tumor stage,

nodal involvement, metastasis, and treatment modalities were comparable between groups. Recurrence rates (p16+: 28.21%, p16-: 35.00%) and time to recurrence (p16+: 358 days, p16-: 392 days) were similar. Median OS was 125 months for p16+ and 67 months for p16- cases, but Kaplan-Meier analysis did not reach significance in OS (p=0.153) or DSS (p=0.144), including when stratified by combined p16/HPV status. Conclusions: In SNSCC, p16 positivity was associated with a younger age at diagnosis and higher rates of smoking and alcohol exposure. While OS and DSS advantages were noted in the p16+ group, they did not reach statistical significance. p16 was an imperfect surrogate for HPV status.

TRIO003. Induction and Maintenance Immunosuppressive Regimen Type Influences Risk of Chronic Rhinosinusitis and Sinus Surgery in Kidney and Liver Transplant Patients - Authors: Anusha Dabak, BSA; Annika Nambiar, MPH; Robert Africa, MD; Scott A. Hardison, MD FAAOA

Educational Objective: At the conclusion of this presentation, the participants should be able to understand that different induction therapies significantly affect chronic rhinosinusitis (CRS) and allergic fungal rhinosinusitis (AFRS) development, while different maintenance regimens influence CRS and functional endoscopic sinus surgery (FESS) risk.

Objectives: To examine whether different combinations of induction and maintenance immunosuppressive therapies for kidney/liver transplant are associated with varying risks of chronic rhinosinusitis (CRS), functional endoscopic sinus surgery (FESS), allergic fungal rhinosinusitis (AFRS), and CRS with nasal polyposis (CRSwNP). Study Design: Multicenter, retrospective cohort study. Methods: The TriNetX database was used to identify adult patients with a history of kidney or liver transplant. These patients were further stratified into groups that receive induction and maintenance immunosuppressive regimens. Induction regimens included either anti-thymocyte globulin (ATG) or basiliximab. Maintenance regimens included either tacrolimus or cyclosporine with mycophenolate mofetil and corticosteroids. Outcomes were evaluated by assessing relative risks (RR) with 95% confidence intervals. Results: For patients on induction regimens, the rates of developing CRS and AFRS were significantly higher among patients who received basiliximab compared to ATG before receiving a transplant (RR: 0.934 [0.877, 0.994]; RR: 0.762 [0.672, 0.863]). Patients who received ATG induction after receiving a transplant had a significantly higher rate of CRS compared to post-transplant basilixmab therapy (RR:1.129 [1.047, 1.216]). For maintenance immunosuppression, patients who received tacrolimus with mycophenolate mofetil and corticosteroids had a significantly higher rate of CRS and needing FESS (RR: 0.855 [0.759, 0.963]; RR: 1.929 [1.023, 3.634]). No other significant differences were found for AFRS, and nasal polyposis in the maintenance immunosuppression groups. Conclusions: Induction regimen with basiliximab was noted to have a significantly higher risk of CRS and AFRS. Maintenance immunosuppression with tacrolimus compared to cyclosporine had significantly higher rates of CRS and needing FESS.

TRIO004. Modeling Longitudinal SNOT-22 Trends Across Biologic Therapy Classes in Chronic Rhinosinusitis - Authors: Michael Gemmell, BA; Kartik Motwani, BS PhD; Jinelis Santiago-Beniques, BS; Jeb Justice, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand how symptom trajectories in chronic rhinosinusitis (CRS) patients vary by biologic therapy class and to explore whether combined biologic therapy or adjuvant immunomodulatory therapies lead to greater improvement in disease specific quality of life over time. This project aims to apply longitudinal modeling to clinical data to better characterize treatment response patterns and inform therapy decisions for patients with refractory CRS.

Objectives: This study aimed to evaluate longitudinal changes in sinonasal symptom burden among patients with chronic rhinosinusitis (CRS) treated with biologic therapy and to assess whether adjunct therapy offers further benefit compared with patients on dual-biologic regimens. Study Design: A retrospective cohort study.

Methods: Adult patients with CRS who received biologic therapy between 2019 and 2025 were identified through EPIC electronic health records (EHR). SNOT-22 scores were collected and matched to each patient's biologic start date. Patients were placed into the following treatment groups: 1. IL-4 and adjunct therapy; 2. non-IL-4 and adjunct therapy; 3. dual-biologic therapy. Changes in SNOT-22 scores were modeled over time using Generalized Estimating Equations (GEE). Comorbid allergic conditions, including atopic dermatitis, asthma, and allergic rhinitis, were recorded for prevalence in adjunct therapy use. The primary endpoint was estimated monthly change in SNOT-22 scores by treatment groups. Results: A total of 40 patients met inclusion criteria and 83 SNOT-22 questionnaire scores were recorded. The most frequent comorbidities in our cohort included atopic dermatitis (43%), asthma (28%) and allergic rhinitis (20%). Preliminary findings showed that SNOT-22 scores declined significantly over time (p=0.008). Patients who had received dual-biologic therapy had a steeper rate of score decline (-0.15 points/month) compared to IL-4 + immunotherapy (+0.23 points/month) and non-IL-4 + immunotherapy (+0.20 points/month). Conclusions: Among patients with CRS, symptom burden generally improved over time with biologic therapy. The greatest improvement were patients who received dual-biologic therapy with an estimated score decline of -0.15 points/month on SNOT-22 assessments. These findings highlight the possible benefit of dual-biologic therapy in the treatment of patients with resistant CRS.

TRIO005. Simple and Low Cost 3D Printed Exhalation Delivery System for Nasal Steroids - Authors: Kaleb Jia-Yi Hsieh; Sarah M. Liu; Brian J. F. Wong, MD PhD

Educational Objective: At the conclusion of this presentation, the participants should be able to describe a simple, low-cost 3D-printed alternative for improving the accessibility of high-yield nasal drug delivery systems.

Objectives: The objective of this study is to develop a 3D-printed exhalation delivery system for nasal steroid administration. The device is designed to be fabricated at the point of care using 3D printing technology and to provide an extremely low-cost, accessible alternative to commercially available systems. Study Design: An experimental laboratory study was conducted to compare particle distribution characteristics of a 3D-printed exhalation delivery system with those of a commercial device (XHANCE delivery system, Optinose). Methods: We reviewed patents and commercial devices to guide our design and approach. A nozzle attachment was developed in SolidWorks, and prototypes were printed with Formlabs Form 3B+ using Biomedical Durable Resin. A custom mount was constructed to consistently actuate the two nasal spray delivery systems. Particle distribution patterns were evaluated through visualization of side-scattered light generated by aerosolized particles under green LED illumination. Airflow was delivered with a controlled blower system, and images were acquired using high-speed video capture at 240 FPS. ImageJ was used to analyze the images. Results: The over-the-counter nasal spray with our nozzle attachment reached a maximum spray radius of 49.5 cm after 560 milliseconds. The XHANCE reached a maximum spray radius of 47 cm after 1,040 milliseconds. Side-scattered light patterns showed qualitatively similar particle distributions. Conclusions: Fabrication of the device using a standard 3D printer can be achieved at nominal cost, and it is compatible with over-the-counter nasal steroid formulations. Collectively, this approach represents a potential avenue for substantial cost savings and improved accessibility. Future work will focus on adapting readily available household plumbing components to develop an even lower-cost version of the exhalation delivery system.

TRIO006. Coming Up Empty: Reassessing the Link Between Empty Nose Syndrome and Depression - Authors: Gabrielle Knauer, BS; Christian Moser, BS; Gillian Michaelson, MD; Jobran Mansour, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to further consider the complex relationship between ENS and depression, while also recognizing the limitations restricting this area of study.

Objectives: Empty nose syndrome (ENS) is an uncommon but potentially debilitating sequela of nasal turbinate

reduction surgery that remains understudied. While prior studies describe an association between ENS and depression through subjective questionnaires, no studies quantitatively assess rates of depression or new depression diagnosis following turbinate reduction procedures. Study Design: Retrospective cohort study using a national electronic health record database. Methods: The TriNetX National Health Research Network was queried to identify patients who underwent any of the four recognized turbinate reduction procedures: partial or complete turbinate excision, submucous resection, intramural ablation, or superficial ablation. Cohorts were 1:1 matched using propensity scoring for age, gender, race, ethnicity, as well as comorbidities including cardiovascular and metabolic diseases. 5-year rates of several key outcomes were evaluated, including new diagnosis of depression, anxiety, and somatoform disorders, and new antidepressant use. Results: Turbinate reduction surgery was not associated with a statistically significant increase in new depression diagnosis or antidepressant use. Patients who underwent partial or complete turbinate excision also showed no increased risk relative to other less invasive turbinate reduction techniques. Unexpectedly, patients who underwent functional endoscopic sinus surgery demonstrated higher rates of depression (8.34% vs. 6.71%, p=0.0016), anxiety (10.77% vs. 8.7%, p=0.0004), and antidepressant use (14.36% vs. 12.11%, p=0.0015). Among patients with rhinitis, partial or complete turbinate excision was associated with increased depression (6.46% vs. 3.51%, p<0.0001) and anxiety (8.03% vs. 5.13%, p<0.001). Conclusions: Contrary to our initial hypothesis, nasal turbinate reduction surgery was not associated with a clinically significant increase in the risk of new depression diagnoses or antidepressant prescriptions. Although the severity of patients' symptoms should not be dismissed, these findings raise questions about whether the psychological impact of ENS has been overemphasized anecdotally. Further prospective research is warranted to better characterize ENS incidence, risk factors, and long-term outcomes.

TRIO007. Maxillary Sinus Wall Hyperostosis in Odontogenic Sinusitis - Authors: Kyle W. Leonard, MD; Jun Jin, PhD; John Craig, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to recognize that computed tomography (CT) of odontogenic sinusitis patients will generally demonstrate hyperostosis of most or all the maxillary sinus (MS) walls.

Objectives: Paranasal sinus wall hyperostosis can occur in those with chronic sinus inflammation, but its association with odontogenic sinusitis (ODS) has not been characterized. While certain symptoms, endoscopic, and CT findings are highly suggestive of ODS in the setting of unilateral sinusitis, it can still be difficult to discern ODS from other non-odontogenic inflammatory and neoplastic conditions. This study sought to characterize MS bony wall thickness in ODS patients as a means to facilitate the diagnostic evaluation of patients with unilateral MS opacification on CT. Study Design: Retrospective chart review. Methods: A retrospective cohort study was conducted on 100 consecutive unilateral ODS patients who underwent surgery between 2019 and 2023, all who had at least MS complete or near complete opacification on CT. Demographic and clinical data were collected. Preoperative CT scans were analyzed for thicknesses of all MS bony walls and extents of extramaxillary sinus disease. MS bony wall thicknesses were compared between the ODS and contralateral non-diseased sides. Results: Of 100 patients, mean age was 58 years, and 48% were female. Mean symptom duration was 13.0 months. Eighty-seven patients had anterior ethmoid, and 55 had frontal sinus disease on CT. Mean anterior, posterior, medial, lateral, and superior MS bony wall thicknesses of the were 2.64mm, 1.52mm, 1.21mm, 2.13mm, and 1.62mm on ODS sides, respectively, compared to 1.56mm, 0.80mm, 0.93mm, 1.13mm, and 0.98mm on non-diseased sides, respectively. All MS bony wall thicknesses were significantly greater on ODS sides (p<0.0001). Conclusions: All MS bony walls in ODS patients were significantly thicker than contralateral non-diseased MSs.

TRIO008. Analysis of Psychosocial Outcomes in Patients with Chronic Rhinosinusitis with and without Surgical Intervention - Authors: Sophia Linguiti, BA; Janvi J. Shukla, BA; Leonard E. Estephan, MD; Benjamin Bitner, MD; Gurston Nyquist, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to evaluate how different management strategies for chronic rhinosinusitis (CRS) affect long-term psychosocial outcomes and interpret evidence demonstrating improved mental health outcomes among patients who received surgical intervention.

Objectives: To compare long term psychosocial outcomes including anxiety, depression, substance misuse, disordered eating, and survival between patients with chronic rhinosinusitis (CRS) managed surgically and those managed non-surgically at 1, 3, and 5 years after treatment. Study Design: Retrospective cohort study using the TriNetX US Global Collaborative Network. Methods: Adult patients diagnosed with CRS were categorized according to treatment approach: surgical or non-surgical. Propensity score matching was applied to balance baseline demographics and comorbidities (total n=374,816). Evaluated psychosocial outcomes included anxiety, depression, suicidality, disordered eating, substance misuse, and overall survival. Risk ratios (RR) and Kaplan-Meier survival estimates were generated at 1, 3, and 5 year intervals following the CRS diagnosis. Results: At 1 year, surgical patients demonstrated significantly lower risks of anxiety (RR 0.709, 95% CI [0.684-0.735], $p<0.0001$), depression (RR 0.728, 95% CI [0.699-0.758], $p<0.0001$), and substance misuse (RR 0.665, 95% CI [0.632-0.7], $p<0.0001$). These effects persisted at 3- and 5-years, with the surgical group demonstrating significantly lower risk of anxiety, depression and substance misuse. Disordered eating was consistently reduced for surgical patients at all timepoints, although not reaching significance. No significant differences were observed in suicidality and overall survival. Conclusions: Surgical management of CRS is associated with sustained reductions in anxiety, depression, and substance misuse compared to medical therapy, suggesting potential long-term psychosocial benefits of operative intervention.

TRIO009. Underlying Autoimmune Disease Increases the Risk of Allergic Fungal Rhinosinusitis in Patients with Chronic Rhinosinusitis - Authors: Annika Nambiar, MPH; Anusha Dabak, BSA; Robert E. Africa, MD; Scott A. Hardison, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand that patients with preexisting autoimmune conditions who have chronic rhinosinusitis (CRS) are more likely to develop allergic fungal rhinosinusitis (AFRS) compared to those with no underlying autoimmune condition.

Objectives: This comprehensive analysis examines whether preexisting autoimmune conditions influence the likelihood of having allergic fungal rhinosinusitis (AFRS) in patients with chronic rhinosinusitis (CRS). Study Design: A retrospective analysis was conducted using the TrinetX database. Patients were separated based on a diagnosis of Fibromyalgia, Dermatomyositis, Myasthenia Gravis, Sarcoidosis, Rheumatoid Arthritis (RA), Sjogren's syndrome, Systemic Lupus Erythematosus. Methods: Patients diagnosed with CRS at an ENT visit were grouped by the presence or absence of each autoimmune condition. For each condition, patients with both CRS and the autoimmune disease were compared to those with CRS alone. This analysis was repeated for each autoimmune condition. The primary outcome was a diagnosis of AFRS, defined by a positive fungal stain. Results: The presence of an underlying autoimmune condition with CRS significantly increased the likelihood of having AFRS in all conditions ($p<0.0011$). GPA had the highest risk difference at -8.404%. Conclusions: A preexisting autoimmune condition in patients with CRS significantly increases the likelihood of an AFRS diagnosis compared to those without autoimmune conditions. These findings suggest that autoimmune conditions are risk factors for both CRS and AFRS, potentially through shared mechanisms of immune dysregulation. This highlights the need for greater clinical monitoring for AFRS in this population and supports investigation into the role of immune-modulating therapies in influencing disease progression and outcomes.

TRIO010. Association Between Major Depressive Disorder and Opioid Utilization after Endoscopic Sinus Surgery: A Retrospective Study - Authors: Naveen Raj, BS; Sanjeet Rangarajan, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to recognize major depressive disorder as risk factor for increased opioid utilization after sinus surgery.

Objectives: Opioid use after surgery has become an area of interest due to rising concerns of substance abuse, especially in patients with comorbid psychiatric disorders. This study aims to investigate whether patients with a history of recurrent major depressive disorder (MDD) demonstrate higher postoperative opioid utilization compared to patients without depression following endoscopic sinus surgery (ESS). Study Design: Retrospective. Methods: Using the TriNetX database, a retrospective cohort study was conducted of adult patients (18 and older) who underwent complete ESS, identified by Current Procedural Terminology (CPT) codes. Patients with a diagnosis of recurrent MDD (ICD-10 F33) comprised the exposure group, while the control group included patients who underwent ESS without any depression related ICD codes. Patients with a prior history of opioid use were excluded. Cohorts were matched for age, sex, and race. The primary outcome was postoperative opioid utilization, defined as the number of opioid prescriptions within 6 months after ESS. A t-test was used to assess statistical significance between the means. Results: The exposure group consisted of 258 patients and the control group consisted of 594 patients who met the final criteria. The mean number of opioid prescriptions was higher among patients with MDD (1.341, SD=1.381) compared to those without depression (1.088, SD=1.103). This difference was statistically significant ($t = 2.848$, $p = 0.0045$). Conclusions: Patients with recurrent MDD had significantly greater opioid utilization following ESS compared to patients without depression. Further research is needed to better understand this association and inform post-operative pain management strategies.

TRIO011. A Scoping Review of Cost Analyses in Endoscopic Sinus Surgery: Economic Trends, Cost Drivers, and Methodological Gaps - Authors: Neha Rana, BA; Daniel Spielman, MD; Daniel Swanson, MD; Ethan Tsao, BS

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the economic trends that drive endoscopic sinus surgery to analyze cost landscapes.

Objectives: Endoscopic sinus surgery (ESS) is used to treat chronic rhinosinusitis (CRS), a prevalent yet costly inflammatory condition. This study aims to synthesize cost analyses of ESS for CRS, placing a focus on cost drivers, methodological gaps in the literature, and economic trends. Study Design: Scoping review. Methods: A scoping review was performed in accordance with PRISMA-ScR guidelines. A literature search was conducted using major databases (MEDLINE, Embase, Cochrane CENTRAL, Web of Science) from inception to April 2025. Studies were then filtered and selected based on predefined eligibility criteria, and the data were tabulated on cost components as well as key findings. Results: 1,660 articles were identified and 35 of these studies met inclusion criteria. ESS costs ranged from $7,445 to $34,667. Key cost drivers included OR time, facility fees, revision surgery, and CRS subtype. Out-of-pocket expenses as well as indirect costs were often excluded from these studies. Conclusions: ESS for CRS introduces a wide range of costs, largely dependent on comorbidities and the surgical setting. The current literature underlines the necessity for standardized cost reporting while also emphasizing the cost-effectiveness of ESS in comparison to biologic treatments, demonstrating that more transparent cost definitions and reporting frameworks may enlighten the future of cost-effective strategies in otolaryngologic care.

TRIO012. Adverse Events Associated with Septal Splints: An Analysis of the MAUDE Database - Authors: Sujay Ratna, BS; Eric Gong, BA; Alfred Iloreta, MD; Satish Govindaraj, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to identify infection/inflammation as the most common and significantly more frequent adverse event associated with septal splints.

Objectives: This study aims to quantify and characterize adverse events associated with septal splints reported to the U.S. Food and Drug Administration's Manufacturer and User Facility Device Experience (MAUDE) database. Study Design: Retrospective cross-sectional database review. Methods: MAUDE was queried for reports involving septal splints from January 1, 2015, through December 31, 2024. Only screened reports that described patient adverse events were included. For each included report, event narratives and device problem codes were assigned to one mutually exclusive category: bleeding, infection/inflammation (post-placement infectious or inflammatory sequelae), pain, sterility (pre-use sterility or packaging concerns), or other. Descriptive statistics summarized counts and proportions. Category frequencies were compared using chi-square tests (two-sided Î±=0.05). Results: Of 148 unique reports in the final cohort, 104 (70.3%) described patient adverse events. Among these, infection/inflammation was most common (44.2%), followed by other complications (27.9%), sterility concerns (17.3%), bleeding (5.8%), and pain (4.8%). In pairwise comparisons, infection/inflammation occurred significantly more often than bleeding ($p<0.001$), pain ($p<0.001$), and sterility ($p=0.013$). No other comparisons (bleeding vs pain, bleeding vs sterility, pain vs sterility) were statistically significant. Conclusions: Infection and inflammation were the most commonly reported adverse events linked to septal splints, occurring more frequently than bleeding, pain, or sterility-related issues. These findings support careful postoperative monitoring for infectious/inflammatory sequelae and attention to device handling and packaging integrity. Continued post-market surveillance, along with refinements in splint materials, design, and sterilization/packaging processes, may help reduce device-related complications.

TRIO013. An Analysis of the Fellowship Trained Rhinology Workforce in the United States - Authors: Andrew J. Rothka, MD; Nathan Barefoot, BS (Presenter); Taylor J. Stack, MD; Priya Desai, BS; Brent A. Senior, MD; Adam J. Kimple, MD PhD

Educational Objective: At the conclusion of this presentation, the participants should be able to analyze and understand the distribution of fellowship trained rhinologists across the United States.

Objectives: Rhinology has emerged as a rapidly growing subspecialty within otolaryngology, offering advanced care for complex sinonasal and skull base disorders. As fellowship training in rhinology has expanded, understanding the current distribution of fellowship trained specialists is critical to addressing workforce needs and ensuring equitable access to care. Prior analyses of subspecialty distribution have highlighted disparities between urban and rural regions, yet similar data for rhinology remain limited. This study aims to characterize the geographic and practice setting distribution of fellowship-trained rhinologists across the United States. The objectives of this study are to identify current practice locations of rhinologists in the United States and compare distribution of rhinologists between urban and rural settings. Study Design: Cross-sectional study. Methods: This study utilized publicly available data to identify fellowship trained rhinologists, their primary practice location, and their fellowship training location. The 2023 Rural-Urban Continuum Codes were used to classify metropolitan (codes 1-3) and non-metropolitan sites (codes 4-9) and determine local populations. Results: A total of 407 rhinologists (76.7% men) were identified across 46 states/territories. Slightly more than half of rhinologists practiced in academic settings (n=216, 53.1%). There were 398 rhinologists (97.8%) in metropolitan counties serving 146,202,159 people with 0.3 rhinologists per 100,000 people (0.3/100k). Conversely, there were only 9 rhinologists (2.2%) in non-metropolitan counties (i.e. list a couple areas?). Overall, these 9 rhinologists served 549,574individuals (1.6 rhinologists/100k people). The majority of rhinologists are

located in urban counties designated by code 1 (n=310, 76.2%). Conclusions: 98% of rhinologist are located in metropolitan areas. For a lucky 5 million people, they reside in a non-metropolitan areas and have access to a rhinologist. Comprehending the implications of this counterintuitive distribution of subspecialists is essential for understanding gaps in access to care, referral patterns, and workforce planning, particularly in metropolitan settings where patient volume is typically higher.

TRIO014. Comparison of Airway Deposition Pattern for Nebulized Drug Delivery During Nasal Only Versus Nasal Oral Inhalations - Authors: Ryan M. Sicard, BS; Dennis O. Frank-Ito, PhD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the impact of inhalation through the nose alone versus the nose and mouth combined in drug particle deposition at several subsites of the airway with jet and mesh nebulizers.

Objectives: This study investigates the impact of inhalation pathway on nebulizer deposition in the airway. Study Design: Computational study involving extensive nebulization deposition assessment in a healthy subject with normal airway anatomy. Methods: Computed tomography scans were used to recreate two airway models of a healthy subject simulating nasal-only (N) inhalation and the other nasal-oral inhalation (NO). The airway was divided into nasal cavity, pharynx, larynx, trachea, and bronchopulmonary regions. Computational fluid dynamics was used to simulate inhalation at 18L/min. Mesh nebulization was simulated with nebulized rates of 0.15 and 0.25 mL/min, plume velocities of 0.1 and 0.5 m/s, and particle sizes of 1-5 microns. Jet nebulization utilized the same nebulized rate, plume velocities of 10 and 20 m/s, and particle sizes of 4-8microns, in accordance with prior studies. Results: Nasal-only inhalation with a jet nebulizer outperformed nasal-oral inhalation and provided maximal delivery to the nasal (N:4.8%, NO:1.8%), pharyngeal(N:2.9%, NO:0.92%), and tracheal (N:0.33%, NO:0.31%) regions. Nasal-oral inhalation with a jet nebulizer resulted in superior deposition in the larynx (NO:2.9%, N:0.50%) while with a mesh nebulizer it resulted in higher bronchopulmonary deposition (NO:99.4%, N:98.8%). Jet nebulizer 20m/s velocity was superior for the nasal cavity, pharynx, and trachea regardless of nebulized rate. Higher velocities for mesh nebulizers were better, irrespective of nebulized rate for nasal and laryngeal deposition. Conclusions: Jet nebulizer showed superior upper airway subsite depositions with nasal-oral inhalation, and nasal cavity and pharynx deposition with nasal-only inhalation. Mesh nebulizer showed better bronchopulmonary deposition for both nasal-only and nasal-oral inhalation.

TRIO015. Topical Prevention of Recurrent Idiopathic Epistaxis, a Systematic Review and Meta-Analysis - Authors: Drew H. Smith, MD MS; Hannah Seo, BS; Daniel Stuart, PhD MLS; Jad Zeitouni, BBA; Jeb Justice, MD; Yusuf Dundar, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to better understand the existing literature that evaluates the efficacy of topical treatments for preventing recurrent idiopathic epistaxis.

Objectives: Epistaxis is one of the most frequent pathologies in medicine, yet research has generally focused on the treatment of complex pathologic causes of epistaxis, such as hereditary hemorrhagic telangiectasia, and prescription medication for controlling acute epistaxis in an emergency setting. Few studies have evaluated over-the-counter topical agents (such as nasal saline spray, petroleum jelly, antibiotic ointment) to prevent recurrent idiopathic epistaxis. This review evaluates the existing randomized controlled trials (RCT) to better elucidate which readily available topical treatments may be most efficacious for preventing recurrent idiopathic epistaxis. Study Design: Systematic review and meta-analysis. Methods: PubMed, Embase, and other databases were searched in accordance with PRISMA guidelines to identify RCTs of topical, non-prescription treatment for preventing recurrent idiopathic epistaxis. Evaluators carefully screened the identified studies and excluded non-relevant findings. Topical treatments consisted of antiseptic cream, neomycin cream, petroleum

jelly, 0.05% xylometazoline and an oil-based antibacterial ointment. The main outcome measured was resolution of epistaxis. Results: From 1267 initial studies imported for screening, 9 RCTs met criteria for inclusion. 640 patients with an average age of 13.5 years were evaluated. Follow-up periods ranged from 4 weeks to 5 years, with a median time of 8 weeks. Among the 9 studies, only one study demonstrated a topical treatment (Neomycin cream) that effectively resolved epistaxis, with a relative risk of 1.89 (p-value: 0.02, CI 1.10 to 3.25). The combined relative risk for all subjects was 1.14 (p-value: 0.09, CI 0.98 to 1.32). I2 was 0 percent. Conclusions: There is no conclusive evidence that supports one type of nasal moisturizer over another to prevent recurrent idiopathic epistaxis, with minimal evidence that any moisturizer is more effective than no treatment. However, most studies were small with limited follow up. Further research of topical treatments should focus on larger cohorts with longer followup and more direct comparisons.

TRIO016. Factors Associated with Repeat Endoscopic Sinus Surgery: Insights from the TriNetX Research Network - Authors: Daniel Uralov, MD; Janvi J. Shukla, BA; Sarah R. Harrington, BA; Abdulghafoor Alani, BS; Emma J. Anisman, BA; Gurston G. Nyquist, MD

Educational Objective: At the conclusion of this presentation, participants should be able to identify key clinical and demographic factors associated with increased risk of repeat endoscopic sinus surgery and understand its overall incidence in a large multicenter cohort.

Objectives: To identify factors associated with repeat endoscopic sinus surgery (ESS) using a large, multicenter electronic health record (EHR) database. Study Design: Retrospective cohort study. Methods: A retrospective cohort study was conducted using the TriNetX Research Network. Adults who underwent ESS between 2012 and 2022 were identified using CPT codes 31253 - 31259, 31267, 31276 and 31287 - 31288. Patients were grouped as single-ESS or repeat-ESS (procedure repetition >/=1 month after index). All patients had at least 36 months of postoperative follow-up. Over 50 demographic and clinical variables were compared. Standardized mean differences (SMDs) quantified effect size, and $p < 0.05$ was considered significant. Results: Among 97,863 patients, 8,021 (8.2%) underwent repeat ESS during follow-up. The 3-year cumulative incidence of repeat ESS was 6.9%. Mean age at first ESS was 47.5 years in both cohorts, and demographics were well balanced. Repeat-ESS patients had higher rates of nasal polyps (54% vs 24%; SMD = 0.64; $p < 0.001$) and multisinus disease: maxillary (59% vs 32%), ethmoidal (49% vs 19%), frontal (37% vs 11%), sphenoidal (29% vs 9%), and pansinusitis (53% vs 24%) (all $p < 0.001$; SMD 0.53-0.65). Systemic comorbidities were also enriched: asthma (39% vs 20%), COPD (9% vs 4%), GERD (39% vs 22%), obesity (24% vs 14%), type 2 diabetes (16% vs 10%), fungal disease (24% vs 11%), and cystic fibrosis (6% vs 1%) (all $p < 0.001$; SMD 0.18-0.43). Conclusions: Within 3 years of surgery, approximately 7% of ESS patients required a repeat intervention. Key predictors included nasal polyposis, diffuse CRS, lower-airway disease, and systemic comorbidities.

TRIO017. Comparative Predictive Capacity of Frailty Indices for Postoperative Morbidity and Extended Length of Stay in Rhinoplasty - Authors: Akshay Warrier, BA; Rushikesh Pande, BA; David Wassef, MD; Christian Bowers, MD; Jean Anderson Eloy, MD FACS

Educational Objective: At the conclusion of this presentation, the participants should be able to distinguish between frailty indices and understand the utility of the Risk Analysis Index in rhinoplasty risk stratification. To compare the predictive capacity of the Risk Analysis Index (RAI) and Modified Frailty Index-5 (mFI-5) in stratifying postoperative morbidity and mortality among patients undergoing rhinoplasty.

Objectives: To compare the predictive capacity of the Risk Analysis Index (RAI) and Modified Frailty Index-5 (mFI-5) in stratifying postoperative morbidity and mortality among patients undergoing rhinoplasty. Study Design: Retrospective cohort analysis of 1014 patients from 2005-2020. Methods: Patients undergoing rhinoplasty patients from the ACS-NSQIP database (2005 - 2020) were analyzed. Frailty was measured using RAI

and mFI-5. Multivariable logistic regression assessed associations between frailty and postoperative outcomes, including mortality, Clavien-Dindo complications, wound complications, extended length of stay (eLOS), and non-home discharge (NHD). Model discrimination was evaluated using receiver operating characteristic (ROC) analysis. Results: The RAI was significantly associated with major postoperative complications in multivariate analysis. Specifically, a high RAI score was associated with Clavien-Dindo Class IV (OR 5.75, 95%CI 2.05-16.09) and Wound Dehiscence (OR 8.62, 95%CI 1.56-47.76). mFI-5 status was not statistically associated with eLOS. In ROC analysis, the RAI demonstrated superior discrimination for most complications, including Clavien-Dindo Class IV (AUC 0.855), Wound Dehiscence (AUC 0.844), and eLOS (AUC 0.724). Furthermore, RAI showed superior prediction for Clavien-Dindo Classes I, II, and IIIb, and Superficial SSI. mFI-5 showed superior discrimination only for Clavien-Dindo Class V (AUC 0.894 vs RAI AUC 0.730) and Organ/Space SSI. Overall, RAI showed superior or comparable discrimination for 9 of 11 key postoperative outcomes assessed. Conclusions: Both RAI and mFI-5 are valuable preoperative risk stratification tools. However, the RAI demonstrated superior discriminatory capacity across the majority of complication categories and extended length of stay, supporting its primary use for preoperative risk screening in the rhinoplasty population.

TRIO018. WITHDRAWN

TRIO019. Allergy Immunotherapy and Endoscopic Sinus Surgery in Chronic Rhinosinusitis: Effects on Need for Revision Surgery - Authors: Ryan S. Ziltzer, MD MPH; John Dewey, MD; Hassan H. Ramadan, MD MSc

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the limited benefit of pre-/postoperative allergy immunotherapy with regards to reducing the need for revision sinus surgery in chronic rhinosinusitis with comorbid allergy.

Objectives: This study aims to examine the effects of allergy immunotherapy (AIT) on need for revision endoscopic sinus surgery (ESS) in chronic rhinosinusitis (CRS) with comorbid allergy. Study Design: Retrospective cohort study. Methods: Adults with CRS and allergy--with allergy testing--who underwent ESS between January 2006 and August 2025 were queried from TriNetX, a population database using EMR data from over 70 U.S. healthcare organizations. Cohorts either did or did not have AIT within 3 years before to 1 year after first ESS and were propensity-score matched based on age, sex, smoking, nasal polyps, and asthma. Risk and number of revision ESS and frequency of acute sinusitis (AS) infections were compared using t-test. Time to revision ESS was assessed with Kaplan-Meier log-rank test. Subgroup analyses were conducted for asthma and nasal polyp statuses. Polyp subgroup analysis included matching for pre-ESS dupilumab. Results: Matched cohorts each had 1,667 patients (N=3,334), mean follow-up was 5.8 years. AIT and non-AIT patients had no difference in rate of revision ESS (11.6% vs 12.7%, p=.34), number of revisions (1.3 vs 1.3, p=.38), time to revision (p=.41), or AS frequency (mean 3.7 vs 3.8, p=.89). Outcomes were also comparable in asthma, non-asthma, polyp, and non-polyp subgroups (p less than .05). Conclusions: In CRS patients with allergy, ESS revision rates do not appear to differ with AIT around time of initial surgery. Further studies are needed to assess possible effects on quality of life and other outcomes.

FACIAL PLASTIC AND RECONSTRUCTIVE

TRIO020. A Comprehensive Large Database Analysis of Outcomes of Zygomaticomaxillary Complex Fracture Repair with and without Orbital Floor Fracture Repair - Authors: Robert E. Africa, MD; Shahrukh R. Ali, MD; Charles A. Hughes, MD MPH MBA; Viran J. Ranasinghe, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the differences in outcomes when orbital floor fracture repair is performed during zygomaticomaxillary complex fracture repair. Surgical and orbital complications and outcomes will be highlighted.

Objectives: To evaluate differences in postoperative outcomes and complications following zygomaticomaxillary complex (ZMC) open reduction and internal fixation (ORIF) with or without orbital floor fracture repair. Study Design: Multicenter, retrospective cohort study utilizing de-identified patient data from the United States. Methods: Patients aged 18 years or older with a ZMC and orbital floor fracture were identified in the TriNetX database. They were then grouped by ZMC ORIF with or without orbital floor ORIF. Outcomes included osteomyelitis, wound disruption, nonunion/malunion, surgical site infection, jaw pain, trismus, diplopia, orbital hemorrhage, ptosis, and exophthalmos. Relative risks (RR) of the outcomes with 95% confidence intervals were evaluated at 6 months and 1 year. Results: Combination ZMC with orbital floor ORIF had a significantly higher rate of osteomyelitis compared to ZMC ORIF alone at 1 year after surgery (RR: 1.97[1.29-3.01]), but the rate was similar at 6 months (RR: 1.74[0.99-3.05]). Similarly, there was also associated with a higher rate of wound disruption (RR: 1.41[1.03-1.95]). Jaw pain was higher among patients who did not undergo orbital floor ORIF (RR: 0.55[0.36-0.86]). Diplopia, orbital hemorrhage, ptosis, and exophthalmos were significantly elevated among patients who underwent combination ZMC with orbital floor ORIF (RR: 2.83[2.36-3.39]; 2.13[1.30-3.49]; 2.23[1.79-2.78]; 2.74[2.25-3.34]. There were no differences in malunion/nonunion, surgical site infection, and trismus. Conclusions: Patients who underwent combination ZMC/orbital floor ORIF had a significantly higher associated risk of osteomyelitis, wound disruption, jaw pain, and multiple orbital complications compared to patients who had ZMC ORIF alone.

TRIO021. Investigating the Mechanobiological Responses of Burned Skin Scar Tissue Fibroblasts to Histamine - Authors: Alexandros Afthinos, MD PhD; Dylan Bowen, BS; Nicholas C. Purdy, DO; Marc G. Jeschke, MD PhD; Panagiotis Mistriotis, PhD; Darren F. Boehning, PhD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the role of histamine signaling, specifically via H1 receptors, in modulating calcium dynamics and proliferation in burn scar derived fibroblasts, and to explore the potential of H1 antagonists as therapeutic agents for mitigating hypertrophic scarring.

Objectives: This study aimed to investigate the effects of histamine on calcium signaling, proliferation, and cell death in primary burned skin fibroblasts (BSFs) derived from patients' hypertrophic scars in comparison to their normal skin fibroblasts (NFs) and to identify the histamine receptors mediating this response. Study Design: This was an in vitro mechanistic study comparing the cellular responses of BSFs and NFs to histamine and receptor specific antagonists. Methods: Primary BSFs and NFs were exposed to histamine at 0.1 μM, 1 μM, and 10 μM. Intracellular calcium flux was measured using Fura-2 AM, assessing the proportion of responsive cells, peak intensity, time to peak, and area under the curve. Histamine receptor involvement was probed using a panel of antihistamines. Cell proliferation (via cell counts) and cell death (via Ki-67 staining) were quantified over three days under histamine, loratadine (H1 antagonist), or combination treatment. Results: BSFs exhibited higher baseline calcium levels and a significantly greater response to 1 μM histamine than NFs (53% vs. 40% responsive cells, $p < 0.05$). Loratadine abolished calcium responses in both cell types, implicating the H1 receptor. Histamine induced a trend toward increased BSF proliferation (260% vs. 212% under vehicle control), while loratadine significantly suppressed proliferation in both NFs (296% to 11%, $p < 0.05$) and BSFs (212% to 38%, $p < 0.05$) without increasing cell death. Conclusions: Histamine differentially enhances calcium signaling in BSFs more than NFs through H1 receptor activation, while loratadine mitigates their calcium influx and proliferation. These findings highlight histamine's role in wound healing and suggest that H1 antagonists can be potential therapeutic candidates for modulating pathological scarring after burns.

TRIO022. Facial Plastic and Reconstructive Surgeons in the United States: A Workforce Analysis - Authors: Shreya R. Bhalla, BS; Najm S. Kahn, MD MBS; Swara Ramaswamy, MM; Adriana C. Diaz, BS; Rushikesh Pande, BS; Joseph B. Vella, MD PhD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the geographic distribution and density of facial plastic and reconstructive surgeons in the United States.

Objectives: Understand the geographic distribution and density of facial plastic and reconstructive surgeons (FPRS) in the United States. Study Design: Cross-sectional. Methods: A national database of fellowship trained FPRS (fFPRS) and non-fellowship trained FPRS (nFPRS) was curated by using publicly available data, including the American Academy of Facial Plastic and Reconstructive Surgery and ENTHealth. Demographic information was collected. To evaluate population statistics, the United States Census Bureau population data were grouped by hospital referral region (HRR), as defined by the Dartmouth Healthcare Atlas. The National Resident Matching Program was also accessed for fellowship match data. Results: A total of 1330 FPRS were identified, of whom 66.9% were fellowship trained. Most completed an otolaryngology residency, but 2.5% (n = 33) of surgeons graduated from a non-otolaryngology residency. The workforce was predominantly male, with women comprising 18.8% of all surgeons. In total, surgeons averaged 20.4 +/= 12.3 years in practice. Fellowship-trained surgeons averaged 18.0 +/= 10.9 years in practice compared to 25.0 +/= 13.6 years among non-fellowship trained peers. The greatest concentration of FPRS in an HRR was Los Angeles (n = 66), followed by Manhattan (n = 48). Conclusions: Preliminary findings of the first comprehensive analysis of practicing FPRS reveal a workforce consisting mainly of fellowship trained surgeons. Most FPRS commonly reside in highly dense metropolitan areas, contributing to regional disparities. Future analyses will include a forecasting model to determine the workforce outlook in 2045.

TRIO023. Safety and Efficacy of the Bilobed Flap in Head and Neck Reconstruction: A Systematic Review - Authors: Claire E. Brescher, BS; Srivatsa S. Vasudevan, MD MS; Gabrielle Cassagne, BS; Rodrigo M. Monedero, MD FACS; Cherie-Ann O. Nathan, MD FACS

Educational Objective: At the conclusion of this presentation, the participants should be able to assess the safety, efficacy, and aesthetic outcomes of the bilobed flap in head and neck reconstruction.

Objectives: To assess the efficacy and safety of the bilobed flap for reconstructing defects following head and neck cancer resection. Study Design: Systematic Review. Methods: Comprehensive searches of PubMed, Embase, and other major databases were conducted to identify studies reporting outcomes of the bilobed flap in head and neck reconstruction. Extracted data included anatomical site and donor site of the flap, recipient and donor site complications, aesthetic outcomes and recurrence outcomes. The systematic review was performed according to PRISMA guidelines, and study quality was assessed using the Newcastle-Ottawa Scale. Results: Of 298 articles screened, 41 studies were included, comprising 1,404 bilobed flap reconstructions in head and neck cancer patients. The cohort was 51.4% male, with a mean age of 63.2 years (SD 13.0). Nasal defects accounted for the majority of reconstructions (75.8%), followed by the cheek (9.1%) and periorbital regions (3.2%). Notably, 7% were pedicled myocutaneous bilobed flaps from the pectoralis major or trapezius, while the majority (93%) were random flaps. Overall, 79% of patients experienced no complications. The most common recipient site complications were pin cushioning (9.4%), scarring (5.5%), and partial necrosis (1.6%). Donor site complications were rare, including wound dehiscence (0.3%) and infection (0.1%). Aesthetic satisfaction was high, with 94.4% of patients reporting favorable outcomes. Flap revision was required in 4.0% of cases, and tumor recurrence was reported in 0.5%. Conclusions: This systematic review demonstrates that the bilobed flap is a reliable and versatile option for head and neck reconstruction, with high rates of flap survival, low incidence of major complications, and favorable aesthetic and functional outcomes. Reported rates of aesthetic dissatisfaction and need for revision surgery were low, and donor site morbidity was minimal.

TRIO024. Timing of Septorhinoplasty and Septoplasty Following Nasal Trauma Involving the Septum - Authors: Sarah Chang, MSc; Kylie Tang, BA; Emma Kraus, MPH; Ogechi Nwankwoala, BS; Frances Rodriguez-Lara, MD; Waleed Ezzat, MD

Educational Objective: To identify how the time between nasal trauma and septal surgery may influence breathing outcomes and the likelihood of complications/revisions.

Objectives: Examine whether injury-to-surgery interval is associated with outcomes after septoplasty or septorhinoplasty for septal trauma. Study Design: Systematic Review. Methods: We searched PubMed/MEDLINE, Embase, and Web of Science per PRISMA guidelines. Inclusion criteria: peer-reviewed studies of post-traumatic septoplasty or septorhinoplasty reporting postoperative outcomes. Exclusion criteria: conference abstracts; no English translation. Results: 8 studies (303 patients) met criteria. The majority (97%) underwent early septoplasty or septorhinoplasty within 2-3 weeks post-trauma, while 9 patients (3%) underwent delayed septorhinoplasty. Injury-to-surgery interval ranged from 1 to 304 days (mean = 24.4, median = 15, SD = 53.9). Five studies (n = 189) reported complications. Among early septoplasty cohorts (n = 110), mean time to surgery was 13.36 days with mean follow up of 11.45 months; 3 complications occurred (2.7%). In early septorhinoplasty studies (n = 70), mean time to surgery was 15.2 days with mean follow up of 2.6 years; no complications occurred. The delayed septorhinoplasty cohort (n = 9) had a mean time to surgery of 304 days with a mean follow up 25.4 months, and 1 infection resulting (11.1 %). One comparative study (n = 50) demonstrated earlier intervention significantly reduced the need for secondary surgery. However, complications were not reported. Conclusions: Early septal surgery shows lower observed complication rates, but evidence is limited. Only 1 of the 8 studies involve delayed surgery. Current practice to delay definitive septoplasty or septorhinoplasty 3-6 months seems consensus-based rather than evidence based. This highlights a significant gap in the current literature, warranting future comparative studies with standardized reporting of outcomes and complication rates.

TRIO025. Predictors of Loss to Followup after Operative Facial Trauma - Authors: Aileen Z. Cui, BS; Sabrina S. Goyal, MD; Adaora A. Okigbo, MS; Viraj N. Govani, BA; Kevin J. Contrera, MD MPH; Christina M. Yver, MD MBA

Educational Objective: At the conclusion of this presentation, the participants should be able to identify sociodemographic and clinical factors associated with missed initial postoperative appointment in the operative facial trauma population.

Objectives: Outpatient follow-up following operative intervention for facial trauma is critical; however, non-compliance remains a pervasive issue. This study aims to identify factors associated with missed initial post-operative appointment. Study Design: This is a retrospective case control study. Methods: Patients who underwent operative facial trauma intervention by an otolaryngology provider between January 2020 and April 2025 were evaluated. Sociodemographic, clinical, and operative data were collected. Statistical analysis was performed using STATA, with significance set at $p<0.05$. Results: Of 196 patients, 30 (15.31%) missed their initial post-operative appointment. Patients were less likely to attend their initial appointment if they self-identified as African American (odds ratio [OR] 0.245 (0.095, 0.64) , p=0.0024), lacked private insurance (OR 0.20 (0.072, 0.56), p=0.009), had a higher Area Deprivation Index (national: 80.82+/-19.10 vs, 65.05+/-23.79, p=0.0011; state: 7.89+/-2.41 vs. 5.99+/-2.78, p=0.008), underwent surgery on an inpatient basis (OR 0.24 (0.11, 0.56), p=0.0003), presented with isolated midface trauma (OR 0.30 (0.11, 0.83, p=0.015), or were discharged to a location other than home (OR 0.30 (0.11, 0.82), p=0.0098). Isolated nasal trauma (OR 3.10 (1.31, 7.37), p=0.0079) and having a follow-up appointment scheduled at discharge (OR 3.61 (1.62, 8.06), p=0.0011) were protective. After multivariate analysis, missed appointments remained independently associated with isolated midface trauma (adjusted odds ratio aOR 0.17(0.036,0.80), p=0.025), race (aOR 0.24(0.063, 0.94), p=0.041) and follow-up scheduled at discharge (aOR 5.27(1.65, 18.14), p=0.005). Conclusions: Missed follow-up after

operative intervention for facial trauma is associated with multiple sociodemographic and clinical factors. Scheduling post-operative appointments before discharge may increase the odds of outpatient follow up.

TRIO026. Outcomes Following Facial Feminization Surgery: A Multi-Institutional Analysis - Authors: Najm S. Khan, MD MBS; Katherine Chrisbacher, BS BFA; Peiyi Su-Genyk, MD; Joseph B. Vella, MD PhD FACS

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the rate of dysfunctional outcomes following facial feminazation surgery.

Objectives: Large studies of facial feminization surgery (FFS) are scant. This study aims to determine the rate of physiologic and functional complications following FFS. Study Design: Retrospective cohort study of 47 healthcare organizations. Methods: The TriNetX database was queried for patients aged >/= 18 years with a diagnosis of gender dysphoria who underwent FFS between 2014 - 2024. FFS was classified as having any combination of scalp advancement, cranioplasty, brow lift, blepharoplasty, rhinoplasty, cheek augmentation, upper lip lift, rhinoplasty, mandibuloplasty, facelift, or chondrolaryngoplasty. Functional outcomes were evaluated using ICD-10 codes and were grouped into nasal (chronic sinusitis, chronic rhinitis, vasomotor/allergic rhinitis, nasal obstruction, nasal congestion, postnasal drip), neurological (headache, facial/trigeminal nerve disorders, chronic pain), and laryngeal (dysphonia and dysphagia) complications. The time period evaluated was the year following FFS. Results: A total of 1918 patients with a mean age of 35.4 +/= 12.7 years were included. The majority were White (72.6%), and 5.7% were Black. Most resided in either the Northeast (40%) or the West (39%). Overall, patients had an 8.2% chance of having a functional dysfunction within 1 year following FFS. The complication rates observed for each functional category were as follows: nasal (5.1%), throat (3.2%), and neurologic (2.9%). Conclusions: The largest analysis of FFS in the United States shows this surgery is relatively safe, with functional dysfunction being uncommon in the year following surgery.

TRIO027. Breaking the Roof: Toward a Universally Validated Classification of Orbital Roof Fractures and Its Impact on Surgical Decision Making Across the Lifespan - Authors: Adam S. Meyer, BS; Kerol Faltas, BA (Presenter); Amber Sun; Ochuwa P. Imokhai, BS MHSc; Zarin Kothari, BS; Marc Faltas, BA

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the current limitations of orbital roof fracture classification systems and recognize how a standardized framework can improve surgical decision-making and reconstructive outcomes across multidisciplinary care teams.

Objectives: To evaluate current orbital roof fracture classification systems relevant to facial plastics and reconstructive surgery, identify limitations in their design, validation, and highlight priorities for standardized, multidisciplinary surgical care. Study Design: Scoping review following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) guidelines. Methods: Following PRISMA-ScR methodology, a systematic search of PubMed, Embase, and Web of Science (2000-2025) identified studies that proposed, evaluated, or compared orbital roof fracture classification systems. The research included human studies using radiologic, morphologic, and functional frameworks linked to management or outcomes. Two reviewers performed independent title and abstract screening followed by a blinded full-text review. Five variables were extracted and analyzed: study design, sample size, fracture criteria, validation process, and surgical correlation. The assessment of study quality evaluated methodological clarity, validation rigor, and relevance for reconstructive surgical procedures. Results: Twenty-three studies met the inclusion criteria. No systems demonstrated external validation, while only four studies included quantitative reproducibility data. The studies showed wide variation in their classification methods: displacement thresholds varied between 1-4 mm, and defect size cutoffs (greater than 4 cmÂ²) lacked consistency. Pediatric frameworks omitted developmental scaling features or prognostic evaluation methods. The studies showed weak connections between surgical requirements and three factors: comminution, dural exposure, and ocular dysfunction. The

field now recognizes AI-assisted morphometric modeling as a potential tool to create standardized 3D imaging assessments and achieve consistent results. Conclusions: Existing orbital roof fracture classifications remain inconsistent and lack validated decision thresholds. Developing an ENT-led, standardized framework that integrates morphologic, functional, and developmental criteria may improve surgical consistency and treatment comparability across specialties.

TRIO028. Short Wave Infrared Imaging for Small Vessel Visualization in Paramedian Forehead Flaps - Authors: Roy K. Park, MD; Seth Davis, MD; Mark S. Nyaeme, MD; Fred M. Baik, MD; Sam Most, MD; Tulio A. Valdez, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to describe the advantages of short-wave infrared (SWIR) imaging over conventional near-infrared (NIR) angiography for assessing vascularity in paramedian forehead flaps.

Objectives: The paramedian forehead flap is a workhorse in nasal reconstruction, relying on the supratrochlear artery to provide vascularized tissue. Near-infrared (NIR, 700-900 nm) fluorescence angiography with indocyanine green (ICG) is commonly used to assess flap perfusion but can be limited in visualizing small vessels beneath thick tissue, limiting microvasculature details. Short-wave infrared (SWIR) imaging (1000 - 1400 nm) offers improved tissue penetration, reduced scattering, and lower autofluorescence, potentially enhancing vascular visualization.

This study aims to leverage SWIR imaging to improve vascular assessment of paramedian forehead flaps during ICG angiography. Study Design: Prospective study in a tertiary academic center. Methods: Conventional NIR images were obtained using the SPY Elite (Stryker) system, while SWIR images were acquired simultaneously with a custom setup (Goldeye G32 or C-RED2 camera) using the same excitation source and long-pass filters from 1050 to 1300 nm. Results: 8 patients undergoing paramedian forehead flap reconstruction were enrolled. NIR images provided an average contrast ratio of 1.3 when comparing blood vessels to background tissue. Contrastingly, SWIR imaging increased vessel contrast to 1.9 with a 1200 nm long pass. SWIR imaging enhanced vessel contrast and allowed precise differentiation of arteries, veins, and capillaries. Conclusions: SWIR imaging significantly improved vessel contrast and microvascular visualization compared to conventional NIR imaging. This study represents the first use of SWIR perfusion imaging across multiple wavelengths in paramedian forehead flap reconstruction and suggests that the technology may enhance intraoperative assessments.

TRIO029. Case Report on Treatment of Post-Radiation Cervical Dystonia and Trismus with Concurrent Botulinum Toxin and Physical Therapy - Authors: Swara Ramaswamy, MM; Craig Bollig, MD; Joseph Vella, MD PhD; Peiyi Su-Genyk, MD

Educational Objective: At the conclusion of this presentation, participants should be able to understand the potential synergistic role for Botulinum toxin (Botox) and physical therapy for the treatment of cervical dystonia and trismus following radiation therapy.

Objectives: Describe the clinical course of two patients with post-radiation cervical dystonia and trismus who were treated with botulinum toxin injection; review suggested Botox injection maps for these pathologies. Study Design: Case Report. Methods: Both patients are 58 year-old males presenting with unilateral cervical dystonia, temporomandibular joint syndrome, and trismus following surgery and radiation therapy for squamous cell carcinoma of the head and neck. One patient was treated with 32 units of Botox to the right masseter, 28 units to the right trapezius, and 8 units to the right sternocleidomastoid muscle. The second patient was treated with 32 units to each masseter, 36 units to the right trapezius, and 32 units to the left trapezius. The second patient was referred to physical therapy within 2 weeks of treatment. Patients were seen at

three weeks post-injection, at which time range of motion and pain relief were evaluated. Results: Patient 1 observed improvement in mouth opening, progression of diet from liquids to solids, and subjective relief of tension three weeks post-injection. However, his shoulder range of motion was not improved, and the authors hypothesize this is due to lack of physical therapy at the time of injection. Patient 2 underwent physical therapy within two weeks of his Botox injection and experienced functional improvement in neck and shoulder range of motion, new ability to raise arms over his shoulders, and decrease in cervical tension. Both patients are scheduled for repeat treatments every three months due to observed symptomatic improvement. The authors have provided their Botox injections maps to assist in the reproducibility of this treatment by other providers. Conclusions: This case report highlights the importance of combining botulinum toxin injection with concurrent physical therapy for post-radiation cervical dystonia, trismus, and TMJ.

TRIO030. Comparing Pharyngeal Flap and Sphincter Pharyngoplasty Outcomes for the Treatment of Velopharyngeal Insufficiency in Cleft Patients: A Systematic Review and Meta-Analysis - Authors: Pushti Shah, BA MBA; Disha Patil, BS (Presenter); Rushikesh Pande, BS MS; Steven Ovadia, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the efficacy of both pharyngeal flap and sphincter pharyngoplasty for the treatment of velopharyngeal insufficiency and realize both have similar rates of VPI resolution, hypernasality, and complications. Providers should also note higher risks of sleep apnea with pharyngeal flap, suggesting patients with existing sleep disorders should opt for sphincter pharyngoplasty. Overall, this study emphasizes the importance of individualized surgical management and standardized outcome reporting in future studies to guide this decision-making and patient selection.

Objectives: Velopharyngeal insufficiency (VPI) refers to incomplete closure of the velopharyngeal port and can occur as a complication of primary cleft palate repair. Pharyngeal Flap (PF) and Sphincter Pharyngoplasty (SP) are commonly employed operations utilized to treat VPI, but there is no consensus on which yields better outcomes. The purpose of this review was to compare the efficacy of these operations for VPI resolution and various other outcomes. Study Design: Systematic Review and Meta-Analysis. Methods: The PubMed, Embase, and World of Science databases were searched in October 2024. Studies with clinical data on both procedures were included if patients were non-syndromic and received primary cleft palate surgery. Reviews, letters, case reports, and cadaver studies were excluded. Meta-analysis was performed using a random effects model and the leave-one-out method for sensitivity analysis. Results: Ten articles (n=531 patients) were included, with 292 patients receiving PF and 239 receiving SP. Meta-analysis yielded insignificant differences in VPI resolution (OR:1.44, 95% CI:0.87 to 2.36, p=0.15, I2=0%) or in hypernasality incidence (OR:0.94, 95% CI:0.33 to 2.71, p=0.91, I2=61%). Sleep apnea was shown to be significantly higher in PF patients after sensitivity analysis (OR:3.59, 95% CI:1.01 to 12.84, p=0.05, I2=0%). Overall complication and reoperation rates were similar in patients receiving PF and SP (p=0.39 and p=0.13, respectively). Conclusions: PF and SP can both treat VPI with similar rates of resolution of VPI, hypernasality, and complications. SP showed a lower incidence of sleep apnea after sensitivity analysis. Authors publishing on either of these techniques should consider standardized reporting of outcomes to help delineate optimal selection criteria for either procedure.

TRIO031. Do Nasolabial and Marionette Folds Improve after Deep Plane and SMAS Facelifts?: A Blinded Quantitative Assessment of Publicly Shared Cases - Authors: Rahul Sinha, DO; Allison Altman, DO; Andrew Yun, DO; Allan Wulc, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the degree of benefit the deep plane facelift (DPFL) and SMAS facelift have in addressing the nasolabial folds (NLF) and marionette lines (ML) achieved by a select group of AAFPRS's surgeons as featured on their professional websites.

Objectives: To quantify the extent to which the deep plane and SMAS facelift addresses NLF and ML. Study Design: Retrospective, blinded photo assessment. Methods: Public, pre- and post-operative facelift photos were sourced from AAFPRS board certified surgeons' websites. Surgeons were chosen to standardize sampling and ensure geographic diversity. Inclusion required: all procedures listed, greater than or equal to 6 months specified postoperative images, full-face views, no editing, and no heavy makeup in postoperative photos. Of 319 surgeons reviewed, 24 met criteria; 135 patients were included. A custom Python GUI captured blinded ratings where NLFs were graded with the Wrinkle Severity Rating Scale, and the ML were graded with the Marionette Lines Grading Scale. Preliminary analysis included 46 patients graded by two laypeople. Surgical technique was classified into DPFL and SMAS (plication/imbrication variants). Wilcoxon signed-rank tested pre/post change, while Mann-Whitney U compared techniques. Results: Wilcoxon signed-rank testing showed no significant median change for NLF (W=165.5, p=0.788) with a significant improvement for ML (W=58.0, $p=4.12x10^{-5}$). There was no significant difference between techniques for NLF (p=0.76) or ML (p=0.30). Conclusions: Preliminary results showed that facelift improved marionette lines but not nasolabial folds, with no detectable difference between DPFL and SMAS techniques. Larger, balanced cohorts with multi-rater grading are needed to confirm technique effects and refine patient counseling and are forthcoming.

TRIO032. Rigid Maxillomandibular Fixation Versus Dynamic Elastic Therapy for Subcondylar Fractures: A Systematic Review - Authors: Rahul Sinha, DO; Andrew Yun, BS; Solomon Husain, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to systematically review functional outcomes of closed-reduction strategies for mandibular subcondylar fractures and identify the appropriate clinical contexts for each technique.

Objectives: Systematic comparison of the impact of rigid maxillomandibular fixation (MMF), dynamic elastics, and hybrid protocols (rigid MMF followed by elastic therapy) for patients with subcondylar fractures, assessing variables of mouth opening, mandibular deviation, lateral and protrusive excursion, pain, occlusal stability, and radiographic parameters. Study Design: Systematic review of randomized and observational studies with qualitative synthesis. Methods: We reviewed topically identified English language randomized controlled trials, cohort studies, and case-control trials in PubMed, Embase, Scopus, and Cochrane Library entries from January 1, 2000, to May 31, 2025. Reviewed studies included the following criteria: mean patient age >/=16 years with unilateral subcondylar fractures that were managed with MMF and/or elastics. Reviewed studies included >/=1 prespecified outcome and greater than or equal to 6-month follow-up. Exclusion criteria included condylar head/neck fractures, case reports, a mean age less than 16 years, and a follow-up of less than 3 months. Of 212 records screened, 15 studies met review criteria. Results: Across all three different treatments, maximal incisal opening commonly reached 37 - 46 mm by 6 months. Hybrid protocols tended to produce earlier gains in mobility but showed higher rates of early deviation or malocclusion that generally normalized by 6 - 12 months. MMF cohorts demonstrated a more definitive occlusion at final follow-up, although this was a slower process. Elastic therapy produced progressive improvement with small, often minimal (<2mm) residual deviations at 12 months following treatment. Pain declined over time in all groups; limited data suggested lower levels of pain soon after treatment with hybrid approaches. There was considerable heterogeneity in follow-up intervals, measurement techniques, and outcome definitions. Conclusions: Closed reduction strategies yield satisfactory long-term functional recovery for subcondylar fractures. MMF may be preferable when occlusal stability is paramount, whereas elastic and hybrid protocols can accelerate early range-of-motion at the cost of transient asymmetries. Technique selection should be individualized to fracture pattern, rehabilitation priorities, and patient tolerance. Standardized outcome sets and longer head-to-head comparative studies are needed.

TRIO033. Understanding the Impact of Facial Feminization Surgery on Romantic Relationships: A Quality of Life Study - Authors: Hyun Song, BA; Omar Fernandez, MD; Andrew H. Lee, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the dynamic impact of Facial Feminization Surgery on intimate relationships between patients and their romantic partners. Takeaways include quality-of-life benefits of FFS and actionable insights for comprehensive preoperative counseling for a more holistic gender affirming care.

Objectives: Facial feminization surgery (FFS) is a pivotal gender affirming procedure shown to significantly alleviate body dysmorphia and improve mental health in transgender individuals. While the psychosocial and mental health benefits of FFS are well-documented, its impact on patients' intimate relationships remains poorly understood, despite the significant influence of these relationships on quality of life. This study aims to explore how FFS impacts intimate relationship dynamics through a qualitative approach, thereby contributing to the growing body of evidence on the quality-of-life benefits of FFS and supporting more comprehensive preoperative counseling strategies. Study Design: Qualitative descriptive study. Methods: Patients who underwent FFS and their significant others were separately interviewed using a semi-structured approach. Open-ended questions captured participants' experiences with FFS, encompassing recovery process and results, and changes in intimate relationship. Data from an estimated 8 total interviews are being analyzed using a modified grounded theory approach using Dedoose software to identify emerging themes. Results: Participants reported significant increases in patients' self-confidence, which translated into increased feelings of safety in relationship dynamics. Additionally, patients acknowledged their partner's critical role in the recovery process, regardless of any conflicts that predated the surgery. Specific thematic analysis is still under review. Conclusions: This is the first study to our knowledge that explores the role of gender affirming surgery in informing relationship dynamics, which plays a crucial role in recovery and long-term mental health outcomes. The findings from this research can provide actionable insights for relationship-oriented discussions in preoperative counseling, helping to foster a more holistic approach to gender affirming care.

TRIO034. Viral Infections Associated with the Development of Bell's Palsy: A National Database Study - Authors: Amy Wang, BA; Rahul K. Sharma, MD; Irene A. Kim, MD; Scott J. Stephan, MD; Priyesh N. Patel, MD; Shiayin F. Yang, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the relationship between viral infection and Bell's palsy.

Objectives: Bell's palsy (BP) is considered an idiopathic disease, but a post-viral etiology has been postulated based on evidence suggesting viral infections may trigger inflammatory demyelinating conditions of the nervous system. We aim to investigate the relationship between viral infections and the development of BP. Study Design: TriNetX Database Study using the U.S. Collaborative Network. Methods: Patients with a diagnosis of human herpes viral infection (HSV, VZV, EBV, CMV) and Bell's palsy patients were identified using International Classification of Disease (ICD-10) codes. Cohorts were compared to controls propensity matched for age and sex. Outcomes analyses were performed to assess the independent association between prior viral infections, and a diagnosis of BP. Retrospective analysis was also performed to identify additional diagnoses associated with the BP patient cohort. Results: There were 2,526,250 patients with a diagnosis of viral infection, matched with an equal number of control patients. There were 16,670 patients with prior viral infection that developed BP, compared to 8,134 of the matched controls (RR 2.049, RR 1.996-2.104, $p<0.0001$). There were 321,262 BP patients identified. The rate of viral infection in the non-BP population was 1.59% and the rate of viral infection in patients with BP was 3.98% ($p<0.0001$). HSV, VZV, EBV, and CMV were all independently associated with BP. Rates of COVID-19 infection, medication use, and synkinesis will also be analyzed. Conclusions: Patients with certain viral infections had a two-fold increased risk of developing BP. Additional investigation on the physio-

logical mechanism underlying this relationship is warranted.

TRIO035. Augmented Reality Assisted Orbital Prosthesis Implantation Using Patient Specific Bone Density Mapping - Authors: Emily G. Warda, BS; Brandon Strong, PhD; Sukhkaran Aulakh, M.D.; Arnaud Bewley, MD; Hilary Brodie, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to reflect on how augmented reality (AR) and patient specific bone density mapping can enhance precision and intraoperative visualization in complex maxillofacial implantation and rehabilitation.

Objectives: This case report aims to describe the application of AR assisted navigation in maxillofacial reconstruction and highlight the integration of bone density data to optimize implant positioning and fixation. Study Design: Single-patient case report. Methods: A 70-year-old male with a history of invasive fungal sinusitis status post maxillectomy and orbital exenteration (2021) and right maxillary reconstruction and sphenoidectomy (2022) presented for placement of two osseointegrated bone anchored abutments to support an orbital prosthesis. Preoperative planning was performed using CT data processed through proprietary and open-source software to generate a 3D model incorporating patient specific bone density mapping and proposed implant sites. Data was integrated into Xironetic's AR application, IntraOpVSP, running on the Microsoft HoloLens 2 headset. An AR registration reference array was secured to the right cranium, and landmark registration was performed with the HoloLens 2 and Xironetic registration stylus. Fine-tuning of the hologram in 3D optimized its position relative to the operative field. With the surgeon wearing the head mounted display, holographic images were intermittently visualized to confirm implant trajectory, angulation, and bone density alignment. Sequential drilling was performed using the Ponto system and the prosthetic abutments were then screwed onto the osseointegrated screws. Results: The AR overlay provided precise real time alignment of the planned implant trajectories with the patient's actual orbital topography, confirming adequate bone density and angulation. Both abutments were successfully placed at the superior and inferior lateral orbital rims without intraoperative complications. Postoperative evaluation demonstrated appropriate positioning of the osseointegrated implants and a well healed orbital defect, ultimately allowing for improved prosthetic fitting and fixation. Conclusions: This case demonstrates the feasibility and precision of augmented reality assisted orbital rehabilitation guided by patient-specific bone density mapping. The integration of AR visualization with preoperative planning and intraoperative navigation allowed for accurate implant positioning and improved spatial awareness in a complex post-maxillectomy orbital defect. AR guided workflows may enhance surgical accuracy and efficiency in maxillofacial reconstruction, particularly in anatomically distorted or previously operated fields.

TRIO036. Mandible Fracture Symptomatology: Characterizing the Impact of Individual Symptoms on Satisfaction, Quality of Life, and Psychosocial Health - Authors: Aaron L. Zebolsky, MD; Travis J. Clarke, MD (Presenter); David M. Weatherford, BS; Evan Heldt, BS; Jillian P. Krebs, MD; Anas Eid, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand individual, patient-reported symptoms that influence overall satisfaction, quality-of-life, and psychosocial health in patients suffering mandible fractures.

Objectives: This study was designed to identify individual patient-reported symptoms that influence satisfaction, quality-of-life (QOL), and psychosocial health in those with mandible fractures using the Integrated Modular Patient-Reported Outcome Assessment for Craniomaxillofacial Trauma (IMPACT). Study Design: Prospective survey study. Methods: Patients with mandible fractures presenting for routine follow-up completed the IMPACT General (IMPACT-G) and Jaw (IMPACT-J) modules plus a 15-Dimension QOL (15D) control survey. The primary outcome was the correlation between individual symptoms on the IMPACT-J and Overall Satisfaction (from the IMPACT-G), QOL (from the 15D), and Psychosocial Function (from the IMPACT-G). Multi-

variable regression coefficients, Beta (B), with 95% confidence intervals (CI) were used to identify independent associations while controlling for age, sex, race, and type of treatment. Institutional approval was obtained and all patients provided informed consent. Results: A total of 45 patients with mandible fractures were included (male: 86.7%; median age: 35; Racial or ethnic minority, 57.8%). They were managed with a soft diet alone (n=4, 8.9%), maxillomandibular fixation (n=30, 66.7%), open reduction internal fixation (n=29, 64.4%), and/or external fixation (n=3, 6.7%). After controlling for baseline factors, Overall Satisfaction was independently associated with difficulty eating (B=0.526, 95% CI: 0.059 - 0.994, p=0.030) and appearance of the jawline (B=0.801, 95% CI: 0.267 - 1.342, p=0.007). QOL was independently associated with trouble drinking (B=0.549, 95% CI: 0.058 - 1.040, p = 0.031). Psychosocial Function was independently associated with the appearance of the neck (B=0.744, 95% CI: 0.064 â€“ 1.424, p=0.034) and teeth (B=1.140, 95% CI: 0.032 â€“ 2.248, p=0.044). Conclusions: In patients with mandible fractures, trouble eating, trouble drinking, and appearance of the jawline, neck, and teeth were symptoms with the strongest impact on satisfaction, QOL, and psychosocial health. Prioritizing these items may help optimize patient-reported outcomes.

GENERAL

TRIO037. OTIC Rubric: Initial Validation Study of Tympanotomy, Mastoidectomy, and Stapedotomy Core Assessments and Component Skills - Authors: Gabriella M. Adams, BS; Peter G. Volsky, MD

Educational Objective: At the conclusion of this presentation, the participants will have knowledge of the initial analysis of performance metrics of the OTIC Rubric. By highlighting 3 core assessments (tympanotomy, intact canal-wall mastoidectomy, and stapedotomy) the study provides evidence of the Rubric's construct and response validity. This work is submitted in parallel with a report on the development of the OTIC Rubric.

Objectives: Study the construct validity of the Otosurgical Techniques Instruction and Competency (OTIC) Rubric. Study Design: Cohort study of otolaryngology residents' intraoperative performance assessment by a single rater. Methods: Three core (global) assessments [tympanotomy, intact canal-wall (ICW) mastoidectomy, and stapedotomy] and their component skills (tasks) were subjected to correlation analyses of scores over time, number and frequency of attempts, and resident training year; simple and multiple linear regression (MLR) assessed relationships between task and global scores. Results: Linear regressions of individuals' global scores over time improve in 69% of learners. Global and task scores correlate positively with attempts (r=0.43, p=0.01). Shorter intervals between attempts are associated with higher scores and vice versa, especially in stapedotomy (r=-0.84, p=0.02). Some component skills relate strongly with global scores, e.g. chorda and mallear ligament dissection for tympanotomy (r=0.8, p less than 0.02), antrum and mastoid tip dissections for mastoidectomy (r greater than 0.85, p less than 0.001), and prosthesis placement for stapedotomy (r=0.81, p less than 0.001). Resident year correlates only with mastoidectomy score (r=0.40, p=0.02); mixed effects regression shows no association (β=1.27, p=0.18). MLR showed a strong association between task and mastoidectomy with shared variance across tasks (R^2=0.789, adjusted R^2=0.746, F=18.09, p≈3 x 10-8) and a clear multivariable signal of all stapedotomy tasks (R^2=0.931, adjusted R^2=0.861, F=13.41, p=0.00143). Conclusions: In the context of 3 core assessments, there is evidence of construct validity of the OTIC Rubric in the assessment of primary training in otologic surgery, and subjective response validity is demonstrated. Tasks appear predictive of global performance, affirming the Rubric's utility as a useful skills assessment and teaching tool.

TRIO038. Programming Changes in Hypoglossal Nerve Stimulation Patients with Stimulation Discomfort - Authors: Iman Adibi, BS; Aaron Tucker, BA; Zachary Wong, BS; Amala Nayak, BS; Ryan S. Nord, MD

Educational Objective: Following this presentation, participants will appreciate the benefits of hypoglossal nerve stimulation (HNS) device reprogramming in improving device comfort and adherence.

Objectives: Hypoglossal nerve stimulation (HNS) is an effective treatment for obstructive sleep apnea. As device reprogramming is commonly used to address discomfort, we aim to quantify the impact of specific programming changes on future discomfort and device utilization. Study Design: Retrospective cohort. Methods: Patients who underwent HNS implantation between 2020-2024 who reported stimulation discomfort and were managed with device reprogramming were included. Average therapy utilization (hrs), total nights used (%), nights used 4+ hrs (%), and pauses per night were collected. Stimulation amplitude (V), pause time (min), and start delay (min) were compared pre- and post-adjustment. Baseline demographics and Sher 20 rates were recorded. Results: 43 patients met inclusion criteria. Mean age and BMI at implantation were 60.6 +/= 10.8 years and 29.4 +/= 2.8 kg/m2. Sher criteria was met in 17 of 29 (59%) patients. Cohort mean programming changes included amplitude reduction (-0.26 V), increased pause time (+2.0 min), and increased start delay (+5.8 min, each $p<0.01$). 57% reported complete resolution of discomfort, and patients demonstrated improvements in per night use (+1.3 hrs), total nights used (+15.5%), and nights used 4+ hrs (+19%, all $p<0.01$). Discomfort-resolution rates ranged from 50% to 67% across programming types. Amplitude only adjustments demonstrated improved device utilization (n=17, +2.4 hrs/night, +20% total nights, +36% nights 4+ hrs, -0.5 pauses per night; $p<0.05$ for each). Start delay/pause time changes and combined-parameter changes were not associated with a statistically significant increase in therapy utilization. Conclusions: For patients experiencing HNS stimulation discomfort, programming changes were associated with improvements in subjective discomfort and nightly adherence; amplitude reduction appeared most effective.

TRIO039. Hearing Loss Among the Uninsured Population - Authors: Layla Ali, BA; Samuel Salib, BS; Nick Toomey, MD; Katelyn Addison, BS; Janeth Garcia, BS; Doron Sagiv, MD

Educational Objective: This study aims to investigate the relationship between insurance status and hearing health outcomes in patients receiving care within a free clinic and tertiary healthcare system.

Objectives: To evaluate the impact of insurance status on hearing thresholds and hearing related habits. Study Design: A cross-section study comparing hearing outcomes between uninsured patients at free clinics to insured patients at a tertiary academic medical center. Methods: Adults aged greater than 18 years were recruited from three free clinics and outpatient offices. Participants completed a questionnaire on subjective otologic symptoms, socioeconomic factors, and prior hearing loss diagnosis followed by air conduction pure tone audiometry (PTA). Statistical analyses adjusted for age as a confounding factor. Results: Fifty-nine patients were enrolled (28 free clinics, 31 private clinics). Private clinic patients were more likely to have a formal hearing loss diagnosis (19.4 percent vs 3.6 percent), despite free clinic patients reporting a higher prevalence of subjective symptoms (35.7 percent vs 19.4 percent). Private clinic patients had higher PTA thresholds (32.7 plus or minus 12.4 vs 23.3 plus or minus 12.2 dB HL, p is equal to 0.005). After adjusting for age, PTA differences did not meet significance. Occupational noise exposure was more common among free clinic patients (35.7 percent vs 19.4 percent), though not statistically significant. Conclusions: Differences in audiometric thresholds between participant populations are primarily explained by age, whereas diagnostic disparities highlight systemic barriers in safety-net healthcare settings, underscoring the need for patient-centered hearing screening and referral protocols to address gaps in hearing healthcare access for uninsured populations.

TRIO040. Advanced Practice Providers: Insights from 10 Years of the Medicare Part B Database - Authors: Eric J. Allen, BSA; Julia J. Shi, BA; Brandon Isaacson, MD; Rance J. T. Fujiwara, MD MBA

Educational Objective: At the conclusion of this presentation, the participants should be knowledgeable of national trends in advanced practice provider (APP) workforce growth, procedural activity, and geographic distribution. Attendees will gain insight into how APP roles have expanded over the past decade and how this growth remains concentrated in urban areas, recognizing these trends for workforce planning and considering strategies that promote more uniform and equitable access to otolaryngologic care nationwide.

Objectives: Advanced practice providers (APPs), including nurse practitioners (NPs) and physician assistants (PAs), have become increasingly essential in a multitude of medical specialties including otolaryngology. Their national utilization patterns have not been well described. Study Design: Cross-sectional analysis of CMS Medicare Part B Provider database from 2013 to 2023. Methods: APPs and physicians in otolaryngology specialties were identified using the AAO-HNS top 100 CPT codes. Codes which were not specific to otolaryngology were removed. The number of otolaryngology providers and CPT codes performed were recorded for each calendar year. Geographic practice location was mapped across the United States, and changes in APP distribution over time were evaluated. Results: The number of APPs grew by 72%, compared to a 1.2% decrease in the number of otolaryngologists. Billed CPT codes increased by 137.3% from 2013 to 2023, with the most frequently billed procedures being cerumen removal (n = 30,449), diagnostic laryngoscopy (n = 7,441), and diagnostic nasal endoscopy (n = 5,244). APP workforce growth was concentrated in urban regions (RUCA 1: +97%), whereas rural areas saw declines (RUCA 7: -32%; RUCA 10: -32%). Florida, Pennsylvania, and California exhibited the largest absolute increases in APPs. The geographic distribution of NP-specific workforce growth did not correlate with states that grant NPs independent practice authority. Conclusions: These findings demonstrate substantial national growth of the APP workforce in otolaryngology, but in a persistently urban pattern, highlighting the need for targeted policies and rural training programs to ensure equitable access to otolaryngologic care in underserved rural areas.

TRIO041. Characterizing the Effects of the Single Accreditation System on the Otolaryngology Match: A Ten Year Retrospective Review - Authors: Allison R. Altman, DO; Rahul Sinha, DO; Sarah Shugar, BS

Educational Objective: At the conclusion of this presentation, the participants should be able to analyze a decade long trend of osteopathic (DO) and allopathic (MD) matches in otolaryngology under the Single Accreditation System (SAS).

Objectives: To evaluate the impact of the SAS on DO and MD representation in otolaryngology residency programs over a ten-year period, with attention to program characteristics such as program director (PD) degree, former American Osteopathic Association (AOA) affiliation, and current osteopathic recognition. Study Design: Retrospective cohort study. Methods: A total of 131 ACGME accredited otolaryngology-head and neck surgery programs were reviewed from 2015-2024, encompassing five years before and after SAS implementation. Archived data for non-transitioned osteopathic programs were obtained from the AOA. Final analysis included 129 programs. Independent samples t-tests were used to evaluate associations between DO representation and program characteristics. Estimated marginal means of DO and MD resident counts were analyzed over time. Results: Programs with DO PDs, prior AOA status, or current osteopathic recognition had significantly higher numbers of DO residents ($p < 0.05$). The overall proportion of DO residents in otolaryngology declined following SAS implementation (EMM: pre-SAS = 0.27, post-SAS = 0.17; $p = 0.006$). Conclusions: The SAS has been associated with a reduction in DO representation in otolaryngology residencies; however, programs with osteopathic leadership or recognition are more likely to include DO residents. These findings highlight how increased advocacy and mentorship for DOs pursuing surgical subspecialties may promote DO representation and diversity in the otolaryngology community.

TRIO042. Shifting Metrics in the Otorhinolaryngology Residency Match: Trends from the NRMP Program Director Survey - Authors: Orr Amar, BS; Dhiraj Ramireddy, BS (Presenter); Shreya Guha, BS; Ziad Kedkad, BS; Jose L. Puglisi, PhD; Michael S. Wong, MD MBA FACS

Educational Objective: At the conclusion of this presentation, the participants should be able to distill the broad array of metrics that otorhinolaryngology program directors use to evaluate an applicant, including identification of the most impactful categories and their respective trends over the past 17 years.

Objectives: Examining how otorhinolaryngology program director applicant preferences have responded to major changes in the residency process since the COVID-19 pandemic, especially the Pass/Fail grading system for USMLE Step 1. Study Design: Longitudinal Retrospective Analysis of National Resident Matching Program (NRMP) Program Director Survey data in Ranking Applicants for Otorhinolaryngology. Methods: Data regarding ranking otorhinolaryngology applicants were extracted from all publicly available NRMP Program Director (PD) Surveys from 2007-2024. A composite score was generated by multiplying the mean importance rating (1 to 5 scale) and the percentage of programs citing the factor to provide a weighted measure of significance. For data analysis, composite scores were examined longitudinally from 2007 to 2024 and were stratified into high (greater than 3.5), intermediate (2.5 to 3.4), and low (less than 2.4) weighted tiers to facilitate standardized comparison across time. Results: The highest weighted ranking factors (greater than 3.5) were consistently interview impressions and resident feedback. Letters of recommendation, professionalism, and leadership, occupied intermediate tiers (2.5 to 3.4), while research involvement, life experience, volunteering, and elective rotations ranked lower (less than 2.4). Conclusions: Step 1 becoming Pass/Fail has not affected Otorhinolaryngology Program Directors priorities; they continue to rank applicants based on communication skills during the interview. Research production has been doubling every 7 years, so the recent research benchmarks of matched Otorhinolaryngology applicants cannot wholly be attributed to the Step 1 grading change. A significant drop in volunteer and work activities since the COVID-19 pandemic may be attributed to the unavailability of such opportunities.

TRIO043. Outcomes of Hypoglossal Nerve Stimulator Implant in Obstructive Sleep Apnea Patients with Various Health Statuses - Authors: Adrienne E. Biskaduros, BS; Ahmad Saeed, BS; Ashutosh Kacker, MBBS MD

Educational Objective: At the conclusion of this presentation, the participants should understand that key medical and psychiatric co-morbidities may impact therapeutic response to hypoglossal nerve stimulator implantation in patients with obstructive sleep apnea.

Objectives: Hypoglossal nerve stimulator implants (HGNS) are increasingly prevalent in management of moderate-to-severe obstructive sleep apnea (OSA). In this abstract, we aim to investigate whether apnea-to-hypopnea index (AHI) reduction is impacted by common medical and psychiatric comorbidities. Study Design: Charts of patients who underwent HGNS implantation with pre-operative AHI of 65 or below were reviewed at a single institution. Methods: ANOVA and Multivariate logistic regression analyses on AHI and demographics and medical comorbidities were performed on RStudio. Outcomes for logistic analysis pertained to whether patients had a 50% or more percent reduction in AHI post-operatively or not. Results: 204 patients were identified for analysis, with N=174 males and N=30 females. With ANOVA, significant differences to AHI over time were only observed in patients with obesity (F=7.539, p=0.0066), but no significant differences were observed due to sex (F=0.13, p=0.718), anxiety (F=1.251, p=0.265), depression (F=0.481, p=0.489), or hypertension (F=1.99, p=0.16). Multivariate logistic analysis revealed significant differences in post-operative AHI at 12-months due to male sex with an odds ratio (OR) of 0.0831 (p=0.0445), and near significant differences due to diabetes (OR=34.2, p=0.0892), (depression (OR=11.2, p=0.0678) and anxiety (OR=0.0808, p=0.0882). However, no significant differences were attributed to obesity (OR=1.23, p=0.767) or hypertension (0.791, p=0.760). Conclusions: Our investigation reveals HNGS implantation may yield less treatment success in male patients and those with obesity. Furthermore, our results indicate patients with depression trended toward improved therapeutic response to HNGS, while those with anxiety trended toward poorer responses. These findings may help otolaryngologists better predict treatment responses and select HNGS candidates based on patient demographics and comorbidities.

TRIO044. Longitudinal Assessment of Tracheostomy Skills at the Primary Care Provider Level: An Effectiveness Implementation Study - Authors: Gabrielle Cahill, MD MPH; Christian M. Kabongo, BS (Presenter); Nour Mary Aissaoui, BS MS; John Bukuru, MD MMED MASS; Edgard Gasana, MD MMED; Mary Jue Xu, MD; Gratien Tuyishimire, MD MMED

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the evaluation of tracheostomy care skills and their retention following implementation of simulation-based training

Objectives: Evaluate retention of tracheostomy care skills following simulation-based training. Study Design: Type I hybrid effectiveness-implementation. Methods: Our team has created a one-week simulation-based otolaryngology training at a medical school in a low-income country where medical students all go on to become primary care providers (PCPs). Despite significant interest in simulation for medical education in low- and middle-income countries (LMICs), objective assessment of technical skills acquired and retained from training is lacking. This study aimed to objectively evaluate tracheostomy skills retained over time using a low-cost tracheostomy simulation model. A tracheostomy skills assessment was administered to medical students before, immediately after, and 10 weeks after simulation-based training. Implementation outcomes including appropriateness, acceptability, and effectiveness were also assessed with pre- and post-intervention surveys. Results: Skills increased from 0.59/5 prior to the bootcamp to 4.40/5 by its end ($p<0.001$). Skills were retained at 10 weeks post-training (average 4.27/5, 97% retention, $p=0.33$). All surveyed participants agreed managing tracheostomies was relevant to PCPs and reported the sessions were valuable and enjoyable. Confidence on tracheostomy assessment and management increased from an average of 1.53 on a 5-point Likert scale to 3.85 ($p<0.0001$). Knowledge increased from an average of 2.2/4 (55%) to 3.7/4 (92.7%) ($p<0.0001$). Conclusions: Tracheostomy procedural skills significantly improved after simulation-based training and were retained at 10 weeks post-training. The program was feasible, contextually appropriate, highly acceptable, and effective in enhancing confidence, knowledge, and technical performance.

TRIO045. Retrospective Review of Temporal Artery Biopsies: Trends, Outcomes, and Diagnostic Value in Suspected Giant Cell Arteritis - Authors: Priya J. Desai, BS; Nathan R. Barefoot, BS; Elena Quinonez Del Cid, BS; Christine E. DeMason, MD; Doris Lin, MD

Educational Objective: Learners should be able to evaluate the utility of temporal artery biopsies in cases of suspected giant cell arteritis (GCA) and describe how both positive and negative biopsy results affect clinical management.

Objectives: Temporal artery biopsy remains the diagnostic gold standard for suspected GCA despite variable rates of positivity, the procedure's invasiveness, and the rise of minimally invasive diagnostic approaches. This study aims to assess the prevalence of positive temporal artery biopsy findings and evaluate the clinical impact of biopsy results on patient management at a tertiary medical center. Study Design: Single-center retrospective cohort study. Methods: Utilizing i2b2, 331 patients who underwent unilateral or bilateral temporal artery biopsy at our institution between January 2023 and July 2025 were identified. Charts were reviewed for data on presenting symptoms, time from referral to biopsy, specialty performing the biopsy, pathology results, and post-biopsy clinical management, including steroid dose adjustments and initiation of other immunomodulators. Results: Patient ages ranged from 31 to 92 years old, with a mean of 70.98 years, 78% of the cohort were female, and the most common symptoms were headache, jaw pain, and new-onset vision changes. Mean time from referral to biopsy was 10.5 days. Multiple departments performed biopsies: general surgery (42.4%), ophthalmology (27.12%), otolaryngology (18.64%), and vascular surgery (11.86%). The positivity rate for biopsies was 8.62%. Among patients with negative biopsies, 54.24% continued immunosuppressant therapy post-biopsy. Conclusions: At the institution, temporal artery biopsies showed a diagnostic yield of 8.62%. Despite

the high rate of negative results, clinical management was rarely altered in this cohort. The persistent use of steroid therapy following negative biopsy highlights the need to consider other diagnostic modalities that may enable faster and less invasive diagnosis for GCA.

TRIO046. Workforce Analysis of Clinically Focused Endocrine Otolaryngologists in the United States - Authors: Adriana Diaz, BS; Shreya R. Bhalla, BS; Rushikesh Pande, BS; Sneha Subhash Menon, BA; Ariana Shaari, MD; Craig Bollig, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the demographics of clinically focused endocrine surgeons, particularly in terms of fellowship completion and geographic location, and predict workforce demographics in 20 years.

Objectives: Clinically focused endocrine otolaryngologists (CFEOs) represent a distinct subspecialty responding to demand for specialized thyroid, parathyroid, and neck endocrine procedures. Yet, an updated national characterization of this workforce and its future trajectory remains lacking. This study aims to look at the current demographic of CFEOs in the US and project workforce trends through 2050. Study Design: We assembled a national cohort of practicing CFEOs by filtering publicly accessible data sources, where otolaryngologists self-identified their practice was endocrine focused, including the American Head and Neck Society (AHNS), fellowship program website. Methods: CFEOs were further classified based on fellowship training completion, gender, residency background, and estimated years in practice. Current practice locations were geocoded and linked to hospital referral regions (HRRs) for regional workforce analysis. Future workforce projections were modeled using recent endocrine fellowship graduation trends and a 35-year career duration assumption. Results: A total of 345 CFEOs were identified, of whom 9.56% were head and neck endocrine surgery fellowship-trained (FT). A total of 63.7% pursued a non-head and neck endocrine surgery fellowship. The workforce was predominantly male at 76.5%, with women comprising 23.5%. FT surgeons averaged 7 years in practice, compared to 13 years among non-FT peers. The greatest number of CFEOs were found in Boston (N= 21) and Manhattan (N= 20). Boston, MA and Baltimore, MD were the most saturated HRRs, demonstrating a low population per surgeon ratio. Forecasting models project a gradual shift in workforce composition, driven by the increasing number of fellowship-trained surgeons entering the field. Conclusions: CFEO workforce trends suggest a modest increase in fellowship trained surgeons, though variability in fellowship program availability may influence growth. Strategic alignment of training program growth with regional workforce needs may be critical to ensuring equitable access to specialized head and neck endocrine care across the United States.

TRIO047. High Fidelity Nasal Airway Phantom for Flexible Laryngoscopy - Authors: Kiran Ganga, BS; Jessalyn Li, BS; Jerome M. Tullo, BS; Joseph A. Paydarfar, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the utility of a 3D-printed nasal airway phantom for flexible laryngoscopy training.

Objectives: To develop and assess the anatomical accuracy, maneuverability, and educational value of a 3D-printed nasal airway phantom for flexible laryngoscopy training to reduce reliance on live subjects and improve learner confidence and skill. Study Design: Simulation-based educational study. Methods: A mid-face/nasopharynx base was 3D printed with polylactic acid filament from a normal adult sinus CT scan. The base was designed to allow for interchangeable nasal airway models simulating normal and pathologic nasal anatomy. For this study, a single nasal airway model was created using segmented nasal anatomy from the CT scan and a negative mold was 3D printed using water-soluble filament. Dragon Skin 15 silicone rubber was poured into the mold yielding a flexible model. During a three-week simulation, 19 experts (10 otolaryngology attendings, 3 otolaryngology residents, 6 otolaryngology physician assistants) rated anatomical accuracy, maneuverability, and educational value of the nasal phantom using 5-point Likert scales. A workshop for medical students, led by an attending

otolaryngologist, included an education session, demonstration, and guided practice for each student. Students were given pre- and post-training surveys evaluating confidence, procedural understanding, and anatomical knowledge. Results: Experts rated the phantom highly. The mean anatomical accuracy rating was 4.53+/=0.56, mean maneuverability was 4.45+/=0.50, and mean educational utility was 4.74+/=0.44. Among students, procedural understanding increased from 1.20 to 4.33, confidence from 1.07 to 3.67, and anatomical knowledge from 2.40 to 4.47 ($p<0.01$ for all). Conclusions: The 3D-printed phantom provides accurate anatomy, good maneuverability, and strong educational value, supporting its use as an effective, low-cost laryngoscopy training tool.

TRIO048. Routine Tonsillectomy Pathology Rarely Identifies Unexpected Malignancy: A Safety Net Hospital Experience - Authors: Zachary N. Goldberg, MD; Anjali Pillai, MD; Asritha Sure, BS; Gregory Grillone, MD; Grace Zhao, MD PhD; Michael Platt, MD MSc

Educational Objective: At the conclusion of this presentation, the participants should be able to identify differences in incidence of tonsillar malignancy among adult and pediatric patients according to preoperative risk stratification.

Objectives: The clinical utility of routine pathological assessment following tonsillectomy in safety net hospital populations is understudied. We evaluated differences in incidence of tonsillar malignancy in adult and pediatric patients, stratified by preoperative risk. Study Design: Retrospective cohort study of adult and pediatric tonsillectomy patients from January 2022 to June 2025 at a large Northeastern U.S. safety net hospital. Methods: Pathology reports were screened to identify malignant cases. Chart review was conducted to obtain demographic data, preoperative Charlson Comorbidity Index (CCI), and clinical assessments to stratify malignancy risk as expected, suspected, or unexpected. Non-parametric statistical analyses were conducted to compare suspected and expected sub-groups across tumor type and comorbidity status. Results: Among 749 total cases, no pediatric specimens (0/307) and 20 adult specimens (4.5%, 20/442) were malignant. Of adult malignancies, 65% were squamous cell carcinoma and 35% hematologic. Ninety-five percent were stratified as expected or suspected preoperatively. Fisher's Exact test comparing malignancy type with preoperative stratification was not significant ($p=0.628$). CCI scores between expected and suspected cases were also non-significant (Mann-Whitney $U=0.32$). Conclusions: No malignancies were identified in the pediatric cohort, and nearly all adult malignancies were suspected or expected preoperatively. These findings question the value of routine pathological examination for tonsillectomy specimens without clinical suspicion in safety net settings, suggesting an opportunity for more targeted resource use.

TRIO049. Front Page Representation: Analysis of Transparency and Diversity Across Academic Otolaryngology Department Websites - Authors: Maeher R. Grewal, MD; Caitlin Faust, BS; Reema Padia, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to identify potential department website features that attract prospective applicants and describe how they differ by program size and department leadership.

Objectives: In today's internet age, otolaryngology department rosters and mission statements are primary sources for prospective residents and faculty. However, inaccuracies and ambiguity obfuscate applicant access to critical decision-making information. This study sought to analyze the transparency of otolaryngology department websites and assess differences based on leadership and size. Study Design: Cross-sectional investigation of ACGME-accredited otolaryngology department websites and rosters. Methods: Faculty/resident photographs and biographies, alumni pages, social media, and diversity commitment statements were recorded from department websites. Odds ratios and logistic regressions were calculated with program leadership gender and residency size. Results: Of the 125 department websites queried, 107 (85.6%) displayed faculty

photographs, and 62 (49.6%) biographies; 112 (89.6%) showed resident photographs and 61 (48.8%) biographies. The odds of resident biography inclusion were 2.47 times greater for programs led by women (P=0.02) and increased 6% for every additional resident (P=0.05). 30 programs (24.0%) had out-of-date or unlisted resident rosters (mean 1.4 years; range: 1-5 years). 67 (53.6%) programs listed alumni; 35 (28.0%) linked social media, most commonly, Instagram (N=30, 24.0%). 58 (46.4%) departments mentioned commitment to diversity; each additional resident decreased the odds of visible commitment by 6% (P=0.03). Conclusions: 85-90% of departments displayed residency/faculty photographs, yet fewer than half offered further personal information; programs led by women were more likely to include resident biographies. One-fourth had inaccurate rosters; nearly half did not include alumni, and three-fourths lacked social media links. Majority excluded diversity statements which were negatively correlated with program size. As technology increasingly drives recruitment, such features may increase website transparency for applicants.

TRIO050. Analysis of Widely Available Database Use in The Laryngoscope 2017-2024 - Authors: Samuel Hopper, MD; Jason Lee, MD; Garner Fincher, BS; Abby Mechatto, BS; Glen Myatt, BS; Christopher Spankovich, Aud PhD MPH

Educational Objective: To understand how national databases have been utilized in otolaryngology research over the past eight years and how these resources can inform future study design.

Objectives: To analyze trends in the use of widely available national databases in The Laryngoscope over an eight-year period and to highlight databases currently accessible for otolaryngology research. Study Design: Retrospective review and bibliometric analysis of The Laryngoscope articles that used widely available databases from 2017 - 2024. Methods: A comprehensive literature search was conducted for all articles published in The Laryngoscope between January 1, 2017, and December 31, 2024, to identify studies utilizing national databases. Titles and abstracts were screened for the terms “database”, “registry”, and “sample”, as well as for commonly used national database names. Full texts were reviewed to confirm database use and determine eligibility. Data were then extracted from included studies for analysis. Results: 370 publications were included. The proportion of publications using national databases remained relatively stable over time, with the highest usage in 2017 (5.31%) and 2024 (5.87%). The lowest usage occurred in 2021 (3.31%) and 2022 (3.20%). The most frequently used databases were the National Cancer Database (24.05%), Surveillance, Epidemiology, and End Results Program (19.46%), and American College of Surgeons’ National Surgical Quality Improvement Program (12.43%). The average lag between the final year of data accessed in the database and publication was 5.24 years. Head and neck oncology accounted for most publications (54.86%). The most common study designs were outcomes and survival analyses (53.51%), followed by trend analyses (17.84%). The majority of database studies originated from the Northeastern United States (35.68%). Conclusions: Widely available databases have many different applications in otolaryngology research. Understanding patterns in database utilization is essential to optimize future research design and to expand the use of these valuable resources across the specialty.

TRIO051. Association Between U.S. Otolaryngology Residency Applicant Characteristics and Career/ Fellowship Interest - Authors: Kaitlin Hori, BS; Ramon Bustos, MD; Janet S. Choi, MD MPH

Educational Objective: At the end of this presentation, the audience should understand which applicant characteristics are associated with fellowship interest and consider strategies to support informed career planning.

Objectives: Interest in fellowship training among medical students applying into otolaryngology head and neck surgery (OHNS) will shape subspecialty workforce needs, yet the personal factors that influence these decisions remain unclear. The purpose of this study was to assess the relationship between medical student characteristics and fellowship interest. Study Design: Cross-sectional study. Methods: An anonymous Qual-

trics survey was distributed to 2023 - 2024 and 2024 - 2025 Electronic Residency Application Service (ERAS) applicants to OHNS residency. The survey collected demographic information and career/subspecialty interests. Multivariable logistic regression was used to identify factors associated with interest in fellowship. Results: Cohort included 143 medical students (response rate:12.8%, mean age (SD) 27.5 (2.9) years). 58.7% of students reported interest in pursuing fellowship, with Facial Plastics being the highest (23.1%). In multivariable analysis, factors associated with interest in pursuing a fellowship included being unmarried (OR=3.95; 95% CI: 1.49-10.42 vs. being married) and higher education debt (Compared to those with less than $50K in debt, those with $100-150K or greater than $250K of debt were associated with increased odds of fellowship interest (OR=10.97; 95% CI:1.89-63.67, OR=6.33; 95% CI:1.26-31.83, respectively). Age, gender, race, ethnicity and generation physician were not significantly associated with fellowship interest. Conclusions: In this cohort of OHNS residency applicants, personal characteristics including marital status and educational debt were associated with fellowship interests. The association between high debts and fellowship interest is intriguing and may reflect the consideration for earning potential or risk tolerance. Efforts to improve transparency around training length, compensation, and debt management may support informed choices and help ensure a well distributed OHNS workforce.

TRIO052. Location Matters for Successful Submandibular Hilar Stone Removal: Stone Position Relative to the Mylohyoid - Authors: Tiffany Husman, BS; Ashley Stone, MD; Jolie L. Chang, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to identify stone position and predictors for successful sialendoscopy-assisted hilar stone removal of the submandibular gland (SMG).

Objectives: To identify imaging predictors for successful sialendoscopy-assisted hilar stone removal in the SMG. Study Design: Retrospective cohort study. Methods: Patients with sialolithiasis at the hilum of the SMG were included. Two independent reviewers measured images for stone size, number, location relative to the mylohyoid, distance from the inferior mandible, and mandibular width at the buccal edge of the second molars. Stone location and operative approaches for removal were analyzed. Results: Seventy-three patients, including 51 (69.9%) patients with stones located at the mylohyoid line, 7 (9.6%) with stones superior to the mylohyoid, and 15 (20.5%) with stones inferior to the mylohyoid, were evaluated. Hilar SMG stones were successfully removed in 82.2% (N=60), with higher success rates in patients with stones located superior (100%) to the mylohyoid compared to (86.3%) or inferior (60.0%, p = 0.044). Transoral combined approach for stone removal was required in 63 (86.3%) patients. Shorter average distance between the inferior border of the mandible to the stone was associated with successful removal (p = 0.003). Stones visible on sialendoscopy (N=54, 74.0%) had higher success rates for removal compared to cases without stone visualization. The interrater correlation for stone location was Îº = 1 (p <0.001). Conclusions: Hilar SMG stones above the mylohyoid and stones visualized on sialendoscopy were associated with successful removal. Most hilar stones required transoral combined approach due to stone impaction and immobility in the duct. Imaging findings may assist in surgical planning for hilar SMG stone removal.

TRIO053. Current Trends in Artificial Intelligence Use in Otorhinolaryngology Research: A Cross-Sectional Analysis - Authors: Graham Jameison, MAT; Rachel Hazlitt, BS (Presenter); Josh Saurino, BS; Seth Sims, BS; Annes Elfar, BS; Alicia Ford, PhD; Matt Vassar, PhD

Educational Objective: At the conclusion of this presentation, the participants should be able to describe current trends in artificial intelligence (AI) policy adoption among otorhinolaryngology journals and recognize the need for standardized, transparent, and ethical reporting frameworks to guide AI use in research and publication.

Objectives: Artificial intelligence (AI) has rapidly transformed research and clinical practice across medical specialties, including otorhinolaryngology. Its integration into diagnostic imaging, histopathology, and manuscript preparation has created both opportunities and ethical challenges. Despite growing reliance on AI-assisted tools, there remains limited understanding of how otorhinolaryngology journals address AI use within their publication frameworks. This study aims to evaluate the prevalence and characteristics of AI-related policies across leading otorhinolaryngology journals and to assess the extent to which these journals promote transparency and standardization in AI-assisted research and publishing. Study Design: Cross-sectional analysis. Methods: We reviewed the Instructions for Authors for the top 100 otorhinolaryngology journals listed in the 2023 SCImago Journal Rankings. Two investigators independently extracted information on policies related to AI authorship, manuscript writing, image generation, and disclosure requirements. Journals lacking AI statements were contacted via a standardized outreach email. Descriptive and correlational analyses examined associations between AI policy presence, journal rank, impact factor, and geographic origin. Results: Of 100 journals analyzed, 54% referenced AI, while 46% did not. Most (82%) adhered to ICMJE recommendations; COPE and WAME were cited by 5% and 2%, respectively. AI authorship was prohibited by 52% of journals, AI-assisted writing was permitted by 51%, and only 24% allowed AI-generated content. Ten percent allowed AI-generated images, and 52% required disclosure. No journals endorsed CONSORT-AI or SPIRIT-AI. Conclusions: AI policies are inconsistently implemented across otorhinolaryngology journals. While many endorse transparency through disclosure, few provide comprehensive or standardized guidance. Adoption of unified, AI-specific reporting frameworks is needed to ensure ethical accountability and reproducibility in the evolving landscape of AI-driven research and publication.

TRIO054. Changes in Hypoxia Related Measures in Obstructive Sleep Apnea Surgery: A Scoping Review - Authors: Allison Lin, BS; Rachel B. Kutler, BA; Lisa Schulmeyer, BS; Catherine Y. Han, MD; Yi Cai, MD

Educational Objective: Participants should be able to identify which hypoxia-related measures are most commonly reported in obstructive sleep apnea (OSA) surgery studies and identify gaps in the literature.

Objectives: Measures of intermittent hypoxia, such as hypoxic burden (HB) or oxygen desaturation index (ODI), are valuable predictors of cardiovascular outcomes in OSA. Here, we characterize hypoxia-related measures after OSA surgery. Study Design: Scoping review. Methods: PubMed, Embase, Web of Science, and Scopus were searched through 4/2025. Population search terms included OSA surgery types, including soft tissue, skeletal, and hypoglossal nerve stimulation (HGNS). Measures of interest included HB, ODI, and time spent below 90%/88% oxygen saturation (T90/T88). Title, abstract, and full-text screenings were conducted by two reviewers. Studies were excluded if they only reported O2 nadir/mean O2 or had no post-operative sleep study time course listed. Methodology followed PRISMA guidelines. Results: In total, 4422 articles were identified, 520 underwent full-text review, and 173 corresponding to n=11608 patients met inclusion criteria. Categories of OSA surgery included soft tissue alone (65.9%), soft tissue in combination with nasal or skeletal (7.5%), skeletal (11.6%), nasal (1.7%), and HGNS (13.3%). ODI was reported in 114 (65.9%), T88 in 4 (2.3%), and T90 in 77 studies (44.5%). Among surgery types, HGNS had the highest proportion reporting ODI (91.3%), and soft tissue studies had the highest proportion reporting T90 (46.8%). Of the studies that included pre- to post-surgery statistical significance, 92.9% reported significantly improved ODI and 82.9% improved T88 or T90. Only 1 study reported hypoxic burden. Conclusions: Available literature suggests improvements in hypoxia-related measures with OSA surgery, with most reporting ODI. Duration-based measures (T90/T88, hypoxic burden) were less consistently reported and reporting varied across surgery types.

TRIO055. Glucagon-Like Peptide 1 Receptor Agonist Utilization in Obstructive Sleep Apnea Patients at a Large Academic Center - Authors: Allison Lin, BS; Rachel B. Kutler, BA; David I. Kutler, MD; Yi Cai, MD

Educational Objective: Participants should understand rates of glucagon-like peptide-1 receptor agonist use and predictors of utilization in obstructive sleep apnea patients.

Objectives: Glucagon-like peptide-1 receptor agonists (GLP-1 RAs) are approved to treat obstructive sleep apnea (OSA). However, their real-world use in OSA populations has not been well characterized. This study evaluates GLP-1 RA utilization among OSA patients at a single academic center. Study Design: Retrospective cohort. Methods: The TriNetX database was queried for adult patients with an OSA diagnosis recorded between January 2022 and August 2025. GLP-1 RA prescription data, demographic characteristics, highest body mass index (BMI), and BMI closest to time of GLP-1 RA prescription were analyzed. Eligibility for GLP-1 RA was defined as having a diabetes diagnosis or BMI >/=27 kg/m2 with a weight-related comorbidity. Multivariable logistic regression with age, sex, race, and ethnicity as covariates was conducted to identify predictors of utilization. Results: In total, 33,695 patients (53.2% male, 44.1% White) were included, with mean age 58.5+/=15.5 years and mean highest BMI 34.5+/=7.7 kg/m2. In the cohort, 28,415 (84.3%) met GLP-1 RA eligibility criteria. Within eligible patients, 6604 (23.2%) had received a GLP-1 RA prescription. Average BMI closest to the time of GLP-1 RA initiation was 37.3+/=6.7 kg/m2. Among those who received any GLP-1 RA prescription, 50.2% had received only semaglutide, 18.1% had received only tirzepatide, and 24.5% had received both. Among eligible patients, older age, male sex, and Asian race were significantly associated with lower likelihood of GLP-1 RA prescription ($p<0.01$). Conclusions: In an OSA population, a large majority were eligible for GLP-1 RA use, and uptake was relatively high compared to the general population.

TRIO056. Rolling the DISE: Comparative Analysis of Sleep Surgery Outcomes in Patients with Preoperative DISE in Patients with Obstructive Sleep Apnea - Authors: Sophia Linguiti, BA; Emma J. Anisman, BA; Abdulghafoor Alani, BS; Colin Huntley, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to assess the association between preoperative drug-induced sleep endoscopy (DISE) and postoperative outcomes in patients undergoing sleep surgery for obstructive sleep apnea (OSA), and interpret the impact of DISE on revision rates and sleep surgery postoperative complications. Understanding this relationship can guide surgical planning, improve patient selection, and potentially reduce the need for revision surgery, thereby enhancing overall treatment effectiveness and safety.

Objectives: To evaluate the impact of preoperative drug-induced sleep endoscopy (DISE) on long-term revision rates and short-term postoperative complications in patients undergoing sleep surgery for OSA. Study Design: Retrospective cohort study using the TriNetX US Global Collaborative Network. Methods: Adults diagnosed with OSA undergoing sleep surgery (including: palatopharyngoplasty or uvulopalatopharyngoplasty, tonsillectomy and/or adenoidectomy, pharyngoplasty, mandibular reconstruction, and genioglossus advancement) were identified and stratified based on whether they had undergone DISE within one year preoperatively. Patients receiving hypoglossal nerve stimulation were excluded. Outcomes included rates of additional sleep surgery and postoperative continuous positive airway pressure (CPAP) use occurring within five years, as well as 30-day postoperative complications. Results: A total of 11,536 patients were included: 5,853 without and 5,853 with prior DISE. There was no significant difference in rates of revision surgery (2.55% vs 2.87%, RR 1.01, p=0.28) or CPAP use (3.09% vs 3.25%, RR 1.05, p=0.63) at 5-years post sleep surgery. However, patients with prior DISE had significantly higher rates of postoperative infection (2.17% vs. 1.45%, RR 1.49, p=0.004), and 30-day emergency visits (10.65% vs. 8.79%, RR 1.20, p=0.001). Postoperative bleeding was more common in the DISE group but did not reach statistical significance (7.32% vs. 6.61%, RR 1.11, p=0.127). Conclusions:

Preoperative DISE did not reduce the likelihood of future sleep surgery or postoperative CPAP use following sleep surgery. However, patients with prior DISE experienced higher rates of infection and healthcare utilization within 30 days. These findings highlight the need to further define the optimal role of DISE in sleep surgery planning for OSA.

TRIO057. Quantifying Airway Collapse During Drug Induced Sleep Endoscopy Using Deep Learning Based Landmark Tracking - Authors: Hudson Liu, BS; Neha Rana, BA; Christina Zhu, BS; Wynne Zheng, MA; Michael Hoa, MD; Sarah K. Rapoport, MD

Educational Objective: To understand how deep learning based landmarking with likelihood-thresholding can be applied to drug induced sleep endoscopy (DISE) videos to provide scalable, objective assessment of airway collapse.

Objectives: To develop and validate a quantitative framework for assessing upper airway collapse during DISEs. We hypothesize that deep learning-based landmark detection could provide objective, frame-by-frame measurements of airway collapse that correlate with clinical assessments of collapse severity. Study Design: Retrospective validation study using de-identified DISE videos from patients evaluated for hypoglossal nerve stimulation to train a deep learning-based landmark detection platform. Methods: DISE videos from patients undergoing evaluation for hypoglossal nerve stimulation were processed and analyzed using Python and DeepLabCut to fine-tune a ResNet50 convolutional neural network to identify landmarks including the lateral, anterior, and posterior pharyngeal walls at various pharyngeal levels. Automated measurements of wall collapse in the lateral and anterior/posterior directions were calculated and compared to expert evaluations to assess concordance. Results: DeepLabCut achieved robust landmark tracking across processed DISE videos. After applying a likelihood threshold of 0.6, root mean square error (RMSE) of the train and test sets were 12.1 px and 6.67px respectively. The mean average precision and recall were 69.6%/73.6% for the training set and 60.4%/62.2% for the test set. The model reliably tracked the anterior, posterior, and lateral pharyngeal walls, enabling measurement of airway collapse cycle. Measurements corresponded with visual assessment by expert raters. Conclusions: This study establishes the feasibility of an open source, deep learning-based workflow for objective quantification of airway collapse during DISE. Using anatomical landmark tracking and python based kinematic analysis, we provide a lightweight, modular, and user-friendly platform to measure airway collapse across the respiratory cycle.

TRIO058. Efficacy of Glucagon-like Peptide 1 Receptor Agonists for Obstructive Sleep Apnea: A Systematic Review and Meta-Analysis - Authors: Cali Loblundo, BS; Sammy Y. Gao, BS; Shaun A. Nguyen, MD; Mohamed Abdelwahab, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to better understand the potential pharmacological usefulness of glucagon-like peptide 1 receptor agonists for obstructive sleep apnea.

Objectives: To investigate the effectiveness of glucagon-like receptor agonists (GLP-1RA) in obstructive sleep apnea (OSA) patients. Study Design: Systematic review and meta-analysis. Methods: A PRISMA compliant search of CINAHL, Cochrane Library, PubMed, and Scopus were conducted from inception to October 2025. Studies documenting GLP-1RAs use for OSA were included. Primary outcomes include apnea hypopnea index (AHI) and weight change as efficacy measures. GLP-1RAs included liraglutide (three studies) and tirzepatide (two studies), with data stratified by CPAP use. Outcomes were summarized using mean, proportions (%), and corresponding differences (Δ) with 95% confidence intervals (CI). Risk of bias was assessed using Risk of Bias 2 (RoB2) tool. Results: A total of 3,836 articles were screened, and six studies (n=1051 patients) were included in the meta-analysis. Patients treated with GLP-1RAs had a mean percent body weight reduction of -14.32%,

with a significant mean difference from controls (Δ: -12.46, 95% CI [-22.54, -2.39], p = 0.02). Within the no CPAP cohort, GLP-1RAs significantly reduced the apnea hypopnea index (AHI)by -9.30 events per hour (95% CI [-12.74, -5.87], p=). Conversely, among patients using CPAP, GLP-1RAs reduced AHI without reaching statistical significance (Δ: -13.43 events/hour, 95% CI [-33.42,6.55], p=0.19). Conclusions: These results suggest that GLP-1RAs offer a promising alternative for OSA patients with symptomatic improvement and weight loss. However, additional long-term studies should be conducted to further understand this pharmacological potential.

TRIO059. APPs Drive Growth in Ambulatory Otolaryngology Practices and Procedural Volumes - Authors: Arushi P. Mahajan, MD MBA; Felix Fernandez-Penny, BS; Max Hyman, BA; Nishant Agrawal, MD; Parth Modi, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the changes in practices patterns for ambulatory care providers in otolaryngology outpatient practices.

Objectives: The role of advanced practice providers (APPs) within otolaryngology remains dynamic and incompletely understood. This study sought to characterize the role of APPs in U.S. otolaryngology-related practices over the past decade by assessing the nature and volume of services independently billed. Study Design: We reviewed Medicare (public claims data) and MarketScan (commercial claims data) reporting otolaryngology related procedures billed between 2013-2023. Methods: We identified 125 unique CPT codes and we subdivided these into 7 categories: allergy, facial plastics, head and neck, laryngology, otology, pediatrics, and sinus/rhinology. Results: APPs independently perform a growing percent of otolaryngology related procedures for both publicly and commercially insured patients with a statistically significant association for each insurance type. The percent of total billed otolaryngology related claims by APPs increased from 3.0% to 9.3% over the ten-year period. Facial plastics related procedures demonstrated the most rapid rate of growth relative to other subspecialities within otolaryngology (1.3% in 2013, 10.6% in 2023). Furthermore, all subspecialities demonstrated a statistically significant increase in billed procedures in Medicare beneficiaries; Allergy: 0.5% growth per year, 95% CI 0.4%-0.6%, p<0.001; Facial plastics: 0.8% growth per year, 95% CI 0.7%-0.8%, p<0.001; Head and Neck: 1.0% growth per year, 95% CI 0.9%-1.1%, p<0.001; Laryngology: 0.7% growth per year, 95% CI 0.6%-0.8%, p<0.001; Otology: 1.1% growth per year, 95% CI 1.0%-1.2%, p<0.001; Pediatrics: 1.1% growth per year, 95% CI 1.0%-1.2%, p<0.001; Sinus/rhinology: 1.1% growth per year, 95% CI 1.0%-1.2%, p<0.001. Conclusions: APPs are independently performing an increasing proportion of otolaryngology related procedures among Medicare and commercially insured patients in the US. As the demand for otolaryngological services continues to rise, the growing involvement of APPs in providing care will play a vital role in redistributing select ambulatory procedures. Further studies will need to continue to investigate the quality of such performed procedures and the need to create a more robust training to ensure equitable and safe care.

TRIO060. WHODAS Based Assessment of Functional Outcomes Following Otolaryngologic Surgery in a Resource Limited Setting - Authors: Cody L. Messick, BS; Charlie Gallego, BS; Brhanu H. Asgedom, MD; Selamawit Gebrezgabiher, MD; Zayd M. Yehala, MD; Joshua Wiedermann, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to: describe how WHODAS can be used to measure post-operative outcomes in low-resource settings; explain how WHODAS can be translated into metrics useful for public policy and advocacy; implement a WHODAS-based registry to guide short-term surgical trips or inform care delivery in low-resource settings.

Objectives: This study used the World Health Organization Disability Assessment Schedule (WHODAS-12) to evaluate patient disability before and after otolaryngologic procedures at a tertiary care center in a low-middle income country (LMIC) aiming to characterize baseline disability, identify procedures associated with the greatest functional improvement, and assess any post-operative increases in disability. Study Design: This study is a

prospective observational cohort study including all patients undergoing otolaryngology procedures who were enrolled in a digital surgical registry between June 2024 and April 2025. Methods: WHODAS questionnaires were administered preoperatively and at 1-, 3-, and 6-month follow-up intervals. Descriptive statistics and one-way ANOVA with post-hoc analysis were used to compare pre- and post-operative scores across the cohort and by procedure type. Results: A total of 204 patients were analyzed. Baseline WHODAS-12 scores showed greatest impact in financial strain, family disruption, and time spent managing illness. At 1-month postoperatively, tympanoplasty patients had higher disability scores than those undergoing adenotonsillectomy or sinus surgery, but differences resolved by 3 months. No other significant differences were observed, indicating that all surgical groups experienced comparable functional improvement over time. Conclusions: These findings may offer a model for outcome measurement in resource-limited settings and in short-term surgical trips. As WHODAS scores can be translated into disability weights for metrics like Years Lived with Disability (YLDs), this framework supports advocacy for greater investment in otolaryngology services. Given the present study limitations, a future multi-center study would improve generalizability and regional insight.

TRIO061. Evaluating ENT Provider Efficiency and Burnout with AI Scribes - Authors: Zain Moin, BS; Ahmed Abdou, MS; Justina R. Varghese, BS; Samuel E. Razmi, MD MEng; Mas Takashima, MD; Omar G. Ahmed, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand how artificial intelligence (AI) scribes are impacting physician efficiency and burnout in otolaryngology.

Objectives: This study serves as the first ever ENT specific study evaluating the efficiency impact of an AI scribe, Ambience, by analyzing trends across ENT subspecialties, levels of service, patient populations, and encounter types. Study Design: This single-institutional retrospective study analyzed 114,000 patient encounters from January 2022 to June 2025 using data from Ambience and Epic EHR specific to a hospital ENT department. Each encounter was classified into whether the scribe used was an AI scribe (6,600 encounters), an in-person scribe (19,000 encounters), or no-scribe (88,000 encounters). Methods: Efficiency metrics included average time spent in the patient room and total encounter duration, while physician workload and burnout metrics included Epic documented pajama time and time on unscheduled days. Mean values for each scribe group were calculated across encounters, log transformed to normalize skewed distributions and compared using one-way ANOVA with Tukey's post-hoc testing to assess pairwise significance (Î±=0.05). Results: Across 114,000 encounters, the no-scribe group had the shortest patient room time (33.1 minutes), followed by in-person scribes (33.4 minutes) and AI scribes (35.4 minutes; $p<0.005$ for all comparisons). Encounter duration was lowest for no-scribe (33.2 minutes), but AI scribes (35.8 minutes) reduced time by 1.4 minutes versus in-person scribes (37.2 minutes; $p<0.005$). More notably, the pajama time was lowest with AI scribes (11.8 minutes) compared to no-scribe (14.8 minutes) and in-person scribes (20.2 minutes; $p<0.005$ for all comparisons). Similarly, for unscheduled day documentation, AI scribes had the shortest time (18.7 minutes), followed by no-scribe (19.6 minutes) and in-person (21.2 minutes; $p<0.005$). Trends were consistent across subspecialties, age groups, and visit types. Conclusions: Our findings suggest that AI scribes did not significantly impact overall clinic efficiency but did substantially reduce pajama time and work completed outside scheduled hours, indicating a primary benefit in alleviating provider burnout and cognitive load among ENT physicians. These results reflect the significantly smaller sample size of the AI and in-person scribe groups compared to the no-scribe group, as well as a potential learning curve in adopting the Ambience system. As Ambience integrates advanced features, such as automated medication orders and summarized patient histories, and as providers gain greater familiarity with its workflow advantages, we anticipate that future studies will demonstrate a broader improvement in efficiency metrics alongside reductions in burnout. Ultimately, this represents the first ENT specific study evaluating AI scribes, and our data suggests that such technologies are poised to transform the future practice of otolaryngology.

TRIO062. Hearing Every Voice: A Qualitative Study Exploring the Diverse Experiences of Women in Otolaryngology - Authors: Allana M. Mutuc, BS; Allyson V. Drawdy, BS; Caroline B. King, BS; Phayvanh P. Pecha, MD MPH

Educational Objective: At the conclusion of this presentation, the participants should be able to describe key challenges and progress in gender equity in otolaryngology and identify strategies to foster resilience, supportive networks, and inclusive professional environments.

Objectives: To explore gender-based challenges, mentorship, career advancement, leadership opportunities, and work life integration among women otolaryngologists to understand how the field is changing and where continued efforts are needed. Study Design: Qualitative interview study. Methods: Practicing women otolaryngologists across the United States were recruited via professional networks, national organizations, and snowball sampling to ensure representation across subspecialties, career stages, race/ethnicity, and practice settings. Semi-structured interviews were conducted from March to June 2025, transcribed, and thematically analyzed to identify experiences, challenges, and facilitators related to gender equity. Results: We interviewed 27 participants across 21 institutions, who highlighted meaningful progress in leadership, mentorship, and professional support while identifying ongoing challenges. Seven themes emerged: (1) still climbing the ladder, as leadership representation is improving yet "lagging"; (2) the value and historical shortage of women mentors; (3) a generational shift toward valuing work life balance; (4) the weight of rising demands, with academic participants (85.2%) noting increasing clinical pressures; (5) persistence of structural barriers, including policy gaps, pay inequities, parental leave challenges, and microaggressions; (6) resilience through peer supports, as women centered networks strengthened connection and belonging; and (7) voices from the margins, as underrepresented participants described unique experiences of isolation, representation/visibility, and advocacy. Conclusions: By capturing the broad experiences of women otolaryngologists from diverse backgrounds, this study reveals the purposeful strides otolaryngology has taken toward creating a more inclusive workforce. Continued attention to structural and institutional barriers, alongside intentional diversity efforts, will build on this progress and foster a more equitable and supportive field.

TRIO063. Association of Area Deprivation Index with Outcomes after Hypoglossal Nerve Stimulation - Authors: Andrew T. Neeson, BS; Anish Chhabra, BS; Colin Huntley, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand how neighborhood deprivation, measured by the Area Deprivation Index (ADI), relates to postoperative outcomes and surgical success after hypoglossal nerve stimulation for obstructive sleep apnea.

Objectives: Assess whether neighborhood deprivation (Area Deprivation Index, ADI) is associated with outcomes after hypoglossal nerve stimulation (HGNS) implantation for obstructive sleep apnea (OSA), and report ADI-stratified success (Sher20 and Sher15). Study Design: Single institution, retrospective cohort study. Methods: Retrospective analysis of HGNS patients with valid pre- and post-operative AHI. National ADI ranks were grouped into quintiles: (Q1: 1-20 through Q5: 81-100). For each group, we summarized pre-operative and post-operative AHI, absolute and percent change in AHI, device use (hours/week), and Sher20/Sher15 counts and rates. Surgical success was defined as at least a 50% reduction in apnea hypopnea index (AHI) and a postoperative AHI that is less than or equal to 20 events/hour (Sher20) or less than or equal to 15 events/hour (Sher15). A priori nonparametric comparison was performed using Kruskal-Wallis with Dunn-Bonferroni tests. Results: 192 patients were included (Q1, n=35; Q2, n=79; Q3, n=51; Q4, n=23; Q5, n=4). Median preoperative AHI ranged from 24.8-32.8 events/hour; postoperative AHI ranged from 9.8-20.2 events/hour. Mean AHI change ranged from 8.6-12.7 events/hour, and mean percent change ranged from 19.3%-39.0%. Sher20 rates were: Q1 42.9%; Q2 41.8%; Q3 35.3%; Q4 52.2% (highest); and Q5 50.0% (small sample). Sher15 rates were: Q1, 42.9%; Q2, 38.0%; Q3, 29.4% (lowest); Q4, 47.8% (highest); and Q5, 50.0%. Hours-per-week data

were available for 54 patients and ranged from 35.09 hours/week (Q3) to 48.10 hours/week (Q4). Conclusions: Across ADI quintiles, HGNS yielded clinically meaningful reductions in AHI, with Sher20 rates from 35.3%-52.2% and Sher15 rates from 29.4%-50.0%. No clear decline in effectiveness was observed with higher neighborhood deprivation (all p-values greater than 0.05). Larger cohorts with complete adherence data are needed to confirm these observations.

TRIO064. Impact of Nasal Valve Surgery on CPAP Adherence and Obstructive Sleep Apnea Outcomes: A Retrospective Review - Authors: Nina Patel, MS MPhil; Priya Rao, BS (Presenter); Colten Wolf, MD; Monica Patadia, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand how addressing nasal valve dysfunction can enhance tolerance and effectiveness of CPAP therapy in patients with obstructive sleep apnea, and also recognize the potential role of nasal valve surgery in optimizing long-term treatment adherence and outcomes.

Objectives: To evaluate the relationship between nasal valve surgery and obstructive sleep apnea (OSA) related outcomes, including CPAP adherence, pressure settings, and sleep study parameters among patients undergoing nasal valve procedures at a single academic institution. Study Design: Retrospective chart review. Methods: A retrospective review was conducted of 69 patients who underwent nasal valve surgery between 2015 and 2024, identified using CPT codes 30420 (functional rhinoplasty) and 30465 (nasal valve repair). Extracted variables included demographics, comorbidities, nasal symptom scores (NOSE, SNOT), and sleep-related data such as apnea-hypopnea index (AHI), O_2, desaturation index (ODI), lowest O_2 saturation, and CPAP adherence (hours/night). The primary outcome was change in CPAP adherence after nasal valve surgery. Secondary outcomes included changes in AHI, CPAP pressure, and nasal symptom scores. Results: Of the 69 patients, the mean age was 48.6 +/- 12.1 years, with 58% male and a mean BMI of 29.8 +/- 4.9. Preliminary data suggest a trend toward improved CPAP adherence postoperatively, with average use increasing from 3.9 +/- 1.8 hours/night to 5.1 +/- 1.6 hours/night. Mean CPAP pressure decreased from 10.6 to 9.2 cm H_2O, and average NOSE scores improved by 42% postoperatively. Conclusions: Preliminary findings suggest nasal valve surgery may improve CPAP adherence and tolerance in OSA patients, potentially through enhanced nasal airflow and reduced resistance. Ongoing analysis will determine the magnitude and statistical significance of these trends and identify which patients benefit.

TRIO065. Comparing Diagnostic Accuracy and Citation Integrity of Four Large Language Models on Otolaryngology Vignettes - Authors: William Pennington-FitzGerald, MD; Akshay Warrier, BA; Sally Durant, BA; Ibraheem Sharaf, BA; Jean Anderson Eloy, MD FACS; Jessica Levi, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the diagnostic accuracy and citation reliability of LLMs in otolaryngology, with the goal of informing clinical application.

Objectives: This study aimed to compare the diagnostic accuracy and citation integrity of four large language models (LLMs) including one general (ChatGPT-4) and three intended for clinical and research use (OpenEvidence, Perplexity, and Pathway), using standardized otolaryngology clinical vignettes. Study Design: Cross-sectional prospective study. Methods: One hundred validated otolaryngology clinical vignettes were presented to each LLM with a prompt requesting both a diagnosis and supporting citations. Diagnostic accuracy was determined against reference answers, and errors were categorized as logical, informational, or explicit. Citation number, source type, hallucination rate, and journal CiteScores were also compared. Results: All models demonstrated high diagnostic accuracy (82.0%â€“91.0%), with ChatGPT-4 performing best (91.0%), though differences were not statistically significant (p = 0.245). Logical errors were most frequent across all models.

OpenEvidence and Perplexity generated the most citations per response, while ChatGPT-4 produced the fewest and had the highest hallucination rate (23.0%). Source preferences varied, with OpenEvidence and Pathway favoring narrative reviews and Perplexity favoring government/public health websites. OpenEvidence had the highest mean CiteScore for journal citations (26.1). Conclusions: This is the first study to assess both diagnostic accuracy and citation integrity of LLMs in otolaryngology. While ChatGPT-4 was most accurate, it had the highest rate of citation hallucinations, suggesting a trade-off between accuracy and source reliability. OpenEvidence, though slightly less accurate, provided more consistent and verifiable references, demonstrating the ability to prioritize citation integrity alongside diagnostic performance for clinical integration.

TRIO066. Tranexamic Acid in Emergency Department Management of Post-Tonsillectomy Hemorrhage: A Single Institution Review - Authors: Elena Quinonez Del Cid, BS; Priya J. Desai, BS; Nathan R. Barefoot, BS; Siddhi R. Poraiyan, HS; Graham D. Cochrane, MD PhD; Doris Lin, MD

Educational Objective: To enhance understanding of current patterns in tranexamic acid (TXA) usage and associated outcomes for post-tonsillectomy hemorrhage management

Objectives: To quantify TXA use for patients presenting to the emergency department for post-tonsillectomy hemorrhage (PTH) and to explore clinical outcomes associated with TXA administration at a tertiary center without a standardized TXA administration protocol. Study Design: Retrospective review. Methods: Using the i2b2 database, 243 patients presenting to institution affiliated emergency departments with PTH (2015-2025) were identified. Data collected included demographics, comorbid bleeding disorders, surgical indication and technique, date of tonsillectomy, emergency department (ED) encounter details, TXA use, and need for reoperation. Results: Overall, 30% of patients received TXA topically, intravenously, or both. TXA use did not differ significantly by age group (greater than or equal to 18 vs less than 18) or by presence of bleeding upon ED arrival. The majority of total cases 133/242 (55%) returned to the operating room (OR) for cauterization. Furthermore, 42/73 (58%) of patients receiving TXA returned to the OR versus 91/169 (54%) who did not ($p=0.60$). Route of administration did not significantly impact reoperation rates ($p=0.21$). A logistic regression analysis of age, days since surgery, TXA use, and bleeding on arrival to the ED demonstrated that only bleeding on arrival was significantly associated with rate of reoperation (odds ratio 3.9, $p<0.01$). Conclusions: TXA use was not associated with a decreased likelihood of reoperation. Utilization of TXA was similar across all ages and presentation types. The patterns of TXA use and reoperation rates are likely multifactorial and may reflect surgeon preference or familiarity with TXA rather than proven efficacy. These findings underscore the need for development of standardized protocols and prospective evaluation to clarify TXA's role in PTH management.

TRIO067. WITHDRAWN

TRIO068. The Accuracy and Reliability of Drug Induced Sleep Endoscopy with Positive Airway Pressure - Authors: Saif R. Salih, BS; Michael Hutz, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to accurately measure and interpret site-specific airway opening pressures using DISE PAP, evaluate inter-rater reliability with objective statistical methods, and apply these findings to guide personalized treatment strategies for patients with obstructive sleep apnea.

Objectives: Drug-induced Sleep Endoscopy (DISE) is a valuable diagnostic tool for evaluating dynamic upper airway obstruction in patients with obstructive sleep apnea (OSA). Precise measurement of site-specific opening pressures, such as at the palate, lateral walls and tongue base, via a novel technique known as Drug-induced Sleep Endoscopy with Positive Airway Pressure (DISE PAP) can guide personalized treatment strategies, including the adjustment of positive airway pressure (PAP) therapies or surgical intervention. However, the

reliability and reproducibility of pharyngeal opening pressure measurements based on visual assessment alone remain unclear. This study aimed to evaluate the inter-rater reliability of visually estimated opening pressures during DISE, comparing blinded reviewer estimates with original operator-recorded measurements. Study Design: This multi-institutional observational study included adult patients undergoing DISE PAP for evaluation of CPAP-intolerant obstructive sleep apnea (OSA). The study was designed to assess the inter-rater reliability of visually estimated airway opening pressures by comparing blinded reviewer assessments to original operator-recorded measurements. Blinded independent raters from an external institution reviewed standardized video recordings to minimize bias and enhance reproducibility across sites. Methods: During each DISE PAP procedure, four airway opening pressures were measured: palatal opening pressure (POP), lateral wall opening pressure (LOP), tongue base opening pressure (TOP), and overall pharyngeal opening pressure (PhOP). Video recordings of each procedure were reviewed by two experienced blinded raters, who estimated each pressure value based on visual interpretation. Agreement between the original operator-recorded values and reviewer-derived estimates was assessed using scatterplots (with y = x identity line), concordance correlation coefficients (CCC), and Bland-Altman plots. Additional analysis was performed to assess inter-rater agreement between the two blinded reviewers. Results: Fifty patients were included. On average, the cohort was middle-aged (56.0 +/- 11.9), male (64%), White (62%). Scatterplot analysis demonstrated good interrater agreement with PhOP values (CCC = 0.788), with moderate-to-good agreement for POP, TOP and LOP (CCC = 0.603, 0.576 and 0.114, respectively). Bland-Altman plots showed most values within the 95% limits of agreement, though systematic deviations were noted for LOP and TOP (will need to revise once we get new data). When comparing rater 1 and rater 2 directly, CCC values indicated good-to-moderate agreement for PhOP (0.677. Bland-Altman plots supported these findings and suggested minimal bias across most measurements, except for POP, which showed increasing disagreement at higher pressures. Conclusions: Visual DISE-PhOP, utilized to measure degree of upper airway collapsibility, demonstrated good reliability among blinded reviewers from an outside institution, with good-to-moderate reliability for POP, LOP and TOP. Inter-rater agreement between independent reviewers was also good with the highest variability in POP. These findings further support the incorporation of DISE PAP as a reliable and reproducible objective parameter in clinical practice.

TRIO069. Publication Misrepresentation Among ENT Residency Interviewees to a Single U.S. Program - Authors: Neeraj Senthil, BS; Leena Surapaneni, BA; Julia Atayde, BS; Jacob Mabey, MD; Wesley Wride, BA; R. Peter Manes, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to appreciate the prevalence of misrepresentation in the otolaryngology match and understand the factors that are associated with higher odds of misrepresentation and greater reported research productivity.

Objectives: To investigate publication misrepresentation amongst otolaryngology applicants and determine which applicant characteristics are correlated with misrepresentation and research productivity. Study Design: Retrospective cohort study. Methods: Data were acquired from a single U.S. otolaryngology residency program across 3 cycles (2017-2018, 2019-2020, and 2021-2022). Demographic variables, academic factors, and research publication characteristics, including types of misrepresentation, were obtained. Chi-squared test, independent sample t-tests, and multivariate logistic regression were employed for analysis. Results: Across all cycles, 131 applicants were invited to interview. 770 publications were listed, with an average of 5.9 publications per interviewee. 97 (12.6%) publications were misrepresented: 52 publications could not be verified, 33 had incorrectly listed authorship, 27 had omitted authors, 18 had self-promoted authorship, 3 were reported to be published in a more prestigious journal, and 1 was incorrectly reported as peer-reviewed. Interviewees with greater than 6 publications had higher odds of misrepresentation compared to those with fewer (5.56 [95% CI: 2.09, 14.78]). Interviewees in 2017 had lower odds compared to their peers in 2019 (0.29 [95% CI: 0.10, 0.85]) and 2021 (0.29 [95% CI: 0.10, 0.83]) to have more than 5 publications. Interviewees with a USMLE

Step 1 (0.42 [95% CI: 0.18, 1.00]) or Step 2 (0.39 [95% CI: 0.16, 0.93]) score greater than the median had lower odds of having more than 5 publications. Conclusions: The prevalence of misrepresentation underscores the need to look deeper into the culture of research productivity and how such efforts are holistically evaluated in the context of a competitive match process.

TRIO070. Glandular Expression of Trefoil Factor Proteins in the Nose of the COVID-19 Anosmia Hamster Model - Authors: Noor Souman, BS; Annika Nambiar, MPH; Rebecca Cook, BS; Maia Smith, BSA MS; Tomoko Makishima, MD PHD

Educational Objective: Participants will learn the changes in trefoil factor protein distribution in the nose of the COVID-19 anosmia hamster model.

Objectives: Trefoil factor proteins (TFFs) expressed in goblet cells (GCs) are important for mucosal defense and repair in the GI tract. The role of TFFs in the nose is not well understood. Our objective is to analyze the expression of TFFs associated with the mucus secretory environment in the nose of the COVID-19 anosmia hamster model. Study Design: Basic science research. Methods: Hamsters were intranasally infected with SARS-CoV-2 and tested for olfactory behavior at days post infection (dpi): 2, 3, 5, 8, 17, 21, 35, and 42. Paraffin-embedded thin cross-sections of the nose were immuno-labeled with TFF2 or TFF3 antibodies. The expression level of TFFs in Bowman's glands, respiratory submucosal glands, and GCs were characterized. Results: Anosmia was observed between 2 to 5 dpi, followed by recovery to normal function at 35 dpi. GC number and size were decreased at 2-3 dpi. TFFs were expressed in glands but not in GCs. Expression levels of TFF2 in both glands and TFF3 in Bowman's glands increased at 3 dpi, returning to near normal levels at 17 dpi. TFF2 was more abundantly expressed than TFF3. Conclusions: The lack of TFF3 expression in the GCs of the nose indicates that these cells play a different role than those found in the GI tract, where TFF3 is typically expressed. The increased expression of TFF2 and TFF3 around 2-3 dpi suggests TFFs are likely involved in the acute inflammatory phase of anosmia.

TRIO071. Evaluation of Otolaryngology Core Curriculum Implementation at Two Residency Programs - Authors: Harrison M. Thompson, MD; Gabriel G. Sobczak, MD (Presenter); Sarah Toti, MD; Brett T. Comer, MD; Elisa A. Illing, MD

Educational Objective: At the conclusion of this presentation, participants should articulate how a standardized didactic program can impact residents' perspectives about achieving educational outcomes.

Objectives: This study aimed to assess perceptions and evaluate various domains of learner experience during implementation of the otolaryngology core curriculum (OCC). Study Design: Mixed methods prospective cohort study. Methods: A 28 item questionnaire covering curriculum objectives, content, implementation, and learner evaluation was administered to 17 residents across two institutions. Pre- and post-OCC survey results were compared with student's two sample t-test; significance was set to α=0.05. Focus group discussions were held within 3 months of OCC implementation and at 6-9 months post-implementation. Transcription was performed and qualitatively analyzed utilizing inductive and deductive coding followed by thematic analysis. Results: Survey results indicated that curriculum objectives were clearer for learners with OCC compared with existing didactic programs. Content was more relevant, organized, and delivered more effectively. OCC evaluation methodology was favored by learners. Didactic duration, timing, and instructor communication improved significantly after OCC. Achievement of learning objectives and content availability relevant to learners at multiple levels did not change significantly. Thematic analysis identified four major themes when evaluating learner experience and preferences of didactic programs: 1) learner directed education, 2) expert oversight, 3) program structure, and 4) practice applicable learning. Conclusions: In this small cohort, OCC implementation generally yielded positive educational outcomes from the learner's perspective and allowed for modification to

fit each program and learners' needs. Further evaluation utilizing question bank or national test scores would improve outcomes analysis of implementation.

TRIO072. Trading Confusion for Connection in the Patient Resident Relationship - Authors: Jane Y. Tong, MD; Sarah Yang, BS; Kelly Moyer, MD; Elizabeth Guardiani, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to describe the effects of a trading card based intervention on the relationship between patients and resident physicians.

Objectives: To determine whether distribution of resident trading cards can positively impact the patient-resident relationship and help patients better understand the role for residents on their care team. Study Design: Prospective survey study. Methods: 15 otorhinolaryngology residents created trading cards describing personal fun facts, and distributed these to patients undergoing surgery requiring at least overnight observation. Patients were surveyed in the postoperative period about their experience with physicians, and specifically their understanding of the role for resident physicians. Residents were surveyed at 3-month intervals about burnout. Both patients and residents were surveyed about the experience of exchanging trading cards. This project was supported by an ACGME Back to Bedside grant. Results: Sixty-four cards were distributed from June 4, 2025 to October 6, 2025. Fifty (78.1%) patients reported that exchanging cards increased their trust in residents, and 46 (71.9%) reported at least some understanding of residents' roles. Sixty-two (96.9%) patients reported always having confidence and trust in their physicians, and 64 (100%) reported always being treated with courtesy and respect. Using the Maslach Burnout Inventory, residents at baseline scored an average 3.1 on the emotional exhaustion subscale, 2.1 on the depersonalization subscale, and 4.2 on the personal accomplishment subscale. Following three months of project implementation, residents scored an average of 2.5, 1.6, and 4.3, respectively. Both patients and residents provided many comments expressing that they enjoyed exchanging trading cards, and that the cards made them feel more connected. Conclusions: Distribution of resident trading cards to patients undergoing surgery with our otorhinolaryngology service increased trust and improved patient understanding of the role for resident physicians.

TRIO073. The Relationship Between Obstructive Sleep Apnea and Sickle Cell Disease: A Large Scale Retrospective Review - Authors: Jonathan Vuillier, BS; Cassie Bowers, BS; Cristofer Barry, BA MA; Chase Hintelmann, BS; Alexandra Tronzo, BS MSN; Earl H. Harley, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to: recognize obstructive sleep apnea prevalent, underdiagnosed, and modifiable comorbidity in adults with sickle cell disease (SCD; understand its association with increased vaso-occlusive crises, stroke, mortality, and healthcare utilization, and appreciate the clinical importance of routine polysomnography screening, even in the absence of overt symptoms, to improve patient outcomes.

Objectives: Sickle cell disease (SCD), characterized by hemolytic anemia and vaso-occlusive events, is often complicated by obstructive sleep apnea (OSA), a disorder marked by intermittent hypoxia from airway obstruction. Hypoxemic episodes during OSA may promote erythrocyte sickling, compounding SCD morbidity. Evaluating this comorbidity is clinically relevant given sleep-disordered breathing prevalence in SCD, treatability of OSA, and risks of adverse outcomes. This study aims to assess OSA's impact on SCD complications. Study Design: Retrospective Observational Cohort Study. Methods: This study was performed using TriNetX, including adults aged 18 - 65 with SCD. Cohorts were defined by ICD-10 diagnoses of SCD with or without OSA, excluding central sleep apnea and other hemoglobinopathies. Groups were matched 1:1 by demographics and comorbidities. Outcomes included incidence of vaso-occlusive crisis (VOC), opioid use, emergency visits, hospitalizations, ischemic stroke, and death. Risk ratios (RR) were calculated. Kaplan-Meier analysis compared time-to-event outcomes. Results: After matching, 3,715 SCD patients with OSA were compared to 3,715 without OSA. OSA

was associated with increased VOC (RR 2.54, 95% CI 2.38 - 2.71), ischemic stroke (RR 1.69, 95% CI 1.45 - 1.97), and mortality (RR 1.28, 95% CI 1.09 - 1.51). Higher healthcare utilization was observed including opioid prescriptions, inpatient admissions, and emergency visits (all p<0.001). Kaplan-Meier analysis demonstrated reduced event-free survival. Conclusions: Comorbid OSA and SCD were linked to significantly higher rates of VOC, stroke, and healthcare utilization. Current reliance on symptom-driven evaluation misses many patients with clinically silent disease. These results underscore the value of establishing routine polysomnographic screening in this population even when asymptomatic, to enable earlier diagnosis, timely interventions, and improve outcomes.

TRIO074. Central Sensitivity Disorders Are Associated with Increased Risk of Meniere's Disease: Real World Evidence Study - Authors: Yalda Yazdani, MD; Ella J. Lee, BS; Hera Kim, BS; Pey-Yu Chen, MD; Hamid R. Djalilian, MD; Mehdi Abouzari, MD, PhD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the central mechanisms linking systemic central sensitization and Meniere's disease.

Objectives: To determine whether central sensitivity disorders (CSD) are associated with an increased risk of developing Meniere's disease (MD). CSDs encompasses are characterized by central sensitization, neuroinflammation, and autonomic dysregulation, mechanisms that overlap with emerging theories regarding the pathophysiology of MD. These shared processes suggest that patients with CSD might be more likely to experience inner ear dysfunction and vestibular hypersensitivity. Study Design: Retrospective cohort study using the TriNetX Research Network, a global database of de-identified patient records. Methods: CSD was defined by ICD-10-CM diagnoses, including fibromyalgia, chronic fatigue syndrome, irritable bowel syndrome, migraine, tension type headache, temporomandibular joint disorder, complex regional pain syndrome I, restless legs syndrome, periodic limb movement disorder, primary dysmenorrhea, interstitial cystitis, and post-traumatic stress disorder. Patients with a diagnosis of MD before the first CSD diagnosis were excluded. CSD and non-CSD cohorts were compared after 1:1 propensity score matching for demographics and relevant comorbidities. The primary outcome was incident MD within five years of index diagnosis. Hazard ratios (HR) and 95% confidence intervals (CI) were estimated using Cox proportional hazards analysis. Results: After matching, 444,658 CSD patients and an equal number of matched controls were analyzed. CSD was associated with a significantly higher hazard of developing MD (adjusted HR = 2.09; 95% CI: 0.42-0.54; p < 0.001). Older age independently increased risk (HR = 1.033 per year; p < 0.001), and male sex was protective (HR = 0.87; p = 0.003). Hyperlipidemia also conferred a higher risk (HR = 1.44; p = 0.005), whereas hypertension, diabetes, obesity, and smoking were not significant predictors. Conclusions: CSD disorders were independently associated with approximately twice the hazard of developing MD compared with matched controls. These findings suggest that shared pathophysiologic or inflammatory mechanisms may link systemic central sensitization with inner ear dysfunction and support increased vestibular surveillance in patients with CSD.

TRIO075. Mitigating High Rates of Referral Attrition in Otolaryngology: A Prospective Real World Validation of a Machine Learning Triage Model - Authors: Stephanie M. Younan, MPH BS; Brooke Barry, BA BS; Kevin Xin, MD; Max Jiam, BS; Jolie L. Chang, MD; Nicole T. Jiam, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to identify manual processing delays as a primary driver of referral attrition in otolaryngology, describe the application of a machine learning model to automate referral triage, and evaluate the model's real-world impact on processing time and diagnostic accuracy.

Objectives: Manual referral triage creates critical processing delays, contributing to high rates of specialty referral attrition that compromise care for time sensitive otolaryngology conditions like suspected head and neck

malignancies. This study prospectively quantifies referral failure in an academic otolaryngology practice and evaluates the real-world performance of a machine learning (ML) model designed to resolve this bottleneck. Study Design: Prospective cohort study. Methods: This study analyzed all general otolaryngology referrals (n=192) received at a tertiary academic center over two months. Scheduling outcomes were analyzed using multivariable logistic regression to identify predictors of referral completion. Concurrently, a subset of live referrals (n=81) was silently processed by a novel ML model. The model processed incoming referral packets, containing unstructured clinical notes, to predict referral etiology. Its predictions were then compared against the definitive etiology documented in the final specialist visit notes, which served as the ground truth. Results: Only 42.2% of referrals resulted in a completed appointment. Failure was primarily due to an inability to contact the patient (65.8% of uncompleted referrals), a breakdown occurring within a median manual processing time of 10.5 days. The clinical referral reason was the sole significant predictor of scheduling success (p=0.003), with head and neck concerns being over three times more likely to be scheduled compared to otology related concerns (OR 3.08), the most common referral type. In the silent pilot, the ML model eliminated this delay, reducing processing time to under 90 seconds. It demonstrated 92.6% accuracy in identifying the specific referral etiology and 97.5% accuracy for broad diagnostic categories. Conclusions: Systemic delays in manual triage are a primary driver of referral failure in otolaryngology. This study demonstrates that an ML tool can virtually eliminate this processing bottleneck with high accuracy. By rapidly identifying the key predictive factor for scheduling success (referral etiology) this technology offers a validated, real-world solution to accelerate patient access to critical specialty care.

TRIO076. A Scoping Review of Allergic Rhinitis Treatment Impact on Sleep Disorders - Authors: Wynne Zheng, MA; Pearl Doan, BA; Jolie L. Chang, MD; Anna Butrymowicz, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to describe the effects of various allergic rhinitis treatments on sleep quality and understand the limitations of current evidence regarding sleep apnea outcomes.

Objectives: Allergic rhinitis (AR)-related nasal congestion impairs sleep, yet the impact of AR treatments remains uncharacterized. This scoping review aims to characterize which AR therapies may affect sleep quality and obstructive sleep apnea. Study Design: Scoping review. Methods: Following the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR), PubMed and Embase were searched for full texts linking AR treatment to sleep. Studies on adult AR patients with sleep related outcome measures after receiving treatment were included. Data was extracted and reviewed by 2 reviewers. Results: Of 2,326 abstracts, 25 studies met criteria, encompassing 3,295 adults treated for AR. Most (21/25, 84%) studies utilized allergy testing (skin-prick, n=15; Radioallergosorbent Test (RAST), n=4). AR therapies included immunotherapy (n=4; 16%), intranasal steroids/antihistamines (n=8; 28%), oral agents (n=9; 36%), alternative therapies (n=3; 12%), and surgery (n=1; 4%). Sleep related symptoms were assessed with the Epworth Sleepiness Scale (11 studies), Insomnia Severity Index (1), Athens Insomnia Scale (2), and snoring metrics (3). 93% (N=23) studies described sleep symptom improvement. Only 4 studies reported on sleep study metrics: 3 demonstrated apnea hypopnea index reductions following therapy (topical therapy (2) and surgery study (1)) and one study on mometasone furoate nasal steroid showed no AHI change. Conclusions: AR treatment with immunotherapy, topical therapies, and surgery improve symptoms of daytime sleepiness and insomnia, however sleep apnea and snoring metrics are sparse and heterogeneous. Future studies on objective metrics of sleep apnea such as AHI and sleep efficiency are required to evaluate changes in sleep metrics with AR therapies.

HEAD AND NECK

TRIO077. Role of Depth of Invasion in Predicting Contralateral Neck Disease in Oral Tongue Squamous Cell Carcinoma Patients - Authors: Abdurrahman Abdurrob, MD MS; Jake Sims, DO; Samanatha Tam, MD; Rushil Dang, BDS DMD

Educational Objective: At the conclusion of this presentation, participants should be able to understand the relationship between depth of invasion (DOI) and the risk of contralateral neck nodal spread in patients with well lateralized oral tongue squamous cell carcinoma (SCC).

Objectives: This study evaluates the impact of depth of invasion (DOI) on the risk of contralateral lymph node disease (CND) in patients with lateralized oral tongue squamous cell carcinoma (SCC). Study Design: Retrospective review. Methods: Patients were reviewed from a single tertiary care institutional database from 1998 to 2021. All patients with lateralized oral tongue SCC who underwent surgical resection were included and evaluated for CND in both primary and recurrent settings. Univariate and multivariate analyses were performed to evaluate the relationship between DOI and CND in this patient population. Results: A total of 103 patients underwent a total of 104 surgeries in this analysis. A majority of patients were female (60.2%), with a mean age of 59.9 years. The most common T-stage was T2 (39.4%) followed by T1 (32.7%). Loco regional control was noted in 75 patients (72.1%). Recurrence occurred in 29 patients (27.9%), and contralateral recurrence in 18 patients (17.3%). The mean DOI was 8.8 mm (SD 7.0). The mean DOI among patients with CND was 14.8 mm (SD 6.9) compared to 7.6 mm (SD 6.4) in those without CND (p less than 0.05). Univariate logistic regression demonstrated an odds ratio of 1.15 (95% CI, 1.06 - 1.27; p less than 0.05) for CND with increasing DOI. Conclusions: On evaluation of our institutional dataset, increasing DOI was associated with increasing risk of CND in patients with lateralized oral tongue SCC.

TRIO078. Geographical Distance and Care Coordination in Adjuvant Radiation Timing after TORS for Oral Squamous Cell Carcinoma - Authors: Aditi Doiphode, BA; Joseph Lipschitz, BS (Presenter); Josh Martins-Caulfield, BS; Sachin Pillai, BS; Shahzeb Hasan, MD; Michael Berger, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to identify care coordination as a key factor in adjuvant RT delays post-TORS.

Objectives: Timely initiation of adjuvant radiation therapy (RT) after oncologic surgery is critical for optimal outcomes, yet delays persist even in metropolitan regions. At urban tertiary centers, many patients travel long distances for specialized procedures like transoral robotic surgery (TORS), creating challenges when postoperative RT is delivered elsewhere. We examined whether travel distance or institutional coordination predicted delayed RT after TORS for oral squamous cell carcinoma (OSCC). Study Design: We are conducting an ongoing retrospective review of TORS cases at a tertiary academic center, with chart abstraction through 2025. Methods: For this preliminary analysis, cases from 2007 - 2015 were included (n=300). The primary outcome was RT delay (greater than 42 days post-surgery). Multivariable models adjusted for age, sex, HPV status, AJCC 8th stage, and reconstruction, assessing (1) home-to-surgical-hospital distance, (2) home-to-RT-site distance, (3) same vs. different institution care, and (4) a distance Ã— institution interaction. Distances were $\log_{10}$ transformed. Results: Among 113 patients receiving adjuvant RT, 51 (45%) initiated treatment greater than 42 days post-surgery. Median home distances were 30 miles to the surgical hospital and 25 miles to the RT site. Neither distance predicted delay (p greater than 0.6). Delayed patients were less likely to receive surgery and RT at the same institution (67% vs. 86%, p=0.019). In adjusted models, greater distance to the surgical hospital (aOR 1.07 per 10 miles, p=0.27) or RT facility (aOR 1.01, p=0.84) was not associated with delay. Different institution care for surgery and radiation showed nearly threefold higher odds of delay (aOR 2.93, p=0.051). The distance x institution interaction was nonsignificant (aOR 0.28, p=0.43), indicating distance did not modify this effect.

Older age (p=0.01) and reconstruction (p=0.02) independently predicted delay. Conclusions: In the included urban academic tertiary care center cohort, adjuvant RT delays after TORS reflected care fragmentation rather than geographic distance. Strengthening surgical-radiation coordination may improve timeliness more than proximity alone.

TRIO079. Cervical Plexus Blocks on Postoperative Pain and Opioid Use in Parathyroidectomy: A Systematic Review and Meta-Analysis - Authors: Piotr Domaszewski, BS; Ayman Khatib, BS; Adrianna Hekiert, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to consider if cervical plexus blocks are effective in reducing postoperative pain or opioid use in parathyroidectomies.

Objectives: To discover if cervical plexus blocks in parathyroidectomies may improve post- and intra- operative outcomes. Study Design: A systematic review and meta-analysis were conducted following the 2020 PRISMA guidelines. 5 databases were used (PubMed, Cochrane, Embase, Web of Science, and Scopus). Methods: The primary outcomes were postoperative pain, measured by the visual analog scale (VAS) and intraoperative opioid use. Secondary outcomes included duration of surgery (DOS) and intraoperative blood loss (IOBL). A search yielded 171 articles. 87 were duplicates and deleted, 84 were screened for by two authors. A meta-analysis was performed on R Studio and reported as standard mean difference (SMD). The random effects model was used to account for heterogeneity. Results: 6 final studies were included in our systematic review. Postoperative pain scores significantly decreased when compared to controls (SMD: -2.53, 95% CI [-4.89, -0.18], p less than 0.01). There was no difference in IOBL between study groups (SMD: 0.02, 95% CI [-0.29, 0.33], p=0.74). Application of CPB resulted in comparable surgical duration times in both groups (SMD: 0.14, 95% CI [-0.12, 0.39], p=0.81). Intraoperative opioid use slightly decreased in the CPB group, although not statistically significant (SMD: -0.3, 95% CI [-0.79, 0.20], p=0.13). Conclusions: CPB was effective in decreasing postoperative pain after parathyroidectomy with no impact on the duration of surgery. Although CPB showed no efficacy on IOBL, it slightly decreased intraoperative opioid use showing a promise of additional benefits of CPB that warrant further investigation. More studies are needed to fully explore the benefits of CPB in parathyroid surgery.

TRIO080. Evaluating Outcomes of a Preoperative Nutrition Quality Improvement Program in Oral Cavity Cancer Surgical Patients: A Retrospective Analysis - Authors: Amir S. Etemadi; Nader G. Zalaquett, MD; Anna D. Davide; Jess R. Jensen, LPN; Jackie S. Holger, RN; Kathryn M. Van Abel, MD

Educational Objective: At the conclusion of this presentation, participants should be able to understand the value and role of preoperative nutritional screening in the multidisciplinary care of patients undergoing surgery for oral cavity cancer (OCC).

Objectives: To evaluate outcomes of a nursing led preoperative nutrition screening and referral program in patients undergoing surgery for oral cavity cancer (OCC). Study Design: Retrospective chart review. Methods: We retrospectively reviewed OCC patients who underwent curative surgery and were seen in a multidisciplinary OCC clinic at a tertiary care hospital. On December 12, 2024, a nursing led initiative was introduced for nutritional status screening using the Patient-Generated Subjective Global Assessment (PG-SGA). Patients with scores </= 4 were referred for formal nutritional consultation. Patients treated in the 6 months before and after implementation of the intervention were compared for demographics, tumor characteristics, and postoperative outcomes. Results: Seventy-three patients were included in the study (35 pre-intervention and 38 post-intervention). Baseline characteristics, tumor characteristics, and surgery types were similar between groups. Following nutritional screening intervention, 30 patients (78.9%) received the preoperative PG-SGA assessment, and 70.0% scored >/=4 (required intervention) while 46.7% scored >/= 9 (in critical need for intervention). Preoperative nutrition consult orders increased from 2.9% pre-intervention to 45.9% post-inter-

vention (p<0.001), and completed consults increased from 2.9% to 24.3% (p=0.008). Completion of nutrition consultation was not associated with a delay to surgery. Median postop BMI loss was 0.45 post-intervention compared to 0.93 pre-intervention, which was not statistically significant. The comprehensive complication index (CCI) did not significantly differ between groups. Conclusions: Routine nutritional evaluation is essential in OCC care as malnutrition remains prevalent in this population and has significant clinical impact on outcomes. A nursing led PG-SGA program successfully identified patients at risk of malnutrition and increased referrals for formal assessment. Future research that focuses on nutrition optimization is necessary to impact perioperative outcomes.

TRIO081. Impact of Patient Age on the Predictive Value of Thyroid Ultrasound Features for Lymph Node Metastasis in Papillary Thyroid Carcinoma - Authors: Eric Gong, BA; Martha MacDonald, BS; Mathilda Monaghan, MPH; Maaike Van Gerwen, MD PhD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand how patient age modifies the predictive value of thyroid ultrasound features for lymph node metastasis in papillary thyroid carcinoma and to recognize the importance of incorporating age-adjusted sonographic criteria into preoperative risk stratification.

Objectives: To determine whether patient age modifies the association between ultrasonographic features and lymph node metastasis (LNM) in papillary thyroid carcinoma (PTC). Study Design: Retrospective cohort study. Methods: We analyzed 326 adults with surgically confirmed PTC treated between 2018 and 2020 at a tertiary academic center. Demographic, cytologic, and ultrasound features, including echogenicity, calcifications, margins, and nodule size, were collected. Associations between sonographic features and LNM were evaluated using multivariable logistic regression adjusted for age, sex, race, and body mass index. Analyses were then stratified by age using American Joint Committee on Cancer (AJCC) 8th edition (younger than 55 vs 55 years and older) and 7th edition (younger than 45 vs 45 years and older) cutoffs. Results: Of 326 patients, 155 (47.5%) had LNM. Isoechoic (adjusted Odds Ratio (aOR) 0.49, 95% Confidence Interval (CI) 0.28 - 0.83) and hyperechoic nodules (aOR 0.38, 95% CI 0.15 - 0.87) were protective compared with hypoechoic nodules. These associations persisted in younger than 55 years but not in those 55 years and older. Using the 45-year cutoff, calcifications (aOR 2.51, 95% CI 1.25 - 5.22), particularly microcalcifications (aOR 2.23, 95% CI 1.13 - 4.49), and irregular margins (aOR 2.60, 95% CI 1.06 - 6.80) predicted higher LNM risk, whereas isoechogenicity was protective (aOR 0.36, 95% CI 0.15 - 0.81). Hypoechogenicity predicted lower LNM odds in patients 45 years and older (aOR 0.40, 95% CI 0.17 - 0.93). Conclusions: Age may influence the predictive value of thyroid ultrasound features. Incorporating age-adjusted ultrasound criteria may improve preoperative risk stratification and surgical planning in PTC.

TRIO082. Role of TTN Mutations on Tumor Mutational Burden and mRNA Expression in HNSCC - Authors: Mona Khalafi, MS; Harshini Vemula, PhD; Eric R. Carlson, DMD MD EdM FACS; Srinivas V. Saladi, PhD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand TTN mutations are highly frequent in Head and Neck Squamous Cell Carcinoma and their relationship with tumor mutational burden, tumor stage, and mRNA expression.

Objectives: This study examines the association between TTN mutation status and tumor mutation burden (TMB), mRNA expression, and tumor stage in head and neck squamous cell carcinoma (HNSCC). Study Design: A retrospective analysis of TMB and mRNA expression in HNSCC patients with TTN mutations. Methods: Genomic data for 499 HNSCC patients were obtained from the TCGA GDC portal. Tumors were classified as TTN wild-type (WT) or mutated (mut) and stratified across American Joint Committee on Cancer (AJCC) stages T1 to TX. Kruskal-Wallis and Dunn's multiple comparison tests assessed differences in TMB and mRNA expression.

Mean and standard deviation values were calculated with log transformation to account for outliers. Results: 44% of HNSCC patients (n = 222) had TTN mutations. TTN-mut HNSCC patients exhibited significantly higher mean TMB compared to TTN-WT across all stages except T4b ($p<0.05$). Stage-dependent differences in mRNA expression were observed from T1 through T4a for both TTN-WT and TTN-mut groups ($p < 0.05$) but no consistent directional trend was identified. Conclusions: TTN mutations are common in HNSCC and are associated with higher TMB across most tumor stages. However, it was observed that patients with TTN mutations tended to present with more advanced tumor stages. These findings suggest that TTN mutations may be associated with more aggressive disease states in HNSCC.

TRIO083. Real World Adoption of Immune Checkpoint Inhibitors and Supportive Care Procedures in Advanced Mucosal Head and Neck Squamous Cell Carcinoma, 2016-2025 - Authors: Allen Khudaverdyan, BA; Christie Hung, BS; Lindsey Moses, MD; Umamaheswar Duvvuri, MD PhD

Educational Objective: At the conclusion of this presentation, the participants should be able to: describe national adoption trends of immune checkpoint inhibitors (ICI) in advanced mucosal HNSCC using aggregate EHR data; compare the prevalence of gastrostomy/PEG and tracheostomy use among ICI recipients versus non-recipients.

Objectives: Quantify annual adoption of immune checkpoint inhibitors (ICI) in advanced mucosal HNSCC and compare supportive care prevalence among ICI recipients versus non-recipients. Study Design: Retrospective cohort analysis from a multi-system EHR network (Epic Cosmos) of over 300 million patients, 2016-2025. Methods: Adults with stage III-IV mucosal HNSCC were included. ICI exposure was any order/administration for pembrolizumab, nivolumab, cemiplimab, atezolizumab, durvalumab, or avelumab. Outcomes were: (1) annual percent of ICI-treated and (2) prevalence of gastrostomy/PEG, tracheostomy, corticosteroids and levothyroxine use by ICI status. We summarized subsite, age, sex, smoking status, limited English-speaking, social vulnerability index, and insurance. Effect sizes are reported from Pearsons' Chi-squared distribution in Python. Results: ICI receipt for those with an active HNSCC diagnosis rose from 2.6% (2016) to 13.3% (2024); partial 2025 (until July 30) was 12.8%. Of 33,683 patients across the study window, 6,727 (20%) had history of ICI receipt and 26,956 (80%) did not. ICI recipients were similarly aged and sex-distributed but more often had public insurance (74.0% vs 69.4%). ICI patients more frequently carried oropharyngeal (55.0% vs 46.9%) and oral cavity (57.4% vs 53.4%) diagnoses. Smoking patterns were similar; limited English speaking and SVI were comparable. Supportive care markers were higher with ICI: PEG 52.4% vs 41.1%, tracheostomy 23.4% vs 20.8%, systemic corticosteroids 86.6% vs 69.3%, levothyroxine 47.3% vs 35.2%. Conclusions: In a national EHR network, ICI use in advanced mucosal HNSCC increased roughly fivefold since 2016, with slower recent growth. Patients receiving ICI therapy exhibited greater supportive care needs despite a similar stage of disease, offering a system level view of resource requirements in contemporary care. These real-world data fill a gap left by trials and single center series and can inform capacity planning, pathway design, and future patient level studies on sequencing, complications, and outcomes.

TRIO084. Prognostic Predictors of Recipient Site Complications in Head and Neck Cancer Free Flap Reconstruction: A Systematic Review and Meta-Analysis - Authors: Hailey Lewy, BS; Srivatsa S. Vasudevan, MD MS; Donovan Turpin, BS; Desi Delavary, BS; Cherie-Ann O. Nathan, MD FACS

Educational Objective: At the conclusion of this presentation, the participants should be able to recognize and stratify evidence-based demographic, clinical, and perioperative true risk factors associated with postoperative free-flap recipient site complications and failure in head and neck cancer reconstruction, enabling improved perioperative planning and complication prevention.

Objectives: To systematically synthesize the evidence on predictors of postoperative free-flap complications in

head and neck cancer (HNC). We aim to quantify the association between demographic, clinical, and perioperative variables and free-flap complications, including flap failure, surgical-site infection, delayed wound healing, and hardware exposure. Study Design: Systematic review and meta-analysis. Methods: We searched PubMed, Web of Science, Embase, and ScienceDirect for studies published from January 2000 through June 2025.â€‹ We included studies that evaluated predictors of recipient-site complications after free-flap reconstruction, specifically free-flap failure, surgical-site infection, delayed wound healing, overall recipient-site surgical complications, and hardware/plate complications. Risk of bias for cohort studies was assessed using the Newcastle Ottawa Scale. We performed random-effects meta-analyses to pool outcomes. Robustness was examined with leave-one-out (one-study-removed) sensitivity analyses. Results: Across the 76 studies, 77,383 head and neck cancer free flap patients were included; the median age was 60.8 years, and 77.6% were male. For surgical site infection, postoperative albumin less than 3.5 g/dL (p less than 0.0001), male sex (p less than 0.0001), low skeletal muscle mass (p = 0.033), osseous versus soft-tissue flap (p less than 0.0001), and prophylactic clindamycin versus ampicillin-sulbactam (p = 0.005) were significant predictors. For free flap failure, hyperglycemia (p = 0.037), use of an interposition vein graft (p less than 0.0001), and low prealbumin (p = 0.016) were significant predictors. For overall surgical complications, insulin-dependent diabetes (p = 0.001), ASA score greater than or equal to 2 (p = 0.026), ASA 3 versus 1 (p = 0.022), ASA 4 versus 1 (p less than 0.0001), low skeletal muscle mass (p = 0.003), Black race (p = 0.026), and greater than 10% weight loss (p less than 0.0001) were significant predictors. For delayed wound-healing complications, current smoking (p = 0.043) and preoperative radiation (p = 0.043) were significant predictors. For hardware complications or plate exposure, surgical site infection (p = 0.002) was a significant predictor. Across the 76 studies, 77,383 head and neck cancer free flap patients were included; the median age was 60.8 years, and 77.6% were male. For surgical site infection, postoperative albumin less than 3.5 g/dL (p less than 0.0001), male sex (p less than 0.0001), low skeletal muscle mass (p = 0.033), osseous versus soft-tissue flap (p less than 0.0001), and prophylactic clindamycin versus ampicillin-sulbactam (p = 0.005) were significant predictors. For free flap failure, hyperglycemia (p = 0.037), use of an interposition vein graft (p less than 0.0001), and low prealbumin (p = 0.016) were significant predictors. For overall surgical complications, insulin-dependent diabetes (p = 0.001), ASA score greater than or equal to 2 (p = 0.026), ASA 3 versus 1 (p = 0.022), ASA 4 versus 1 (p less than 0.0001), low skeletal muscle mass (p = 0.003), Black race (p = 0.026), and greater than 10% weight loss (p less than 0.0001) were significant predictors. For delayed wound-healing complications, current smoking (p = 0.043) and preoperative radiation (p = 0.043) were significant predictors. For hardware complications or plate exposure, surgical site infection (p = 0.002) was a significant predictor. Conclusions: Recipient-site complication risk in head & neck free-flaps is driven by perioperative physiology, not age/BMI, with the strongest signals for interposition vein grafting, hyperglycemia, and poor nutritional reserve. Overall complications rise with higher ASA, insulin-dependent diabetes, and greater than 10% weight loss; SSI links to post-op hypoalbuminemia, osseous flaps, low skeletal muscle mass, and clindamycin prophylaxis, and in turn drives hardware exposure. Prioritize nutrition/glycemic optimization, smoking cessation, beta-lactam based prophylaxis when appropriate, and careful planning when vein grafts are needed.

TRIO085. Functional and Survival Outcomes Following Transoral Robotic Surgery Versus Radiation Therapy for Early Stage Laryngeal Squamous Cell Carcinoma - Authors: Albert Y. Li, BA; Mishek Thapa, BS (Presenter); Nathan Vu Pham, BS; Lavender Micalo, BS; Tyler J. Gallagher, MD MPH; Niels C. Kokot, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the comparative functional and survival outcomes of transoral robotic surgery (TORS) versus primary radiation therapy for early-stage laryngeal squamous cell carcinoma. Participants will be able to identify differences in postoperative morbidity, including dysphonia, dysphagia, and speech rehabilitation utilization, and apply this knowledge to optimize individualized treatment selection and shared decision-making in early laryngeal cancer

management.

Objectives: To compare long-term functional morbidity and survival outcomes between transoral robotic surgery (TORS) and primary radiation therapy (RT) for early-stage laryngeal squamous cell carcinoma (LSCC). Study Design: Retrospective cohort study. Methods: Using the TriNetX US Collaborative Network (2005 - 2025) a national electronic medical record database adults with stage III LSCC were identified and grouped by primary treatment: TORS (n=276) or RT (n=827). Patients receiving chemotherapy were excluded. Cohorts were propensity score matched 1:1 (n=234 per group) for demographics, comorbidities, substance use, and T-stage distributions (TORS T1: [63.3%; T2: 21.0%]; RT [T1: 62.4%; T2: 20.1%]). Outcomes within 6 months, 1 year, 3 years, 5 years, and any time after treatment were included and compared dysphagia, dysphonia, tracheostomy and gastrostomy dependence, malnutrition, speech rehabilitation utilization, swallow evaluation, depression, anxiety, and overall survival. Results: TORS procedures included microlaryngoscopy with excisions or biopsy (74%); alongside partial or hemilaryngectomy and subtotal or supraglottic laryngectomy (22%). At 5 years, TORS was associated with higher odds of dysphonia (OR 2.65 [95% CI 1.39 - 5.06]) and greater speech rehabilitation utilization (OR 2.92 [95% CI 1.52 - 5.59]). TORS demonstrated non-significant but lower odds of dysphagia (OR 0.72 [95% CI 0.43 - 1.21]) and comparable rates of tracheostomy dependence (OR 0.90 [95% CI 0.44 - 1.84]) and swallow evaluation (OR 1.82 [95% CI 0.81 - 4.07]. Malnutrition trended lower among TORS patients (OR 0.67 [95% CI 0.29 - 1.53]), while depression (OR 0.59 [95% CI 0.27 - 1.31]), and anxiety (OR 1.88 [95% CI 0.90 - 3.93]) were not significantly different between groups. Five-year and anytime survival was equivalent between TORS and radiation (5 year: HR 0.73 [95% CI 0.47 - 1.12]; Anytime: HR 0.80 [95% CI 0.55 - 1.16]). Conclusions: For early-stage LSCC, TORS and radiation achieve comparable survival but distinct functional outcomes. These results highlight the importance of individualized treatment plans in early laryngeal cancer management.

TRIO086. Impact of Reconstructive Surgery on Postoperative Opioid Use Following Transoral Robotic Surgery - Authors: Josh Martins-Caulfield, BS; Aditi Doiphode, BA; Lisa Duan, BS; Bryn Anderson, BS; Shahzeb Hasan, MD; Michael Berger, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to recognize that reconstructive surgery following TORS was associated with less need for opioid analgesics among patients who had head and neck tumors.

Objectives: Transoral robotic surgery (TORS) provides minimally invasive access for the treatment of head and neck tumors but is often associated with substantial postoperative pain. While pain following TORS with primary closure or secondary intention healing has been described, little is known about how reconstructive technique influences postoperative analgesic requirements. The objective of this study is to examine this clinically relevant relationship, as differing reconstruction approaches may alter tissue trauma, pain trajectories, and opioid use. Study Design: A retrospective review of TORS cases performed at a tertiary academic medical center has commenced with chart abstraction through 2025. Methods: This preliminary analysis focuses on 225 patients who underwent TORS and reconstructive surgery for head and neck cancer between 2007 - 2015. Patients were categorized by reconstruction type: none (n = 75), local (n = 125), pedicled (n = 7), and free flap (n = 18). Daily opioid consumption was converted to morphine milligram equivalents (MME/day). Due to right-skewed data, nonparametric analyses were applied. All statistical analyses were performed in RStudio. Results: Mean opioid use was 48.8 +/= 73.9 mg/day (median=30 mg/day, IQR=12.7 - 54 mg/day). Kruskal-Wallis's testing showed a significant difference among reconstruction types (H=22.02, p<.001). Post-hoc analyses revealed significantly higher opioid use in patients without reconstruction compared to those with local, pedicled, or free flaps (p=.0027, .0073, 0.0212). No significant differences were found among reconstruction types themselves. Conclusions: Patients who underwent TORS without reconstruction required significantly higher postoperative opioid doses than those receiving reconstruction. These findings suggest that reconstructive repair

may mitigate postoperative pain likely due to the coverage of what would be an otherwise exposed wound. Further prospective studies with standardized pain assessments are warranted to guide reconstruction-specific opioid management following TORS.

TRIO087. Biochemical Response Following Neck Dissection for Recurrent or Residual Papillary Thyroid Cancer - Authors: Aviva S. Mattingly, MD MS; Andreja Radevic, BS (Presenter); Donald Sengstack, MS; Andreja Radevic, BS; Joaquin Austerlitz, BS; Lindsay Bischoff, MD; Sarah Rohde, MD

Educational Objective: At the conclusion of this presentation, the participants should gain a better understanding of biochemical response following revision neck dissection for papillary thyroid cancer and utilize this for preoperative counseling.

Objectives: To characterize patients undergoing neck dissection (ND) for residual or recurrent papillary thyroid cancer (PTC) and investigate initial biochemical response. Study Design: Retrospective cohort study. Methods: Patients undergoing ND for PTC after prior total thyroidectomy were identified using ICD10, CPT codes and pathology reports. Thyroglobulin (Tg) levels pre- and post-operatively were collected and biochemical response was defined as excellent (Tg less than 0.2 ng/mL), indeterminate (Tg 0.2-1.0 ng/mL) or incomplete (Tg greater than 1.0 ng/mL) response. Results: The surgical cohort included 127 patients, 55% female with a median age 52, undergoing central ND only (20%) or lateral ND (80%). Cases had a median of 3 metastatic nodes (IQR: 2-6) out of 19 total lymph nodes (IQR: 8-31) with 54% extranodal extension (ENE). Among 94 patients with Tg levels available, first postoperative Tg revealed 31% had excellent biochemical response, 30% had indeterminate response and 39% had an incomplete response.
Incomplete response was associated with older age (OR 1.03, p=0.025), presence of ENE (OR 2.67, p=0.026) and higher preoperative Tg (OR 1.05, p=0.045) on univariate logistic regression. In a multivariable model, higher preoperative Tg remained an independent predictor (OR 1.06, p=0.035). Unilateral compared to central neck dissection was associated with lower odds of incomplete response on multivariable regression (OR 0.20, p=0.026). Conclusions: Revision ND for PTC resulted in excellent biochemical response (Tg less than 0.2) in 31% of cases and indeterminate response (Tg less than or equal to 1.0) in 30% of cases. Incomplete biochemical response was associated with older age, ENE and higher preoperative Tg while unilateral neck dissection (vs central) was associated with lower odds of incomplete response. These findings can help inform patient counseling when planning subsequent operations for recurrent disease following initial thyroidectomy surgery.

TRIO088. Head and Neck Cancer Patient Perspectives on Preoperative Education Materials - Authors: Thu A. Nguyen, BS; Emma Starr, BS; Emma Rea, PA; Colleen Sommer, PA; Rohit Nallani, MD; Frank Materia, PhD MHS

Educational Objective: At the conclusion of this presentation, the participants should be able to: describe patient perspectives on informational materials provided in head and neck oncology care; identify patient preferences for the timing and format of receiving diagnosis-related information; discuss strategies to improve educational resources and reduce barriers to timely postoperative treatment.

Objectives: Head and neck cancer (HNC) treatment often requires complex multimodal care, with surgery followed by adjuvant therapy. Delays in referrals (e.g., radiation, dentistry) and limited psychosocial support can worsen outcomes. Providing patients with timely, structured educational materials may improve preparedness and care coordination. This study aimed to (i) explore patient perspectives of informational materials currently provided in the HNC clinic; (ii) understand preferences for timing and format of information delivery; and (iii) identify strategies to improve resources and reduce barriers to treatment. Study Design: Mixed-methods study using quantitative surveys and qualitative interviews guided by the Health Belief Model. Methods: HNC patients received printed materials outlining surgical timelines, referrals, and supportive services at a

preoperative “second-touch” visit. Surveys (Likert 1 - 7) and semi-structured interviews assessed usability, perceived benefit, and information preferences. Quantitative data were summarized descriptively, and qualitative interviews underwent inductive thematic analysis. Results: Patients (N=14; mean age=64; 57% male; 79% married) rated materials highly satisfactory (M=6.9), good (M=6.6), effective (M=6.5), interesting (M=6.4), confidence-building (M=6.3), and barrier-breaking (M=6.3), with low difficulty (M=1.7). Participants believed important others supported their use (M=6.7) and that similar HNC patients would use the materials (M=6.1). They intended to use the handouts (M=6.2) and follow provider recommendations (M=7.0). All interviewees found the resources beneficial, trusted provider-developed materials, and valued staff explanations. Most preferred earlier delivery (64%) and digital formats (71%). Conclusions: Patients demonstrated strong engagement and trust in provider-delivered educational resources. Early, multimodal dissemination, particularly involving caregivers, may enhance preparedness, adherence, and coordination across postoperative care.

TRIO089. Feasibility of Local Large Language Models for Surgical Decision Making in Thyroid Nodules - Authors: Justin M. Soffer, MD; Travis Clarke, MD; Maxwell Gray, BSc; M. Boyd Gillespie, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to: describe current rule-based and machine learning approaches for surgical decision support in thyroid nodule management; explain how large language models (LLMs) can interpret unstructured clinical text to assist with surgical decision making; discuss the advantages and limitations of locally deployed (on-premise) LLMs compared with cloud-based AI tools, including implications for HIPAA compliance and data security; evaluate the feasibility and diagnostic performance of hybrid LLM decision tree systems in replicating guideline-based recommendations for thyroid surgery.

Objectives: To evaluate whether locally deployed large language models (LLMs) can accurately determine surgical indications and procedure type for thyroid nodules while maintaining patient data privacy. Study Design: Retrospective validation study using deidentified clinical data. Methods: Seventy-seven deidentified patient histories with thyroid nodules were analyzed using four approaches: (1) LLM-based data extraction followed by a hard-coded decision tree based on American Thyroid Association guidelines; (2) LLM-generated prompts from extracted variables; (3) direct interpretation of unmodified patient histories; and (4) retrieval-augmented generation referencing published guidelines. Model outputs for surgical indication and procedure type were compared with expert recommendations. Diagnostic performance was evaluated by accuracy, sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV). Results: Strategy 1 achieved the highest overall diagnostic accuracy. For absolute surgical indications, accuracy was 0.87 with sensitivity 0.84, specificity 0.88, PPV 0.78, and NPV 0.91. For relative indications, accuracy was 0.77 with sensitivity 0.72, specificity 0.83, PPV 0.83, and NPV 0.73. Accuracy for determining total thyroidectomy and partial thyroidectomy was 0.84 and 0.76, respectively. Retrieval-augmented models improved contextual accuracy but required greater computational resources. Conclusions: Local LLMs combined with structured decision algorithms can reproduce and potentially enhance guideline-based decision making for thyroid nodules. This approach enables secure, HIPAA compliant use of AI for surgical planning, addressing a major gap in privacy-preserving clinical decision support within endocrine surgery.

TRIO090. Treatment Patterns in Head and Neck Cancer by HPV Status and Sociodemographic Factors - Authors: Christopher Stewart, BA; JB Eyring, BS; Brandy Gotti, DO; Alex Konvalina, BS; Alex Otto, DO; Kent McIntire, DO

Educational Objective: At the conclusion of this presentation, the participants should be able to identify how HPV status, race, and socioeconomic status influence the likelihood of receiving surgery, radiation, and chemotherapy in pharyngeal cancer, and recognize persistent sociodemographic disparities in treatment selection despite biologic stratification by HPV status.

Objectives: Evaluate the association of race and socioeconomic status (SES) with receipt of chemotherapy, radiation, and surgery in oropharyngeal cancer patients, mediated by HPV status. Study Design: Retrospective cohort study from 2010-2017. Methods: Patients with oropharyngeal cancer in the SEER database with HPV status were included. Data regarding the predictors (race/ethnicity, SES), outcome (treatment pathway), and the hypothesized mediator (HPV status) were obtained. Multivariate logistic regression and path modeling assessed associations between sociodemographic factors, HPV status, and treatment receipt (all permutations of chemotherapy, radiation, and surgery). Results: In the full sample (N=21,603), non-Hispanic Black patients had significantly lower odds of surgery (OR=.79, CI95%=.75 - .83, p<.001) and radiation (OR=.86, CI95%=.82 - .90, p<.001) compared to non-Hispanic White patients. Similarly, low SES was associated with lower odds of surgery (OR=.88, CI 95%=.84 - .92, p<.001) and radiation (OR=.91, CI 95%=.87 - .95, p<.001). HPV-positive cancer was associated with an overall greater odds of surgery compared to HPV-negative cancer (OR=1.12; CI 95%=1.08 - 1.16, p<.001). HPV status partially mediated the relationship between SES and likelihood of radiation (OR=1.05, CI 95%=1.01 - 1.09, p=.02). Conclusions: Characteristics including race and SES appear to have a significant association with treatment selection for oropharyngeal cancer. This relationship was explained in part by the varied HPV status across race and SES categorizations; however, race and SES remain significant determinants of treatment modality. These findings help fill gaps in the literature and improve our understanding of persistent disparities in the treatment of oropharyngeal cancer.

TRIO091. Lymphedema after Head and Neck Radiation: A Systematic Review and Meta-Analysis - Authors: Austin R. Swisher, MD; Evani Patel, BS; India Casaday, MD; Darby Keirns, MD; Justin Hintze, MD; David Lott, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to characterize the burden of post-radiation lymphedema in head and neck cancer and apply findings to surveillance and rehabilitation pathways.

Objectives: To evaluate the association between radiation therapy and the development of lymphedema among adults with head and neck cancer. Study Design: Systematic review and meta-analysis. Methods: In accordance with PRISMA guidelines, a comprehensive literature search of PubMed, Embase, Scopus, and Cochrane Library databases was conducted from 2000 - 2025. Eligible designs included cohort, case-control, randomized trials, and cross-sectional studies evaluating lymphedema incidence or severity after radiation for mucosal head and neck cancer. Data was extracted on study characteristics, radiation details, lymphedema definitions and assessment methods, timing, and outcomes. Study quality was appraised with validated tools. We pooled logit-transformed lymphedema rates using a DerSimonian-Laird random-effects model with Hartung-Knapp-Sidik-Jonkman variance correction, and quantified heterogeneity with I^2. Results: Of 264 identified abstracts, 26 studies met inclusion criteria. There were 23 cohort studies, 1 randomized trial, 1 cross-sectional and 1 case-control study, encompassing 3,542 patients. The pooled prevalence of lymphedema was 51.4% (95% CI, 36.7% - 65.9%). Qualitatively, definitions and timing varied (often 3 - 12 months post-treatment), most studies used clinical grading rather than imaging or patient reported tools, and reporting of concurrent therapies was inconsistent. Considerable statistical heterogeneity (I^2 = 94.9%) was observed. No publication bias was found. Overall risk of bias was low. Conclusions: This study suggests radiation is a strong risk factor for the development of lymphedema in head and neck cancer, supporting proactive risk stratification, routine screening, and timely rehabilitation within survivorship pathways. Future research should standardize lymphedema definitions, timing, and outcome measures in rigorous prospective cohorts to refine estimates and guide targeted prevention.

TRIO092. Medical Student ENT Bootcamp Improves Comfort with Basic ENT Skills - Authors: Zheng Hong Tan, PhD; Ericka Erickson, MD; Meredith Lind, MD; Aaron Thatcher, MD; Rishi Sethia, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to learn about the lack of otolaryngological procedural comfort, recognize aspects of the bootcamp geared towards different procedures, learn that a novel simulation-based bootcamp for senior medical students can improve comfort of included otolaryngology skills

Objectives: Most medical school graduates have reported poor overall comfort levels in managing otolaryngological problems. Current educational resources that medical students use to prepare for a rotation in otolaryngology do not fully capture the didactic and hands-on experience needed. We propose a novel simulation-based bootcamp for senior medical students will improve comfort and knowledge of included otolaryngology skills. Study Design: A blinded prospective cohort study of 11 senior medical students participating in a novel otolaryngology skills bootcamp. Methods: The bootcamp has 5 stations: ear microscopy and procedures, peritonsillar abscess drainage, head and neck ultrasound, airway management, and tracheostomy care scenario. Pre- and post- course surveys were administered to assess student comfort and knowledge of station skills. Results: Seven of the 11 students (63.6%) were fourth-year medical students (M4). M4s were more confident for an ENT sub-internship ($p=0.0039$) but there was no difference in knowledge or comfort with technical skills between the classes ($p=0.89$). Four students (36.4%) knew their interpupillary distance before the course, suggesting that most students have not worked with an otomicroscope. Students reported improved confidence for ENT sub-internship performance ($p=0.007$), comfort with using a flexible laryngoscope ($p=0.01$), managing pediatric airway tracheostomies ($p<0.0001$), making a myringotomy with tube insertion ($p=0.0004$) and locating the parotid on ultrasound ($p<0.0001$). Median knowledge scores remained consistent at 3/5 as this course focused on technical skills. Conclusions: A bootcamp for senior medical students improves comfort with included otolaryngological procedures. This fills an unmet need for technical skill training in medical education which can be addressed with this novel course geared towards senior medical students.

TRIO093. Neighborhood Level Disadvantage as a Determinant of Surgical Melanoma Outcomes in the Head and Neck - Authors: Evan A. Thomas, BS; Chaz Stucken, MD; Scott McLean, MD PhD; Molly Heft Neal, MD; David Forner, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to identify the impact of socioeconomic disadvantage on head and neck melanoma outcomes and recognize opportunities to address access-related barriers to timely management.

Objectives: To characterize the role of neighborhood level disadvantage measured via Area Deprivation Index (ADI) in surgical melanoma management by understanding its association with melanoma thickness and tumor discrepancy between biopsy and surgery. Study Design: This is a retrospective cohort study of 321 patients with primary cutaneous melanoma of the head and neck who were surgically treated at a single tertiary care center between 2012-2020. Methods: Clinicodemographic information was abstracted from patients' medical records. Patients' zip codes determined state ranked ADI quartiles and rurality using Rural-Urban Commuting Area (RUCA) codes. Covariates included age, sex, race/ethnicity, and distance to hospital. Multivariable linear regression models assessed associations between ADI quartile and clinical outcomes, adjusting for demographic factors. A p-value below 0.05 indicated significance. Results: This analysis included 321 patients.

Patients in the most socioeconomically disadvantaged quartile (Q4) had significantly greater surgical tumor thickness (B = 1.31mm, 95% CI = 0.01-2.61, p = 0.049) and greater thickness discordance between biopsy and surgery (B = 1.29mm, CI = 0.25-2.34, p = 0.015) when compared to Q1 while adjusting for covariates. ADI Q4 was also independently associated with a 19% increase in time to surgery (B = 0.178, 95% CI = 0.044-0.313, p

= 0.009). The effect of ADI on tumor discrepancy persisted when adjusting for time to surgery and biopsy type (p = 0.023). Conclusions: Neighborhood socioeconomic disadvantage is associated with greater surgical tumor thickness, increased tumor discrepancy between biopsy and surgery, and increased delay to definitive management. These findings suggest further biologic or access-related delays may be contributing to melanoma severity in socioeconomically disadvantaged populations.

TRIO094. Margin Status and Adjuvant Therapy in Oropharyngeal Cancer: A Retrospective Analysis of Transoral Robotic Surgery Outcomes - Authors: Troy Weinstein, BSHS; Charlie Gallego, BS; Steven J. Wang, MD; Shethal Bearelly, MD

Educational Objective: At the conclusion of this presentation, participants will understand the prognostic significance of agreement between intraoperative frozen section and final permanent margin status in TORS for oropharyngeal cancer. Participants will also gain a better understanding of prognosis in TORS alone vs TORS with adjuvant therapy.

Objectives: To assess how agreement between frozen and permanent margin status influences survival and recurrence, and to compare outcomes between TORS and TORS with adjuvant therapy. Study Design: Retrospective cohort study of 69 patients at a single academic center. Methods: We evaluated adult patients diagnosed with oropharyngeal cancer who had TORS surgery between 2017 - 2023. Kaplan-Meier and Chi-squared analyses identified variables impacting survival and recurrence. Results: Sixty-nine patients (mean age 64.4 +/= 10.8 years; 81.2% male) were included. Margin groups included main+/frozen+ (10.1%), main+/frozen- (40.6%), and main-/frozen- (30.4%). Mean DFS was 3.0, 3.4, and 4.2 years, respectively, with no significant differences in DFS (p = .482 and .238), OS (p = .297 and .086), or recurrence (p = 1.0, p=1.0) compared with the main-/frozen- group. DFS was similar between the main+/frozen+ and main+/frozen- groups (p = .737), while OS could not be calculated due to limited events. No significant differences were observed between TORS alone and TORS with adjuvant therapy in OS (respective means = 4.4 and 5.0 years, p = .052), DFS (respective means = 3.7 and 4.4 years, p = .201), or recurrence (p = .546), though OS trended toward significance, favoring adjuvant therapy. Stage matched analyses by T, N, and overall stage yielded similar results (all p greater than .05). Results limited by sample size and few events. Conclusions: Agreement between frozen and permanent intraoperative specimens did not affect survival or recurrence. Outcomes were similar between TORS alone and TORS with adjuvant therapy, although improved OS trended towards significance with adjuvant therapy.

TRIO095. To Open or not to Open: Post-Thyroidectomy Complications in Adults with Prior Neck Incision -- A Multicenter, Retrospective Cohort Study - Authors: Syeda Maria Ahmad Zaidi, MD; Hania Fatima, MD; Rafay Salman, MD; Taha Shaikh, MD; Syed Akbar Abbas, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to identify post-operative complications of thyroidectomy in patients with prior neck incisions and describe preventative peri- and post-operative management strategies.

Objectives: This study aims to compare the incidence and significance of 30-day infectious complications, non-infectious complications, change in living disposition, delayed discharge, unplanned readmission, unplanned re-operation and all-cause mortality among adult patients undergoing thyroidectomy with or without prior neck incision. Study Design: This is a multi-center, retrospective cohort study. Methods: This retrospective study utilized the National Surgical Quality Improvement Program (NSQIP) database to analyze all adult patients who underwent thyroidectomy from 2016 to 2023. Multivariable logistic regression models were used to identify associations of prior neck incisions with postoperative complications. Results: Out of the 29,940 patients undergoing thyroidectomy, 3100 (10.3%) had a history of prior neck incision; and were more likely to have disseminated cancer (1.9% vs 1%, p<0.001) and treated at an inpatient facility (43% vs 38%, p<0.001).

Postoperative complications occurred more frequently in patients with prior neck incision (3.0% vs 1.9%, p < 0.001). On multivariable logistic regression, prior neck surgery was associated with infectious (OR: 1.54, 95% CI: 1.15-2.03) and non-infectious complications (OR: 1.22, 95% CI: 1.09-1.37), cardiac arrest (OR: 3.76, 95% CI: 1.31-9.67), ventilator dependance for over 48 hours (OR: 2.51, 95% CI: 1.15-5.05), transfusion due to intra-operative bleeding (OR: 3.61, 95% CI: 1.93-6.50) and prolonged length of stay (OR: 1.31, 95% CI: 1.12-1.52). Alarmingly, increased odds of overall morbidity (OR: 1.57, 95% CI: 1.23-1.96) and mortality (OR: 3.18, 95% CI: 1.25-7.39) were observed in this group. Conclusions: Since post-thyroidectomy morbidity and mortality in patients with prior neck incision is significant, minimally invasive video-assisted thyroidectomy or endoscopic transoral, retroauricular, axillary or transareolar approaches can be considered.

TRIO096. Financial Toxicity in Head and Neck Cancer: A Population Based Study - Authors: Amanda Zhang, MD; John D. Cramer, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to describe the prevalence and drivers of financial toxicity in head and neck cancer, recognize its association with survival, and discuss clinical and policy strategies to mitigate its impact.

Objectives: To characterize the temporal and domain specific patterns of financial toxicity (FT) in head and neck cancer (HNC) survivors and assess its association with overall survival. Study Design: Retrospective cohort study. Methods: Using the National Health Interview Survey (2013 - 2018) linked to the National Death Index, we identified 311 HNC survivors and 933 matched controls. Survivors were classified as recent (less than 5 years from diagnosis) or long-term (5 or more years). FT was evaluated across material, psychological, and behavioral domains. Cox proportional hazards models assessed the relationship between FT and overall survival. Results: FT affected 58.6% of recent survivors, 47.3% of long-term survivors, and 46.4% of controls. Material hardship was the leading contributor: 39% of recent survivors reported difficulty paying medical bills versus 22% of controls. Psychological distress was prevalent across all groups, and cost-related care avoidance persisted beyond five years. FT rates were highest among uninsured (92.9%) and Medicaid patients (81.9%) and lowest among privately insured (42.5%) and Medicare only (44.1%). High-deductible health plans increased risk, while health savings accounts offered no measurable protection. Among recent survivors, FT independently predicted higher mortality (HR 2.03, 95% CI 1.01 - 4.07). Conclusions: FT is highly prevalent among HNC survivors, especially within five years of diagnosis, and independently predicts survival. Material hardship and care avoidance persist despite insurance coverage, underscoring urgent need for targeted clinical interventions and policy reform

LARYNGOLOGY/BRONCHOESOPHAGOLOGY

TRIO097. A Silent Risk: The Impact of Chronic Voice Disorders on Mental Health - Authors: Hussain K. Asgarali, BS; Robert E. Africa, MD; Nausheen Jamal, MD MBA

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the relationship observed between different chronic voice disorders and mental health outcomes.

Objectives: To evaluate the relationship between chronic voice disorders and mental health disorders including depression and anxiety. Study Design: Multicenter, retrospective cohort study in the United States. Methods: The TriNetX database was used to obtain statistics on patients aged 18 years or older who either did or did not have a diagnosis of chronic voice disorders including dysphonia, vocal cord paralysis, nodules, and polyps. These two cohorts were compared to each other to evaluate the incidence of depression, anxiety, and prescriptions of selective serotonin reuptake inhibitors (SSRIs), serotonin-norepinephrine reuptake inhibitors (SNRIs), and benzodiazepines. The relative risks (RR) with 95% confidence intervals (95% CI) were

obtained. Results: The voice disorder cohort had significantly higher occurrences of depressive episodes (single and multiple) at 1 (RR:1.177[1.141-1.214]) and 3 years (RR:1.378[1.331-1.426]), new SSRI prescription at 1 (RR:1.122[1.09-1.156]) and 3 years (RR:1.221[1.183-1.261]), new SNRI prescriptions at 1 (RR:1.149[1.104-1.196]) and 3 years (RR:1.293[1.244-1.345]), new benzodiazepine prescriptions at 3 (RR:1.23[1.197-1.264]) and 5 years (RR:1.221[1.177-1.268]), anxiety at 1 (RR:1.089[1.063-1.116]) and 3 years (RR:1.272[1.237-1.308]), experienced a single depressive episode of depression at 1 (RR:1.192[1.154-1.231]) and 3 years (RR:1.424[1.372-1.478]), and experienced multiple depressive episodes at 1 (RR:1.184[1.124-1.251]) and 3 years (RR:1.313[1.252-1.376]). Conclusions: The findings highlight the importance of early intervention regarding mental health care as chronic voice disorder patients were observed to have higher instances of adverse mental health outcomes. Timely management of these outcomes could potentially benefit this population and mediate their mental health outcomes.

TRIO098. AI Enhanced Ultrasound for Automated Airway Landmark Detection in Laryngotracheal Stenosis - Authors: Nour Awad, MD; Luigi Melaragno, BS; Peter J. Larson, MD PhD; Manikanta Varaganti, BE; Laura J. Brattain, PhD; Gregory R. Dion, MD

Educational Objective: At the conclusion of this presentation, the participants should be familiar with how the Text-to-Image Diffusion with Class-Aware Sampling (T2ID-CAS) framework is used to train and evaluate a YOLO-based AI model for automated airway landmark detection in patients with complex airway anatomy.

Objectives: Ultrasound is a bedside and safe imaging modality, and is increasingly employed in head and neck diseases, including laryngotracheal stenosis (LTS). Automated landmark detection using deep learning could improve real-time characterization of LTS, but class imbalance limits accuracy for underrepresented structures such as tracheal rings, vocal folds, and stenosis. Study Design: We applied a Text-to-Image Diffusion Model with Class-Aware Sampling (T2ID-CAS) framework to train an AI model based on the YOLO (You-only-look-once) AI architecture for automated airway landmark detection in patients with and without LTS. Methods: Upon IRB approval 6 adult participants, 3 with LTS (mean age 48 years, mean BMI 24.1 kg/mÂ²) and 3 controls (mean age 46 years, mean BMI 35.0 kg/mÂ²), were enrolled. For subjects with high BMI >/= 30, imaging depth was increased to 6-8cm to capture deeper tracheal structures. Yolo-Mark was used to annotate strap muscles, tracheal rings, thyroid gland, cricoid cartilage, thyroid cartilage, vocal folds, and stenosis for model training. We report the Mean Average Precision (mAP) for all the classes. Results: The YOLOv9 model, fine-tuned using CAS and diffusion synthetic images, achieved a mAP of 0.86, ranging from strap muscle 0.95 to vocal folds 0.75, and an Area under the Curve (AUC) of 0.70, demonstrating both feasibility and challenges in automated airway analysis in LTS. Conclusions: Our T2ID-CAS proved feasible in this pilot study, as future work will focus on refining it with a larger dataset. This work lays the foundation for AI-Enhanced ultrasound as a real-time tool for future robotic surgical management of complex airway stenosis.

TRIO099. Comparing Outcomes of Repeat Drug Induced Sleep Endoscopy (DISE) in Pediatric Patients: A Retrospective Analysis at Our Children's Hospital - Authors: Michelle J. Buncke, MD; Derek Lam, MD; Rukaya Fareh, BS

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the reliability of drug induced sleep endoscopy among pediatric patients with obstructive sleep apnea.

Objectives: Test-retest reliability and changes in drug induced sleep endoscopy (DISE) after surgical treatment in children with OSA has not been well studied. Our aims were: 1) to evaluate the test-retest reliability of DISE, and 2) compare changes in DISE among children who underwent surgery to those who did not. Study Design: This is a retrospective cohort study of children who underwent multiple DISE procedures. The electronic medical record was reviewed for demographics, comorbidities, and surgical data. DISE findings were scored

using the IPSES (International Pediatric Sleep Endoscopy Scale). Methods: Linearly weighted kappa analysis was used to determine test-retest reliability in children who had no intervention between DISE procedures (group 1). Mean changes in IPSES score at each anatomic level were compared using t-tests between group 1 and children who underwent surgery between DISE exams (group 2). Results: n = 48 (23 in group 1, 25 in group 2). Children in group 1 were slightly younger (mean age 7.2 vs 9.4 years, p = 0.002) and had a longer interval between DISE exams, but this was not statistically significant (468 days vs 308 days, p = 0.06). The percentage of comorbidities including Down syndrome, neuromuscular disorders, craniofacial abnormalities, and asthma, did not differ significantly between group 1 and group 2. Reliability of repeated DISE exams without intervention (group 1) was weak at the arytenoids and nasal airway (kappa = 0.17 and 0.06 respectively), moderate at the nasopharynx, velopharynx and base of tongue (kappa = 0.43, 0.36 and 0.40 respectively), and good at the epiglottis and oropharynx (kappa = 0.53 and 0.67 respectively). Mean changes in IPSES ratings at the nasopharynx were significantly greater (-0.48 vs 0.09) in group 2 compared to group 1 (p = 0.003). Conclusions: DISE is most reliable in assessing the epiglottis, oropharynx, nasopharynx, velopharynx and base of tongue, but may not be reliable in assessing the arytenoids and nasal airway. Sleep surgery leads to observable changes in DISE scores.

TRIO100. Glucagon-Like Peptide 1 Receptor Agonist Treatment Diminishes Lifetime Risk of Laryngotracheal Stenosis and Subsequent Airway Interventions - Authors: Carlos X. Castellanos, MD MHS; Matthew E. Lin, MD; Oluwatobiloba Ayo-Ajibola, BA; Dinesh K. Chhetri, MD

Educational Objective: At the conclusion of this presentation, participants should gain an appreciation for the clinical association between glucagon-like peptide-1 receptor agonist therapy and the diminished relative risk of airway stenosis and its treatment sequelae.

Objectives: To assess the clinical association between Glucagon-like Peptide-1 Receptor Agonists (GLP1-RA) and Laryngotracheal Stenosis (LTS). Study Design: This large multicenter cohort study examines the clinical records of the TriNetX database harboring 20 years of data (through August 2025) from 76 tertiary healthcare organizations. Methods: A database query of adult medical records with and without Type-2 Diabetes Mellitus (T2DM) who had at least one year of GLP1-RA treatment and no prior diagnosis of LTS. Propensity score matching was performed for demographic characteristics and known risk factors of LTS. Subsequently, relative risk (RR) was calculated to explore the risk of LTS diagnosis and subsequent airway interventions. A secondary analysis among patients with a prior diagnosis of LTS evaluated the RR of airway interventions at 1-, 5-, and 10-years after diagnosis. Results: The T2DM GLP1-RA cohort included 410,967 individuals (210,816 women [53.6%]) with a mean (SD) age of 55 (13.9) years. The T2DM non-GLP1-RA cohort included 1,844,084 individuals (851,593 men [50.2%]) with a mean age of 58.8 (18.6) years. For lifetime risk after T2DM diagnosis, GLP1-RA users were less likely to develop LTS (998, 0.25% vs. 1,507, 0.38%; RR 0.66, 0.61â€“0.72), require endoscopic dilation (193, 0.05% vs. 308, 0.08%; RR 0.63, 0.52â€“0.75), tracheostomy (985, 0.25% vs. 2741, 0.70%; RR 0.36, 0.33â€“0.39), or intubation (3,960, 1.0% vs. 9,495, 2.4%; RR 0.42, 0.40â€“0.43). The LTS GLP1-RA cohort included 2,663 patients (1,697 women [63.7%]), with a mean age of 55.5 (14.1) years. The LTS non-GLP1-RA cohort included 186,365 individuals (91,599 women [50.2%]) with a mean age of 43.2 (28.5). Ten years after UAS diagnosis, endoscopic dilations (66, 2.48% vs. 135, 5.07%; RR 0.49, 0.37â€“0.64), tracheostomy (140, 5.26% vs. 335, 12.58%; RR 0.42, 0.35â€“0.50), intubations (300, 11.27% vs. 583, 21.89%; RR 0.52, 0.45â€“0.59) and open interventions 2(2, 0.83% vs. 52, 1.95%; RR 0.42, 0.26â€“0.70) remained less likely in patients on GLP1-RA therapy. Conclusions: This cohort study highlights the clinical association between GLP1-RA treatment and a decreased relative risk of LTS diagnosis and lifetime risk of subsequent airway interventions.

TRIO101. Improving Measurement Efficiency of the Cough Severity Index with Item Response Theory - Authors: Elliana K. Devore, MD; Christopher D. Dwyer, MD; Thomas L. Carroll, MD; Samantha E. Kridgen, SLP; Sana Alkhatib, MS; Jennifer J. Shin, MD SM

Educational Objective: At the conclusion of this presentation, the participants should be able to explain the application of item response theory (IRT) in evaluating the Cough Severity Index (CSI), identify high-performing items within the instrument, assess the utility of a proposed 5-item subset for screening purposes, and compare its discriminatory ability to the full 10-item scale using ROC-AUC analysis.

Objectives: To utilize item response theory (IRT) to assess the Cough Severity Index (CSI) instrument and determine (1) which items offer the most information, (2) if a proposed shorter 5-item scale yields differing discriminatory ability, compared to the 10-item instrument, and 3) whether a subset of items have sufficient discrimination and precision to serve as a screen within an adaptive test. Study Design: Prospective data from 4,245 patients who completed the Cough Severity Index at tertiary care or community sites were analyzed using item response theory to evaluate item-level discrimination and redundancy, and to assess the performance of a proposed 5-item subset compared to the original 10-item instrument. Methods: 4,245 patients completed the CSI during evaluation at tertiary care or community sites. IRT analysis generated discrimination and location parameters for each question. Residual item correlations suggested potential redundancies. Taken together, a 5-item subset was assessed with information function curves. Areas under receiver-operator characteristic curves (ROC-AUC) were used to evaluate the discriminatory ability for clinical diagnoses related to upper airway chronic cough. Mean scores of <1 in the 5-item subset were assessed as a potential negative screen for the full 10-item instrument. Results: Discrimination parameter estimates ranged from 0.65 to 2.76, with the greatest discrimination in items related to embarrassment or avoiding places due to cough. Applying these data, along with residual item correlations and location parameters, a potential 5-item subset was proposed. ROC-AUC analyses revealed no significant difference between the 5-item subset and parent 10-item instrument for ability to discriminate cough-related clinical diagnoses. Those with a 5-item mean score <1 had significantly lower 10-item scores (mean 10.0, 95%CI 9.4-10.5). Conclusions: IRT data identified items for a proposed 5-item subset which reflect the latent trait and provide a foundation for briefer screening within an adaptive version of CSI.

TRIO102. Improving Measurement Efficiency of the Dyspnea Index with Item Response Theory - Authors: Elliana K. Devore, MD; Christopher D. Dwyer, MD; Thomas L. Carroll, MD; Samantha E. Kridgen, SLP; Sana Alkhatib, MS; Jennifer J. Shin, MD SM

Educational Objective: At the conclusion of this presentation, the participants should be able explain the principles of item response theory (IRT) and how it applies to evaluating the Dyspnea Index (DI), identify which DI items provide the most information across the spectrum of dyspnea severity, assess the feasibility of estimating dyspnea using a reduced item set while maintaining measurement accuracy, compare the discriminatory ability of a proposed 5-item DI scale with the original 10-item instrument using ROC-AUC analysis, and interpret information function curves and residual item correlations to evaluate item performance and redundancy.

Objectives: To utilize item response theory (IRT) to assess (1) questions within the Dyspnea Index (DI) and identify which convey the most information and cover the broadest range of the measured trait, (2) whether dyspnea can be estimated using fewer items while preserving accuracy, and (3) if a proposed 5-item scale offers different discriminatory ability, compared to the 10-item instrument. Study Design: Prospective data from 2,734 patients who completed the Dyspnea Index at tertiary care or community sites were analyzed using item response theory to evaluate item discrimination, identify redundant information, and assess the performance of a proposed 5-i Methods: Prospective data from 2,734 patients who completed the DI during evaluation at a tertiary care or community site were investigated. IRT analysis yielded discrimination and location parame-

ters for each item. Residual item correlations were assessed for redundant information. From these results, a 5-item subset was created and evaluated with information function curves. Areas under receiver-operator characteristic curves (ROC-AUC) were also calculated to evaluate the discriminatory ability for dyspnea-related clinical diagnoses. In addition, mean scores of <1 for the 5-item set were assessed as a potential negative screen for the full 10-item set. Results: The range of item discrimination parameter estimates was 1.10 to 2.48, with the highest discrimination in questions about strain and effort of breathing. After considering residual item correlations and location parameters, a proposed 5-item subset was identified. ROC-AUC analyses revealed no significant difference between the 5-item subset and 10-item instrument in their ability to discriminate dyspnea-related clinical diagnoses. Mean scores of <1 for the 5-item set were associated with low 10-item sum scores (mean 12.1, 95%CI 11.2-13.1). Conclusions: Items within a proposed 5-item subset of the 10-item DI could have utility within an adaptive assessment.

TRIO103 WITHDRAWN

TRIO104. Management of Chronic Cough: Insights from a Survey of Non-Otolaryngology Clinicians - Authors: Vicki Liu, BS; Kira Wang; Kyle Cook, BS; Helena Yip, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand current practice patterns for chronic cough in non-otolaryngology settings.

Objectives: Neurogenic cough is a sensory neuropathy characterized by a heightened cough reflex unresponsive to standard treatments. While otolaryngologists have increasingly utilized therapies such as neuromodulators, behavioral cough suppression, and superior laryngeal nerve (SLN) blocks, the adoption of these methods in other specialties remains unclear. This study aims to examine current evaluation and treatment patterns for chronic cough among non-otolaryngology providers. Study Design: Cross-sectional survey. Methods: An anonymous web-based survey was distributed to clinicians in non-otolaryngology specialties that commonly encounter cough. Responses documented providers' backgrounds and management approaches to chronic cough. Cochran's Q test was used to assess differences in the proportion of respondents endorsing various etiologies and treatments for chronic cough. Results: 56 survey responses were collected, comprising 45 physicians and 11 nurse practitioners. Specialty breakdown was as follows: Internal Medicine (35.7%), Family Medicine (26.8%), Pulmonology (19.6%), Allergy/Immunology (1.8%), and Other (16.1%). Neurogenic cough was identified as an etiology of chronic cough significantly less often (44.6%) compared to allergies (94.6%), asthma (92.9%), GERD (85.7%), and lung disease (75.0%) ($p < 0.001$). Only 16.1% of respondents reported using neuromodulators, primarily pulmonologists, whereas inhaled corticosteroids (75.0%), proton pump inhibitors (71.4%), systemic steroids (19.6%), and antibiotics (17.9%) were used more often ($p < 0.001$). 44.6%, 42.9%, 37.5%, 16.1%, and 12.5% of respondents were familiar with laryngeal Botox injection, neuromodulators, cough suppression therapy, SLN block, and tetracaine lollipops respectively. Conclusions: Despite familiarity with therapeutic options, neurogenic cough may be underrecognized and undertreated as an etiology of chronic cough among non-otolaryngology providers.

TRIO105. Surgical Burden in Adult Recurrent Respiratory Papillomatosis: A Meta-Analysis of HPV Genotype 6 vs. 11 - Authors: James Lu, BA; Caitlin Elysse Deffler, BS (Presenter); Kaiwen Chen, BS; Phillip Purnell, MD PhD

Educational Objective: At the conclusion of this presentation, the participants should be able to: synthesize available data comparing the number of surgeries per year between HPV 6 and HPV 11 in recurrent respiratory papillomatosis (RRP); assess the impact of demographic and clinical characteristics, including gender and age, on surgical burden; evaluate the strength of HPV genotype as a predictor of disease severity across studies.

Objectives: Recurrent respiratory papillomatosis (RRP) is a rare disease that requires repeated surgical interventions and is pathologically driven by low-risk HPV types 6 and 11. Some prior studies suggest that HPV 11 may confer a more aggressive disease course, but findings range across studies. This meta-analysis evaluates whether HPV genotype is associated with increased surgical frequency. Study Design: Systematic review and meta-analysis following PRISMA guidelines. Methods: Data on surgical frequency by HPV genotype was extracted from published studies. The primary outcomes were surgeries per year and the total number of surgeries. Wilcoxon rank-sum tests and multivariable linear regression were used for comparative analysis, examining age and gender as potential confounders. Results: Data from 16 studies were pooled. Across 128 patients, those with HPV 11 (n=38) had a significantly higher mean number of surgeries per year compared to those with HPV 6 (n=90) (2.81 vs. 1.57, p=0.005). Linear regression confirmed HPV 11 was associated with 1.24 additional surgeries per year (p<0.001). Furthermore, analysis of 268 patients showed HPV 11 was linked to a significantly greater total surgical burden than HPV 6 (mean: 17.6 vs. 7.7 surgeries, p<0.001). Age showed a modest inverse correlation with surgical frequency, while gender was not a significant predictor. Conclusions: This meta-analysis provides strong evidence that HPV 11 is associated with a more aggressive RRP disease course, requiring nearly twice as many surgeries per year and more than double the total number of surgeries compared to HPV 6. These findings support the prognostic value of HPV subtyping. Genotyping should be considered a key factor in clinical management, guiding patient counseling, surveillance intensity, and consideration of adjuvant therapies.

TRIO106. The Role of Botulinum Toxin B in Laryngeal Dystonia: A Scoping Review - Authors: Brendan D. McNeely, MD MSc; Ying-Jie Li, BSc; Amanda Hu, MD FRCSC

Educational Objective: At the conclusion of this presentation, the participants should be able to identify and summarize the current evidence that exists surrounding Botulinum toxin B for the treatment of laryngeal dystonia.

Objectives: To determine the role of BTXB for the treatment of laryngeal dystonia with emphasis on interventional outcome and patient safety. Study Design: Systematic review. Methods: A PRISMA-ScR style systematic review of EMBASE, MEDLINE, and Web of Science was performed for English language studies from database inception to July 2025. Study selection was independently performed by two investigators. Interventional technique, outcomes (voice and complications), and patient-reported outcomes measures (PROM) were analyzed. Study quality was assessed with ROBINS-I. Results: From 171 articles, 4 studies were included for analysis. A total of 47 patients were included; 46 of which were diagnosed with adductor laryngeal dystonia. The average BTXB dose per patient was 105 mouse units of BTXB per vocal fold injected, approximately 50-fold greater than conventional doses of BTXA. Injection techniques were not consistent across studies and included trans-thyrohyoid and under direct laryngoscopy. Two non-randomized studies found BTXB to be equivalent to BTXA treatment using qualitative patient self-assessment of percentage normal voice and voice spasm severity. No study assessed PROMs. No study reported any complications associated with treatment. No studies compared outcomes between anesthetic techniques. All articles were categorized as serious risk of bias. Conclusions: Limited evidence currently exists for the standardization of BTXB for the treatment of laryngeal dystonia. Future research using standardized outcome measures is warranted.

TRIO107. Office Based Stomaplasty Following Total Laryngectomy Using Low Temperature Radiofrequency Energy: A Case Report - Authors: Jack A. Olmstead, PhD; Bita Naimi, MD; Andrew Vahabzadeh-Hagh, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to describe the risk factors for stomal stenosis following total laryngectomy, differentiate surgical management from minimally invasive office-based techniques, and explain the mechanism, procedural steps, and indications for using low

temperature radiofrequency energy in stomaplasty.

Objectives: Stomal stenosis is a known complication of total laryngectomy. This risk is higher if previously radiated, or with free-flap reconstruction, as this can cause contracture stenosis or tissue redundancy, respectively. Traditionally, surgical management of stomal stenosis requires operative stomaplasty under general anesthesia. This case report describes a novel non-invasive technique for stomaplasty with in-office radiofrequency (RF) energy. Study Design: A 55-year-old man with history of CML and thyroid myeloid sarcoma with laryngeal extension treated with immunotherapy and radiation with recurrence and clinical progression underwent salvage total laryngectomy with anterolateral thigh free-flap reconstruction. Over the first year postoperatively, he developed progressive narrowing of the laryngectomy stoma and exertional dyspnea from encroachment of bulky flap tissue. The patient desired to avoid surgical intervention, therefore in-office intervention with radiofrequency energy was performed. Methods: After application of topical and local anesthesia, the Vivaer radiofrequency tool and ultrasound gel were applied to the superior aspect of the stoma. RF was applied serially in two rows along the superior aspect of the stoma. Bacitracin ointment was applied to the stoma. Results: Office-based RF of flap-tissue bulk successfully reduced redundant tissue and provided improvement in breathing symptoms. The procedure was well tolerated, and the stoma remained patent throughout follow up. There was some mild crusting along the stoma which resolved by 3 months post intervention. Conclusions: This is the first described use of RF energy for management of laryngectomy stomal stenosis. This minimally invasive technique provided symptomatic and visual improvement without significant complications.

TRIO108. Long-Term Use of Psychiatric Medications and Risk of Laryngeal Disorders - Authors: Sara A. Schuster, BA MS; Robert E. Africa, MD; David Bracken, MD; Nausheen Jamal, MD MBA

Educational Objective: At the conclusion of this presentation, the participants should be able to describe the relationship between long-term psychiatric medication usage and the varying risks of developing laryngeal disorders.

Objectives: To evaluate the relationship between long-term psychiatric medication use and voice related laryngeal disorders. Study Design: Multicenter, retrospective cohort study in the United States. Methods: The TriNetX database was used to identify adult patients with or without a long-term history of selective serotonin reuptake inhibitors (SSRIs), serotonin-norepinephrine reuptake inhibitors (SNRIs), benzodiazepines, or antipsychotics (APs) usage. Outcomes evaluated included dysphonia, aphonia, paralysis of vocal cords, and polyps on the vocal cords. The relative risk (RR) with 95% confidence intervals (95% CI) were evaluated for each outcome. Propensity score matching was used to control for covariates including age, ethnicity, and metabolic comorbidities. Results: Long-term use of SSRIs, benzodiazepines, or APs was associated with an increased risk for aphonia (RR 1.581 [1.407, 1.791]), (RR 3.228, [2.886, 3.699]), (RR 2.617 [2.162, 3.242]). Long-term use of SSRIs, benzodiazepines, or APs was associated with an increased risk for paralysis of the vocal cords (RR 1.191 [1.129, 1.272]), (RR 1.566 [1.504, 1.692]), (RR 1.7 [1.58, 1.928]), while use of SNRIs was associated with less risk of paralysis of the vocal cords and larynx (RR 0.421 [0.368, 0.464]). Long-term usage of benzodiazepines or APs was associated with higher rates of dysphonia (RR 1.055 [1.034, 1.1]), (RR 1.056 [1.009, 1.13]), while long-term usage of SSRIs or SNRIs were found to have a decreased risk of dysphonia (RR 0.908 [0.864, 0.918]), (RR 0.325 [0.271, 0.306]). All exposure cohorts, long-term use of SSRIs, SNRIs, benzodiazepines, or APs, were associated with a reduced risk of developing polyps of the vocal cord (RR 0.658[0.595, 0.718]), (RR 0.25[0.202, 0.301]), (RR 0.771[0.701, 0.84]), and (RR 0.817 [0.693, 0.958]) respectively. Conclusions: This study outlines the relationship between long-term psychiatric medication usage and the varying risks of developing voice related laryngeal disorders. These observations emphasize the necessity for further mechanistic research to improve patient-reported outcomes in these populations.

TRIO109. Bridging Data Usability and Interpretable Results: A Novel Interactive Dashboard to Explore the Bridge2AI Voice Dataset for Clinicians and AI Researchers - Authors: Shrramana Ganesh Sudhakar, MS; Jamie Toghranegar, SLPD; Mohamed Ebraheem, MSc; Kirollos Armosh, BS; Helena Beltran, BS; Yael E. Bensoussan, MD

Educational Objective: This project shows how an interactive dashboard can help users (including clinicians and engineers) explore a large multimodal dataset without the need for programming skills to investigate it. A lot of these datasets can be hindered by their complexity and limited clinician trust. As proof of concept, this dashboard uses the Bridge2AI-Voice dataset to provide clear visual summaries of key dataset characteristics, including demographics, audio features, and sample distributions, offering users an intuitive understanding of the data. This approach allows general users, clinicians and researchers to efficiently explore the dataset by asking clinical questions relevant to their patients.

Objectives: To develop an interactive platform that gives insight and facilitates easy exploration of large multi-modal datasets like the Bridge2AI-Voice dataset without the need for coding. This allows general users, clinicians and researchers to efficiently explore the dataset by asking clinical questions relevant to their patients. Study Design: A web-based dashboard combining interactive data visualization and summary statistics was designed to offer a clear overview of the dataset based on clinical questions inputted by the user. Methods: Built with Streamlit and Plotly, the dashboard offers interactive visualization to explore dataset patterns and distributions. Audio files are preprocessed using Python libraries, and features are extracted via Parselmouth-Praat, making the data accessible, reliable, and ready for inference. Results: Users can explore large datasets and view summarized insights without audio preprocessing or coding. By analyzing the available features, users gain a deeper understanding of the acoustic implications associated with certain clinical disorders, supporting further research and clinical interpretations. Conclusions: We present the first interactive dashboard to interrogate large voice datasets using the Bridge2AI-Voice dataset as a proof of concept. Future work will add AI-driven capabilities to make data exploration more flexible, intuitive, and insightful.

TRIO110. Comparative Utility of the Risk Analysis Index and Modified Frailty Index-5 in Predicting Outcomes Following Uvulopalatopharyngoplasty - Authors: Akshay K. Warrier, BA; Rushikesh Pande, BA; Kenneth Yan, MD PhD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the comparative predictive performance of the Risk Analysis Index (RAI) versus the Modified Frailty Index (mFI-5) in uvulopalatopharyngoplasty risk stratification.

Objectives: To compare the predictive capacity of RAI and mFI-5 in stratifying postoperative risk in UPPP patients. Study Design: Retrospective cohort study. Methods: UPPP patients were identified from ACS-NSQIP (2005 - 2020). Frailty was assessed using both the RAI and mFI-5. Univariate and multivariable logistic regression models were generated, and receiver operating characteristic (ROC) curves were constructed to assess discrimination. Results: A total of 2,129 patients were included (mean age 46.4 years; 24.9% female; 61.5% White). RAI was significantly associated with all outcomes assessed: CD II (OR 21.3, CI 3.7 - 123.8), CD IV (OR 4.6, CI 2.0 - 10.6), eLOS (OR 29.4, CI 5.4 - 160.6), NHD (OR 6.1, CI 3.0 - 12.6), and DSSI (OR 17.5, CI 1.7 - 176.3) (all $p<0.05$). mFI-5 predicted CD II, eLOS, and NHD, but not CD IV or DSSI. RAI consistently outperformed mFI-5 in ROC analysis across all outcomes, including mortality (RAI: 0.813 vs. mFI: 0.580), CD II (0.784 vs. 0.652), CD IV (0.704 vs. 0.654), eLOS (0.767 vs. 0.669), and NHD (0.767 vs. 0.618). Conclusions: While both RAI and mFI-5 predict complications following UPPP, RAI demonstrates superior discrimination across mortality and key morbidity metrics. These findings support broader use of RAI for preoperative frailty screening in complex head and neck procedures.

TRIO111. Prevention of Anterior Glottic Stenosis with Transoral Surgery and Photodynamic Therapy in Bilateral Vocal Fold Lesions Involving the Anterior Commissure - Authors: Chi Zhang, PhD; Jingting Zhong, MA; Gelin Li, PhD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the advantages of photodynamic therapy in treating vocal fold lesions, such as voice preservation, fast wound healing and definite therapeutic effects when combined with transoral surgery.

Objectives: The removal of bilateral vocal fold lesions involving the anterior commissure often leads to anterior glottic stenosis. This study aims to evaluate the efficacy of combining surgery with photodynamic therapy (PDT) in treating such lesions and its role in preventing anterior glottic stenosis. Study Design: A retrospective clinical study. Methods: Fifteen cases of vocal fold dysplasia, carcinoma in situ or T1-T2 squamous cell carcinoma were analyzed. Depending on the severity of bilateral lesions, surgical resection and PDT were performed separately. The study analyzed the postoperative outcome, stenosis range and voice quality. Results: The average age was 61.7 +/= 6.0 years, with a mean follow-up period of 15.8 +/= 12.5 months. On PDT sides, 14 cases (93.3%) achieved complete remission (CR) after the first treatment. One case achieved CR after another in office PDT in a month later. During follow-up, one case recurred on the surgical side and was then treated with in office PDT. Another case, diagnosed as papilloma with malignant transformation, recurred on both sides. This case was then treated with surgery and PDT. The lesions involved 61.8 +/= 16.1% of the vocal folds in length on the PDT sides and 95.8 +/= 6.18% on the surgery sides. Postoperative stenosis area averaged 4.61 +/= 5.87%. Under stroboscopic laryngoscopy, 13 cases showed normal mucosal waves and 2 showed slightly reduced waves on the PDT sides. VHI-10 scores, MPT, Jitter, shimmer and HNR were all improved. Conclusions: Transoral surgery combined with PDT can effectively treat bilateral vocal fold lesions involving the anterior commissure, prevent anterior glottic stenosis, and preserve voice quality.

OTOLOGY/NEUROTOLOGY

TRIO112. Transcanal Sound Recording as a Diagnostic Tool for Pulsatile Tinnitus: A Systematic Review - Authors: Arash Abiri, PhD; Peyton L. Nisson, MD; Mia E. Miller, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the diagnostic accuracy of transcanal sound recording (TSR) for detecting vascular causes of pulsatile tinnitus.

Objectives: To evaluate the diagnostic performance of transcanal sound recording (TSR) in detecting vascular anomalies in subjective pulsatile tinnitus (PT). Study Design: Systematic review. Methods: A systematic search of PubMed, Scopus, and Cochrane databases identified 1,936 studies on PT. After abstract screening, full-text review was conducted to identify studies using TSR to evaluate PT. Primary outcomes were sensitivity, specificity, and accuracy of TSR in detecting vascular anomalies in subjective PT. Risk of bias was assessed using the Quality Assessment of Diagnostic Accuracy Studies-2 (QUADAS-2) tool. Results: Five studies involving 265 PT patients were included for analysis. Study designs ranged from early proof-of-concept case series with controls to prospective diagnostic accuracy studies using digital subtraction angiography as the gold standard. Across studies, TSR demonstrated variable diagnostic performance. The average pooled sensitivity was 61.7%, specificity 80.9%, and diagnostic accuracy 70.9%. Smaller pilot studies consistently reported 100% sensitivity in detecting PT with underlying vascular etiology compared with controls, while larger cohorts demonstrated lower sensitivity but more clinically relevant performance estimates. Conclusions: TSR provides an objective, noninvasive tool for evaluating PT and may reduce unnecessary invasive angiographic procedures. While early studies show promise, diagnostic performance remains inconsistent and smaller studies carry risk of bias. Objective assessment of PT, whether through TSR or auscultation, increases the likelihood of detecting an underlying vascular etiology, highlighting the importance of incorporating meticulous physical exam into routine

diagnostic workup. Larger, standardized prospective studies are needed to validate TSR as a reliable adjunct in the evaluation of PT.

TRIO113. Efficacy of Endolymphatic Sac Drainage versus Gentamicin Intratympanic Injection for Permanent Vertigo Control in Meniere's Disease - Authors: Karson M. Ballard, BS; Christopher Stewart, BA; Elijah Elliott, DO; Randall Hansen, DO; Kent McIntire, DO

Educational Objective: At the conclusion of this presentation, the participants should be able to compare the long-term efficacy of endolymphatic sac drainage with intratympanic gentamicin injection in controlling vertigo associated with Meniere's disease.

Objectives: Compare endolymphatic sac drainage and intratympanic gentamicin injection efficacy on Meniere's disease associated vertigo. Study Design: Meta-analysis comparing endolymphic sac drainage and intratympanic gentamicin injection Meniere's disease interventions using pooled proportions. Methods: Six clinical trials assessing endolymphatic sac drainage (ESDS) and intratympanic gentamicin injection treatments for vertigo secondary to Meniere's disease (MD) were identified using the PubMed database. Inclusion criteria included studies that performed one of the two aforementioned interventions and reported outcomes at 24 months post-procedure. Success proportions for each technique were logit-transformed and pooled using a random effects model. Estimates were expressed as an odds ratio with a 95% confidence interval. Results: Our meta-analysis (n=453 participants, 210 males, 243 females) suggests that ESDS may be slightly more effective at controlling vertigo symptoms than intratympanic gentamicin, although the results were not statistically significant (OR=1.112, CI95%=.98-1.26, P-value = 0.09) at 24 months post-treatment. The pooled success rate was ESDS (294, 87.1%) and intratympanic gentamicin (87, 75.3%). Side effect profiles for both treatments were also analyzed to help guide treatment recommendations. Conclusions: No statistically significant difference in 24 month vertigo control was observed between ESDS and intratympanic gentamicin injection for Meniere's disease. Both interventions demonstrate comparable long-term efficacy, suggesting that treatment selection can be individualized based on considerations such as hearing preservation, procedural invasiveness, side effect profiles, and patient preference. These findings support a patient centered approach when choosing between surgical and chemical ablation therapies for vertigo management in Meniere's disease.

TRIO114. Statewide Patterns and Outcomes of Necrotizing Otitis Externa: Comparing Diabetic and Nondiabetic Hospitalizations - Authors: Jeffrey L. Black, MBA; Taylor J. Van Wagenen, BS; Joehassin Cordero, MD FACS; John Garza, PhD

Educational Objective: At the conclusion of this presentation, the participants should be able to describe statewide patterns of care and outcomes in necrotizing (malignant) otitis externa (NOE) and compare ICU use and resource utilization by diabetes status.

Objectives: Summarize demographics, comorbidities, interventions, and short-term outcomes in hospitalized NOE and compare diabetic vs nondiabetic profiles. Study Design: Retrospective, population-based cohort study. Methods: We identified statewide acute-care hospitalizations with NOE (ICD-10-CM H60.2X) during 2016 - 2024. After excluding ineligible facilities and admissions, the cohort included 1,481 hospitalizations across 210 hospitals. Primary outcomes were ICU utilization, length of stay (LOS), discharge disposition, and in-hospital mortality. Secondary descriptors included central venous access, mastoidectomy, hyperbaric oxygen therapy, and invasive ventilation. Groups differences were assessed using Fisher's exact test and the t test. Results: Patients were 52.9% male; 39.8% were older than 65 years. ICU care occurred in 22.8%; in-hospital mortality 1.4%. Comorbidities were frequent: diabetes type 2 61.0%, hypertension 37.8%, chronic kidney disease 30.6%. Procedures included central venous access 16.0% and mastoidectomy 1.1%; Compared with no diabetes, patients with diabetes were older and showed greater resource use: ICU 25.0% vs 18.9% (p = 0.008),

central line 18.8% vs 11.0% (p = 0.0001), temporal bone resection 5.9% vs 3.4% (p = 0.046); LOS was longer (7.4 vs 6.4 days; p = 0.083). Mortality was similar (1.4% vs 1.3%). Conclusions: In a statewide cohort, NOE predominantly affected older adults and individuals with type 2 diabetes. ICU care was common, while in-hospital mortality remaining low. Diabetes was associated with higher ICU utilization and procedure rates, informing triage and counseling for NOE.

TRIO115. Prevalence of Hearing Loss and Hearing Care Utilization Among Hispanic Adults in the United States - Authors: Pedro S. Bonilla, MSc; Zachary Thompson, BS; Janet Choi, MD MPH

Educational Objective: By the end of this session, participants will understand how hearing loss and hearing health care utilization among Hispanic adults in the United States compare with other racial and ethnic groups and recognize the demographic and cultural factors that influence these patterns.

Objectives: To estimate the prevalence of hearing loss and hearing health care utilization among Hispanic adults in the United States and identify associated demographic and cultural factors. Study Design: Cross-sectional. Methods: Adults aged >/=20 years who completed audiometric testing and hearing-related questionnaires in the National Health and Nutrition Examination Survey 2005 - 2018 were included (n=16,855; 4,522 Hispanic participants). Hearing loss was defined as a speech-frequency pure-tone average >/=25 dB HL in the better-hearing ear. Recent hearing testing was defined as self-report of a test within the past 4 years, and ever hearing aid use was based on self-report. Survey weights were applied to generate nationally representative estimates. Multivariable logistic regression models compared hearing loss and hearing health care utilization across racial/ethnic groups and examined factors associated with hearing loss among Hispanic adults. Results: The prevalence of hearing loss among Hispanic adults was 10.45% (95%CI, 9.56-11.88), similar to Whites (OR:0.82, 95%CI 0.60-1.12) and Asians (OR:0.81, 95%CI 0.58-1.12), but higher than Blacks (OR:1.96, 95%CI 1.42-2.71). Among Hispanic adults with hearing loss, 27.6% (95%CI 22.5-33.5) reported a recent hearing test, and 13.0% (95%CI 9.8-16.9) reported hearing aid use, with no significant differences across racial/ethnic groups. Within Hispanics, hearing loss was more common among English-only speakers compared to non-English only speakers interestingly (OR:1.84, 95%CI 1.17-2.89), but hearing aid use was not associated with language or citizenship status. Conclusions: Hearing loss and hearing care utilization among Hispanic adults were comparable to other groups. Given persistently low hearing aid use across populations, improving access will require reducing systemic barriers while promoting culturally tailored hearing health initiatives.

TRIO116. Spatial Navigation in Vestibular Migraine - Authors: Alexandra T. Bourdillon, MD; Jeffrey D. Sharon, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to examine if self-reported spatial navigation is impaired in VM.

Objectives: To examine differences in self-reported spatial navigation ability in individuals with vestibular migraine (VM) versus healthy controls. Study Design: Prospective Cohort Study. Methods: Subjects with a history of VM per Barany society criteria were recruited, as well as healthy controls with no history of migraine or dizziness. Participants completed the Santa Barbara Sense of Direction (SBSOD) questionnaire, Navigational Strategy Questionnaire (NSQ), and Cognitive Failures Questionnaire (CFQ). Between-group differences were analyzed using t-tests and chi-squared tests. Associations between CFQ and spatial skills were also assessed. Results: 24 individuals with VM and 31 controls were included. They did not exhibit any significant differences in age (p=0.07), race(p=0.65), or education (p=0.99). VM participants reported a worse sense of direction (SBSOD: 4.1+/=1.4 vs. 4.5 +/=1.3), though not statistically significant (p=0.28). Across both SBSOD and NSQ, no individual items significantly differed between study arms. However, fewer VM participants agreed (ratings 1-3) with having a “very good sense of direction” (50.0% vs. 67.7% controls), a difference that was not statistically

significant (p=0.41). VM participants reported disorientation more often (43.5% vs. 16.1% controls), although this difference did not reach statistical significance (p=0.07). Cognitive impairment measured by CFQ was statistically significantly higher among VM participants (39.5+/=17.7 vs 19.4+/=13.9, p<0.01) and correlated with a worse sense of direction (r = -0.332, p=0.01) and disorientation (NSQ, p<0.01). Conclusions: Self-reported spatial navigation ability is not different between healthy controls and those with VM. Self-reported cognitive impairment was worse among those with VM and correlated with navigation ability.

TRIO117. Antineutrophil Cytoplasmic Antibody Associated Vasculitis of the Ear: Case Series and Review of the Literature - Authors: Hye Rhyn Chung, MD; Adam Xiao, MD PhD; Boris Skyar, MD; John W. House, MD; Kevin Peng, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to recognize the manifestations of ANCA-associated vasculitis of the ear and best treatment options.

Objectives: Antineutrophil cytoplasmic antibody (ANCA)-associated vasculitis (AAV) is a heterogenous group of necrotizing vasculitides affecting small sized blood vessels, categorized into three main groups (granulomatosis with polyangiitis (GPA), microscopic polyangiitis (MPA), and eosinophilic granulomatosis with polyangiitis (EGPA)) and serologically characterized by antibodies against myeloperoxidase (MPO) and/or proteinase 3 (PR3). We describe the clinical characteristics and treatment strategies of AAV affecting the ear. Study Design: Case series and literature review. Methods: We present a case series of three patients who were diagnosed with AAV after presenting primarily with otologic symptoms. A review of the literature was performed. Results: All patients were female and average age at diagnosis was 42 years. Patients presented with sensorineural and/or mixed hearing loss and demonstrated findings of serous or suppurative otitis media with thickening of the tympanic membrane and mucosal edema within the middle ear. All patients experienced either previous or concurrent sinusitis with one patient requiring remote sinus surgery. Two patients were MPO-ANCA (p-ANCA) positive but PR3-ANCA (c-ANCA) negative, and one was serologically negative to both MPO and PR3. In the serologically negative patient, tissue analysis following middle ear exploration/mastoidectomy supported the diagnosis of AAV via demonstration of necrotizing granulomatous inflammation in the middle ear. Treatment included systemic steroids, intratympanic steroid injections, and immunosuppression with rituximab. Literature review was performed, revealing combination therapy with glucocorticoids and disease modifying anti-rheumatic drugs (DMARD) have significantly better hearing outcomes compared to steroid monotherapy alone. Conclusions: AAV should be included in the differential diagnosis of adults presenting with refractory middle ear effusion, especially in the presence of middle ear mucosal edema. Early diagnosis is crucial, as delayed treatment is associated with poor hearing outcomes. Clinicopathologic correlation is necessary, as ANCA is negative in up to 10% of GPA and MPA cases and up to 60% of EGPA cases. Histopathologic analysis should be pursued if suspicion remains high. Treatment involves immunosuppression with systemic steroids and DMARDs with the goal of hearing preservation.

TRIO118. Silastic Sheeting as an Interposition Prosthesis for Ossiculoplasty - Authors: Karen K. Hoi, MD; Vianca Angelica R. Mendoza, BS (Presenter); Rodney Diaz, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to: consider the potential advantages of Silastic sheeting for use as an interposition prosthesis; evaluate the hearing outcomes of Silastic sheeting as an ossiculoplasty material; understand the clinical decision-making framework for prosthesis material selection in ossiculoplasty.

Objectives: Silicone elastomer sheeting (Silastic) is traditionally used in chronic ear disease to minimize adhesions, maintain aeration, and stabilize ossicular prostheses, however, its use as a primary ossiculoplasty material, either independently or with another implant as a compound ossiculoplasty, has not been previously

investigated. This study evaluates hearing outcomes and extrusion rates of Silastic when used as a primary material for ossiculoplasty compared to non-Silastic materials. Study Design: Retrospective cohort. Methods: Post-operative air-bone gaps (ABG) between 500-4000 Hz were compared between Silastic and non-Silastic (simple or compound, partial or total) ossiculoplasties performed at a tertiary academic center between 2010-2024. Extrusion rates were analyzed in patients with a minimum follow-up of 12 months. Mann-Whitney U and Fisher's exact tests compared outcomes. Regression assessed effects of age and cholesteatoma diagnosis. Results: Of 231 patients, 30.3% underwent ossiculoplasty with Silastic. Mean ABG for final-look reconstructions was 23.0 +/- 9.7 dB for Silastic vs 24.9 +/- 11.8dB for non-Silastic (p=0.31). Among compound reconstructions, mean ABG was 24.6 +/- 8.9 dB (Silastic) vs 23.2 +/- 10.4 dB (non-Silastic) for Austin-Kartush class A/C (stapes+) reconstructions (p=0.20), and 17.9 +/- 11.2 dB (Silastic) vs 28.2 +/- 13.7 dB (non-Silastic) for Austin-Kartush class B/D (stapes-) reconstructions (p=0.03). On multivariable regression for stapes-absent reconstructions, cholesteatoma was independently associated with an 8.5 dB ABG improvement (p = 0.03). Extrusion occurred in 8.5% of Silastic and 2.7% of non-Silastic cases (p=0.21). Conclusions: Silastic and non-Silastic ossiculoplasty yield comparable hearing and extrusion outcomes. While Silastic was associated with smaller ABG in stapes absent reconstructions, this effect was not independent of cholesteatoma diagnosis, which was the primary predictor of better hearing outcomes. Disease etiology should therefore drive material selection. In patients with cholesteatoma as the primary pathology for conductive or mixed hearing loss, Silastic offers dual benefit of favorable hearing outcomes and the ability to actively monitor for disease recidivism within the middle ear cleft following reconstruction.

TRIO119. Trends in Gender Representation and Academic Metrics Among Fellowship Trained Neurotologists
- Authors: Ashwin Jhawer, BS; Samantha Little, BS; Caroline S. Daniels, BS; Taylor J. Stack, MD; A. Morgan Selleck, MD; Nicholas J. Thompson, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to describe and understand the trends and disparities in gender representation and academic metrics among graduated neurotology fellows. They will also be able to understand the need for intervention in order to further promote gender equity in the field of neurotology.

Objectives: To characterize the trends in gender representation, practice patterns, academic rank, and academic productivity of graduated neurotology fellows. Study Design: A cross-sectional analysis of graduates from accredited neurotology fellowships was performed using publicly available data. Methods: Fischer's exact, Pearson's chi squared, Wilcoxon rank sum, and η2 tests were performed for statistical analysis. Variables analyzed included gender, fellowship graduation year, career stage, h-index, academic rank, and practice setting. Results: Of 354 neurotologists, 69 were women and 285 were men. Academic rank differed by gender, with women more often assistant professors (55.8% vs. 39.4%) and less often full professors (9.3% vs. 27.5%; p=0.032). H index was lower among women (9 [IQR: 6-13]) compared to men (12 [IQR: 7-18]; p=0.007), a trend that persisted when stratifying within academics (10 vs. 17; p=0.001). The number of fellowship positions increased over time (η^2=0.76), and the proportion of women entering the field increased since 1990 (η^2=0.31). However, this proportion has stagnated in recent years (η^2=0.03). Overall, 57.1% of neurotologists graduated from a residency program with a neurotology fellowship, and 28.7% trained at their home institution for fellowship. Conclusions: Although the number of fellowship positions has increased and the landscape of neurotology has changed, notable gender disparities remain in the field. Differences in academic productivity could be attributed to fewer years in practice and academic rank disparity. Regardless, the plateau of women representation continues to highlight the need for interventions to promote gender equity.

TRIO120. Vestibular Neuronal Spheroid Conditioned Medium (VNS-CM) Primes Blood Labyrinthine Barrier-Like Endothelial Phenotypes: Preliminary Proteomic, Immunocytochemical, and Functional Readouts - Authors: Hyunmin Lee, MD PhD; Kiersten R. Russ, BS; Jae Joon Kim, BS; Winston Loh; Akihiro J. Matsuoka, MD PhD

Educational Objective: At the conclusion of this presentation, the participants should be able to recognize how human iPSC derived vestibular neuronal spheroid conditioned medium (VNS-CM) provides inner ear specific paracrine signals that promote blood labyrinthine barrier (BLB)-like endothelial maturation; identify the key proteomic components and tight junction markers (particularly claudin-4 and claudin-11) that distinguish BLB-like endothelial phenotypes from blood brain barrier controls; understand the potential applications of VNS-CM as a human specific platform for modeling the blood labyrinthine barrier and developing inner ear therapeutic strategies.

Objectives: Determine whether human hiPSC derived vestibular neuronal spheroid conditioned medium (VNS-CM) provides inner ear specific cues that promote blood labyrinthine barrier (BLB)-like maturation of microvascular endothelial cells (MECs), a barrier that restricts blood borne entry into inner ear tissues. Study Design: Experimental laboratory study using VNS-CM as the sole conditioning input during MEC differentiation, with blood brain barrier (BBB) directed conditions as comparators. Methods: Mature hiPSC derived vestibular neuronal spheroids were used to generate VNS-CM (14 days). The medium was profiled by tandem mass tag based liquid chromatography tandem mass spectrometry (LC-MS/MS). MECs were differentiated in VNS-CM versus BBB directed controls. Immunocytochemistry (ICC) assessed endothelial (CD31, CD144) and tight junction markers (claudin-1/3/4/11) with fluorescence quantification across biological replicates (one way ANOVA). Results: TMT-LC-MS/MS of D14 VNS-CM identified an inner ear relevant secretome including NCAM (normalized abundance 1.50), fibronectin (1.35), BDNF (1.20), VEGF (1.12), NT-3 (1.10), GDNF (0.95), CNTF (0.85), laminin (0.80), collagen IV (0.70), Sonic Hedgehog (0.50), and Wnt1 (0.45). VNS-CM treated MECs expressed CD31/CD144 and claudin-3/4 at day 14; by day 21, claudin-1 and claudin-11 localized robustly. Quantitative analysis revealed significantly higher claudin-4 and claudin-11 expression compared with BBB directed controls (n = 3; ANOVA with Tukey correction). Conclusions: Focusing on the conditioning milieu, hiPSC derived VNS-CM supplies defined paracrine signals that (i) are corroborated by proteomics, (ii) shift junctional profiles toward BLB relevant signatures by ICC. These data support VNS-CM as a human, inner ear specific driver for BLB-like endothelial maturation and provide a basis for subsequent assembloid studies and therapeutic testing.

TRIO121. Rare Variation in Candidate Genes Among Meniere's Disease Participants in the All of Us Research Program - Authors: Audrey P. Lawrence, BS; Christopher Z. Wen, MD; Daniel C. Fong, BS; Ella Walchko, BS; Adam C. Kaufman, MD PhD

Educational Objective: At the conclusion of this presentation, the participants should be able to describe how a national biobank can be leveraged to identify and quantify rare variant burden in candidate genes for Meniere's disease.

Objectives: Estimate the prevalence of rare ClinVar annotated variants in candidate genes among individuals with Meniere's disease. Study Design: Retrospective cohort study using the All of Us research program. Methods: All of Us participants with a diagnosis of Meniere's disease (ICD-10-CM H81.0, SNOMED CT 13445001) and whole genome sequencing were included (n = 1,522). Variant level analyses were performed in Hail (GRCh38) within the All of Us Researcher Workbench. We interrogated 22 literature derived plausible genes (AQP4, AQP1, AVPR2, AVP, CFTR, NOS3, VEGFA, EDN1, EDNRA, ATP1A2, SLC1A3, CACNA1A, IL1B, IL6, TNF, NFKB1, STAT3, C3, C4A, C4B, HLA-DQA1, HLA-DRB1). "Rare" was defined as allele frequency </= 0.1% (0.001). Variants were grouped as ClinVar pathogenic/likely pathogenic (P/LP) or variants of uncertain significance (VUS). The primary outcome was per person carrier status (>/= 1 qualifying variant). Results: Rare variants were identified

within our study cohort at varying levels from a healthy population. Among 1,522 patients with Meniere's disease and genomic testing, 53 (3.5%) patients had a P/LP variant with allele frequency <0.001 within our genes of interest, and 286 (18.8%) patients had a VUS with allele frequency <0.001 within these genes. Conclusions: In a large, national cohort with linked genomes and EHRs, ~1 in 29 Meniere's disease participants carried a rare P/LP variant across 22 candidate genes. These data demonstrate the feasibility of using All of Us to quantify rare variant burden in Meniere's disease and to prioritize loci for followup. Future work will compare carrier rates with population matched controls and evaluate variant pathogenicity using review status and predicted consequences.

TRIO122. Finite Element Guided Microfluidic Control of Retinoic Acid Gradients for Vestibular Neuron Differentiation of hiPSCs - Authors: Hudson Liu, BS; Kiersten R. Russ, BS; Jae J. Kim, BS; Winston Loh, HS; Akihiro Matsuoka, MD PhD

Educational Objective: At the conclusion of this presentation the participants should understand how finite element modeling and microfluidic gradient design can create physiologically relevant retinoic acid (RA) profiles that guide hiPSC differentiation into peripheral vestibular neurons.

Objectives: Understand how finite element modeling and microfluidic gradient design can create physiologically relevant retinoic acid (RA) profiles that guide hiPSC differentiation into peripheral vestibular neurons (vestibular ganglion-like). Study Design: Using computational modeling, a PDMS-based microfluidic device was fabricated to establish and validate physiologic retinoic acid gradients for hiPSC differentiation towards vestibular neuron lineages. Methods: A two-inlet microfluidic gradient generator was designed that feeds a passive mixing network and distributes flow into five parallel culture chambers. Finite element modeling (FEM) was performed in ANSYS Fluent to simulate RA diffusion and establish steady state concentration gradients across culture chambers. Simulated concentration profiles guided the fabrication of a PDMS-based device, allowing 3D culture of hiPSCs exposed to distinct RA concentrations. Differentiation readouts will include fluorescence imaging, flow cytometry, quantitative PCR, and immunostaining for otic neurogenic and vestibular neuron lineage markers. Results: Finite element analysis in ANSYS Fluent predicted RA gradients spanning the physiologic concentration range across all culture chambers and shear stress suitable for hiPSC culture. The gradient generator design achieved steady state RA distributions within minutes of flow initiation, and concentration profiles were consistent with expected exponential decay along the mixing network. Next steps involve experimental verification of gradient profiles and culture. Conclusions: Microfluidic RA gradients can reproducibly create spatially distinct otic neurogenic environments for hiPSCs, and finite element guided RA tuning enables selective differentiation toward vestibular neuron like lineages. This platform establishes a framework for modeling human inner ear peripheral neurogenesis and for optimizing differentiation protocols aimed at region and lineage specific vestibular neurons.

TRIO123. Physiologically Scaled Microfluidic Model for Studying Directed Neurite Growth in a Biohybrid Cochlear Implant - Authors: Hudson Liu, BS; Kiersten R. Russ, BS; Jae J. Kim, BS; Winston Loh, HS; Akihiro J. Matsuoka, MD PhD

Educational Objective: At the conclusion of this presentation participants should be able to understand the utility of physiologically scaled microfluidic systems in modeling neural regeneration and directed neurite growth within the scala tympani of the cochlea.

Objectives: Test the hypothesis that co-culture of hiPSC-derived otic neuronal progenitor (ONP) and spiral ganglion neurons (SGN) allows for migration towards a higher brain-derived neurotrophic factor (BDNF) gradient for applications to biohybrid cochlear implants. Specifically, we sought to (1) differentiate hiPSCs into SGN, (2) develop a microfluidic co-culture platform that recreates the scala tympani modiolus interface, and (3) evalu-

ate directional neurite extension under applied BDNF gradients. Study Design: A microfluidic device was designed containing dual culture chambers representing endogenous SGN and implanted ONP populations connected by 800-µm microchannels that approximate the osseous spiral lamina. Differentiation protocols were developed to generate SGNs from hiPSCs. Methods: A microfluidic device was designed using computer-aided design (CAD) Autodesk Fusion software and fabricated from polydimethylsiloxane (PDMS) from a CNC-milled mold in accordance with previously established cochlear anatomy lengths. hiPSCs were differentiated into ONP and SGN for co-culture in opposite compartments. A controlled neurotrophic gradient was applied and neurite extension between the compartments was assessed. Results: The fabricated microfluidic platform successfully reproduced key geometric features of the cochlear scala tympani modiolus interface, including interchamber distances and canaliculi perforantes. The device supports the co-culture of hiPSC-derived ONPs and SGNs, confirming compatibility with physiological scales within a future biohybrid cochlear implant. Conclusions: This work establishes a physiologically relevant microfluidic system capable of modeling spatial organization at the cochlear interface, providing a foundation for future studies of SGN-ONP neurite guidance and integration toward biohybrid cochlear implants.

TRIO124. Frequency Specific ABG Closure after Revision Stapedotomy: Impact of Intraoperative Mechanisms - Authors: Sudhir Manickavel, MD; Samantha Cerasiello, MD; Michael Castle, MD; Hossein Mahboubi, MD MPH; William H. Slattery, MD; Kevin A. Peng, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to: interpret frequency specific ABG closure after revision stapedotomy; recognize how intraoperative failure mechanisms map to frequency patterns; apply these insights to counsel patients and tailor revision strategies.

Objectives: To quantify frequency-specific air-bone gap (ABG) closure after revision stapedotomy and assess whether intraoperative mechanisms show distinct frequency patterns and independently predict closure. Study Design: Retrospective review of patients operated between 2020 - 2024. Methods: We analyzed 37 patients, meeting inclusion criteria, who underwent transcranial laser assisted revision stapedotomy with Eclipse prosthesis placement and had pre-operative and 3-month postoperative audiograms. Primary endpoint was ABG closure </=10 dB by frequency (individual frequencies from 0.5 to 4 kHz) and four-frequency pure tone average (PTA) (0.5 - 3 kHz). Intraoperative mechanisms were profiled by frequency. Generalized estimating equations modeled closure odds by frequency and mechanism with clustering by case. Results: PTA ABG closure </=10 dB occurred in 64.9% (24/37) and </=
20 dB in 91.9% (34/37). Closure was greatest at 1 - 2 kHz and weakest at 4 kHz. Mechanism-by-frequency interactions were not significant overall after adjustment. However, at 500 Hz, slipped off incus demonstrated significantly higher residual ABG and smaller closure compared with other identifiable mechanisms. Baseline ABG strongly predicted closure (P<0.001), whereas prosthesis length was not associated with closure after adjustment. Frequency independently predicted closure (4 kHz OR ~0.44; 95% CI ~0.19â€“0.99); findings were consistent across sensitivity analyses. Conclusions: Revision stapedotomy achieved meaningful closure overall, particularly at mid frequencies, while high-frequency closure remained limited. Baseline ABG strongly predicted closure. Mechanism specific patterns showed that slipped off incus was worse at 500 Hz. Frequency independently predicted closure odds.

TRIO125. Contemporary Treatment Patterns in Surgically Treated Temporal Bone Cancer: A National Database Study - Authors: Raquel Rowell, BS; Christopher Z. Wen, MD; Vera Bzhilyanskaya, BS; Jane Y. Tong, MD; Adam C. Kaufman, MD PhD

Educational Objective: At the conclusion of this presentation, the participants should be able to describe the sociodemographics of patients with temporal bone cancer as well as the landscape of treatment modalities

Objectives: Understand the sociodemographic characteristics of patients with temporal bone carcinoma and current practice patterns Study Design: Retrospective cohort study using the Epic Cosmos database Methods: Patients with diagnosis of auricular basal cell carcinoma (ICD-10 C44.21) and squamous cell carcinoma (ICD-10 C44.22) who underwent excision (CPT 69150, 69155) or temporal bone resection (CPT 69535) from 2015 to 2024 were included from a nationally representative database. Data collected included sociodemographic measures, mortality rate, and adjuvant treatment modalities such as radiation therapy, chemotherapy, and immunotherapy. Results: 750 patients were included. Mean age was 70.7 years (SD 11.7) and 613 (81.7%) were male. Most patients were non-Hispanic (715, 95.3%) and White (708, 94.4%), with a minority of Black (15, 2%) and Asian (13, 1.7%) patients. The majority of patients were from the South (308, 41.1%) or Midwest (222, 29.6%), and 74% (n=555) lived in a metropolitan area. Patients tended to live in more vulnerable ZIP codes, ranging from 11.7% in the least vulnerable quintile to 24.4% in the most vulnerable quintile. 55% (n=416) patients underwent temporal bone resection, while the remainder underwent excision. 192 (25.6%) patients received additional radiation, 62 (8.3%) received immunotherapy with a PD-1 or PD-L1 monoclonal antibody, and 30 (4%) received platinum-based chemotherapy. 212 (28.3%) patients were noted to be deceased at the time of this study. There were no differences in odds of being deceased at the time of the study for patients with temporal bone resection, chemotherapy, immunotherapy, but there was for patients undergoing radiation ($p<0.01$; OR 1.68, 95% CI 1.16-2.42). Conclusions: Temporal bone cancer primarily affects older, non-Hispanic White adults, and are more prevalent in the South and Midwest. One-third of patients treated with surgical resection receive an additional treatment modality.

TRIO126. Controlled BDNF Concentration Gradient from PODS Carriers Through Canaliculi Perforantes of Schuknecht Channels - Authors: Kiersten R. Russ, BS; Beatriz O. Nicolau, MS; Huimin Zhu, MS; Jae Joon Kim, BS; Hudson Liu, BS; Akihiro J. Matsuoka, MD PhD

Educational Objective: At the conclusion of this presentation, the participants should be able to: describe the microanatomy of the canaliculi perforantes of Schuknecht and their relevance to cochlear implant design; explain how controlled BDNF release from PODS crystals can be modeled and validated in physiologically scaled microfluidic systems; recognize the potential of sustained release biomaterials for integration into next generation biohybrid cochlear implants.

Objectives: To quantify brain derived neurotrophic factor (BDNF) release kinetics from PODS crystals under controlled microfluidic conditions at a scale physiologically relevant to cochlear anatomy, and to determine whether release rates create BDNF gradients compatible with spiral ganglion neuron (SGN) survival and outgrowth timescales. Study Design: We developed a microfluidic device at physiological dimensions that models the scala tympani modiolus interface, including microchannels mimicking the canaliculi perforantes of Schuknecht, a key anatomical feature for biohybrid cochlear implants. BDNF release in this device was modeled both computationally and experimentally. Methods: A microfluidic device was designed in SolidWorks at a scale physiologically relevant to cochlear anatomy. BDNF release kinetics were first modeled computationally using COMSOL finite element analysis (FEA) to predict concentration gradients and diffusion timescales. The device was then fabricated from polydimethylsiloxane (PDMS) using soft lithography, and experimental validation of BDNF release was performed using GFP labeled PODS crystals as a sustained release source. Results: Finite element analysis predicted sustained BDNF diffusion across the canaliculi channels over approximately one week, maintaining concentrations within the range reported to support SGN survival and neurite outgrowth. Experimental imaging of GFP labeled PODS within the fabricated microfluidic device confirmed gradual dissolution and fluorescence diffusion consistent with modeled release profiles. Conclusions: This study establishes a quantitative framework for neurotrophic release measurements and demonstrates the applicability of sustained release BDNF from PODS crystals within a physiologically relevant scale of cochlear anatomy for applications to future biohybrid cochlear implants.

TRIO127. Pain Correlates with Increased Cognitive Workload in Otologic Surgery - Authors: Miriam R. Smetak, MD; Nedim Durakovic, MD; Matthew A. Shew, MD; Craig A. Buchman, MD; Jacques A. Herzog, MD

Educational Objective: Poor ergonomics and resulting musculoskeletal strain are a common experience for surgeons and can result in high rates of pain and musculoskeletal injury. However, it is not known how this experience of pain affects measures of cognitive workload, fatigue, and performance in otologic surgery.
At the conclusion of this presentation, the participants should be able to understand the high rates of musculoskeletal pain and injury among surgeons and describe the relationship between pain and increased measures of cognitive workload and fatigue.

Objectives: Characterize surgeons' experiences with pain during otologic surgery and explore the correlation of pain with measures of cognitive workload and performance. Study Design: Prospective longitudinal survey study at a tertiary care medical center. Methods: Attendings and residents performing otologic surgery from July through August 2024 were included. Surgeons completed a baseline survey including demographic data and prior experiences with pain and injury upon enrollment. Immediately following each otologic or neurotologic procedure, surgeons completed a pain questionnaire and the NASA Taskload Index (NASA-TLX) as a measure of cognitive workload. Results: Twelve surgeons completed surveys for 206 procedures. Surgeons reported pain in 82 cases (40%), and the pain was new or worsening in 66 of these (80%). When present, pain was reported to at least slightly interfere with operating in 30% of cases (N=27). Overall cognitive workload measured by composite NASA-TLX was 55 points higher in surgeons experiencing pain (95% CI, 21 to 88). Pain correlated with increased physical demand (mean difference 2.8; 95% CI, 1.4 to 4.3), temporal demand (mean difference 1.5; 95% CI, 0.1 to 3.0), effort (mean difference 1.9; 95% CI 0.1 to 3.7), and frustration (mean difference 2.4; 95: CI, 1.3 to 3.4). There was no difference in perceived performance (mean difference 0.9; 95% CI, -0.3 to 2.1) or mental demand (mean difference 1.3; 95% CI, -0.6 to 3.2). Conclusions: Both attendings and trainees experience high rates of pain while performing otologic surgery. Pain correlates with increased cognitive workload, physical demand, effort, perceived time constraints, and frustration.

TRIO128. Inner Ear Morphologic Analysis Through 3D Lightsheet Microscopy in Mice - Authors: Maia Smith, BSA MS; Annika Nambiar, BS MPH; Noor Souman, BS; Marina Saito, DVM PhD; Rebecca Cook, BS; Tomoko Makishima, MD PhD

Educational Objective: At the conclusion of this presentation, the participants should be able to recognize how three dimensional (3D) lightsheet fluorescence microscopy enhances visualization of inner ear anatomy compared to traditional two dimensional (2D) microscopy in mice.

Objectives: To compare 2D whole mount immunostaining and 3D lightsheet fluorescence microscopy of the temporal bone in Casp-3 transgenic mice and identify architectural differences in cochlear and vestibular anatomy, with emphasis on the planar orientation of vestibular organs. Study Design: Basic science research. Methods: Temporal bones from Casp-3 wild type (WT), heterozygous (Het), and knockout (KO) mice were dissected, decalcified, and tissue cleared using the urea based Sca/e S protocol (Hama et al. Nat Neurosci. 18(10):1518-29). Ears were immunostained with markers for hair cells (Myo6, Phalloidin), endothelial cells (CD31), and neuronal cells (NFH) and imaged with either 2D fluorescence or 3D lightsheet microscopy. Results: Whole mount microscopy demonstrated ampullar fusion, misshapen ampullae, and reduced saccular hair cell density in KO mice. Lightsheet microscopy enabled visualization of vestibular spatial relationships, revealing asymmetric left-right utricle-saccule (ΔL-R) angle difference in KO mice (14.0°+/=9.4°) compared to WT (7.96°+/=5.5°, p=0.084). KO mice showed different degrees of inner and outer hair cell loss, while Het and WT genotypes showed normal cochlear hair cell organization. Conclusions: Whole mount imaging provides high cellular resolution, whereas lightsheet microscopy preserves 3D spatial context, enabling quantitative assess-

ment of vestibular orientation. Together, these methods reveal vestibular organ asymmetry in Casp-3 KO mice and highlight the utility of 3D imaging for identifying spatial phenotypes in audiovestibular dysfunction models.

TRIO129. The Risk Analysis Index Outperforms the Modified Frailty Index in Predicting Postoperative Complications in Vestibular Schwannoma Surgery - Authors: Akshay Warrier, BA; Liliya Benchetrit, MD; Ryan Bartholomew, MD; Daniel Lee, MD FACS

Educational Objective: At the conclusion of this presentation, the participants should be able to compare the utility of frailty indices in the assessment of preoperative risk in regard to postoperative outcomes in vestibular schwannoma surgery.

Objectives: To compare the predictive capacity of the Risk Analysis Index (RAI) and modified Frailty Index-5 (mFI-5) for postoperative outcomes in patients undergoing microsurgical resection of vestibular schwannoma. Study Design: Retrospective cohort study using a national surgical registry. Methods: Patients undergoing vestibular schwannoma resection were identified using CPT (61520, 61526/61596 and ICD-9/ICD-10 codes (225.1, D33.3). Frailty was assessed using the RAI-A and mFI-5 indices. Multivariable logistic regression evaluated associations with mortality, complications, prolonged length of stay (eLOS), and non-home discharge (NHD). Predictive performance was assessed using area under the ROC curve (AUC). Results: Among 3,138 patients, increasing RAI was significantly associated with higher odds of 30-day mortality (OR for RAI â‰¥41: 24.5, p=0.002), Clavien-Dindo grade IV complications (OR: 3.7, p=0.016), eLOS (OR: 4.6, p=0.017), and NHD (OR: 16.4, p<0.001). In contrast, mFI-5 demonstrated fewer significant associations and lower AUC values. For mortality, AUC was 0.695 (RAI) vs. 0.618 (mFI-5); for NHD, 0.654 (RAI) vs. 0.649 (mFI-5). mFI-5 remained predictive of NHD (OR: 2.2, p=0.002) and eLOS (OR: 2.6, p=0.004), indicating partial utility. Conclusions: RAI outperformed mFI-5 in predicting mortality, complications, eLOS, and NHD after vestibular schwannoma surgery. While mFI-5 retains limited prognostic value, RAI offers more robust predictive accuracy and should be considered the preferred frailty metric to guide perioperative risk stratification in this high-risk population.

TRIO130. Audiometric Predictors of Hearing Aid Returns in Mild to Moderate Hearing Loss - Authors: Devin E. Williams, BS; Steve Bowditch, AuD; Francis Creighton, MD; John P. Carey, MD; Charles Della Santina, PhD MD; George Liu, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand factors and audiometric characteristics associated with hearing aid returns among individuals with mild to moderate sensorineural hearing loss.

Objectives: To identify factors associated with hearing aid returns for adults with mild to moderate hearing loss trialing conventional amplification. Study Design: Retrospective chart review. Methods: We retrospectively reviewed charts for adults with mild-to-moderate hearing loss (3-tone pure-tone average < 65 dB HL) fitted with Oticon or Resound hearing aids between May 2022 and April 2024. Patients trialing hearing aids for cochlear implant candidacy were excluded. Data was sourced from order/return forms, an audiology database, and electronic health records. We performed multivariable analysis to assess the relationship between hearing aid returns and pure tone thresholds, word recognition score (WRS), age, and gender, using chi-square, t-tests, and machine learning classification. Results: The cohort included 98 subjects, with 54% retaining and 46% returning their hearing aids (p value greater than 0.05). Specific pure tone thresholds within the mild-to-moderate range at multiple frequencies (250 Hz, 500 Hz, 2 kHz, 3 kHz, 4 kHz, and 8 kHz) were significantly associated with hearing aid retention (all p values less than 0.05). Thresholds outside these specific ranges were associated with returns. Higher mean word recognition scores (WRS) were also strongly associated with retention (86% vs. 65%, p value less than 0.05). In contrast, age, gender, and three frequency pure tone averages did not show a significant association with hearing aid return rates (p value greater than 0.05). Conclusions: Specific pure

tone thresholds within the mild-to-moderate range and higher WRS are factors associated with hearing aid retention. These findings provide an initial framework for understanding hearing aid returns at our institution.

PEDIATRIC OTOLARYNGOLOGY

TRIO131. Caregiver Use of Social Media and Artificial Intelligence in Seeking Tracheostomy Care Information - Authors: Ahsan S. Ahmed, BS; Roxanna Mosavian, BA; Amanda H. Shen, MS; Alice Lee, MD; Alanna Windsor, MD; Christina J. Yang, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to describe how caregivers of children living with tracheostomies utilize social media and artificial intelligence tools to obtain tracheostomy care information.

Objectives: The primary objective was to assess how caregivers of children living with tracheostomies use social media and artificial intelligence (AI) platforms to obtain care information. Secondary objectives included assessing caregivers' perceptions of the accuracy, accessibility, and reliability of these online resources. Study Design: A cross-sectional survey collecting responses from caregivers of children living with tracheostomies. Methods: An 18-question electronic survey was distributed to members of the Global Tracheostomy Collaborative (GTC) Parents and Families Committee. Results: 61/200 (30%) individuals completed the survey between May-September 2025. Respondents were parents of children with tracheostomies (34%), non-parent caregivers (25%), and individuals with tracheostomies (23%). Most (64%) had over five years of caregiving experience. 74% were female, and 65% held a bachelor's degree or higher. 53% of caregivers reported using social media to obtain tracheostomy care information: primarily from Facebook (96%), followed by YouTube (63%), Instagram (13%), and TikTok (4%). Respondents perceived Facebook as providing the most accurate information among social media platforms (75% described it as somewhat or very accurate). Furthermore, 96% reported Facebook as somewhat or very easy to understand. However, only 71% of individuals reported consistently verifying information with healthcare providers. 11% of respondents reported using ChatGPT or other AI tools for tracheostomy care information, with 80% describing the AI responses as easy to understand. Conclusions: Caregivers reported frequent use of social media to obtain tracheostomy care information and less frequent use of AI tools. These trends present opportunities to expand the delivery of high-quality tracheostomy care content through platforms like social media and AI tools.

TRIO132. Assessment of Large Language Models for Tympanostomy Patient Education: Clinical Guideline Adherence and Readability Analysis - Authors: Shreeya R. Bahethi, BS; Hetal Lad, BS; Shrey Shah, BA; Sudeepti Vedula, MD; Brian Manzi, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to evaluate how large language models adhere to tympanostomy clinical practice guidelines and assess the readability of AI-generated patient education material.

Objectives: Abiding by evidence-based clinical guidelines is essential for safe and consistent care. In this study, we aim to evaluate how different large language models can generate accurate and patient-appropriate information on tympanostomy treatment. Study Design: Prospective Comparative Observational study. Methods: Over a two-month period, ChatGPT 4o, Gemini 2.5 Flash, and Google Search AI were prompted daily using long-form and layered prompt formats covering typical concerns regarding tympanostomy. Responses were scored on a 12-point rubric adapted from the AAO-HNS Clinical Practice Guidelines (CPG), assessing diagnostic accuracy, procedural clarity, and postoperative care. Readability was evaluated using Flesch Reading Ease and Flesch-Kincaid Grade Level. For each model and prompt type, average scores and variability were analyzed with 95% confidence intervals. Between-model differences were tested with Welch's t-tests and Cohen's d;

temporal trends were analyzed via linear regression. Results: Layered prompts produced significantly higher adherence to tympanostomy CPGs than long-form queries (96.9% vs. 86.2%, p < 0.001). Among long-form outputs, Google Search AI achieved the highest mean adherence (94.2%, 95% CI 91.9 - 96.3), followed by Gemini 2.5 Flash (85.3%, 95% CI 82.6â€“87.9) and ChatGPT 4o (79.2%, 95% CI 77.2 - 81.2). Pairwise comparisons showed Google Search AI scored higher than ChatGPT 4o (+15.0 points, p < 0.001), Google Search AI scored higher than Gemini 2.5 Flash (+8.9 points, p < 0.001), and Gemini 2.5 Flash scored higher than ChatGPT 4o (+6.1 points, p < 0.001). No model demonstrated significant change over time (p greater than 0.05). Readability for both formats averaged at a college level, exceeding recommended patient education levels. Conclusions: Layered prompting significantly improved AI adherence to tympanostomy CPGs. Google Search AI consistently demonstrated the highest guideline concordance, though all models produced material too complex for typical patient comprehension. Structured prompting enhances clinical accuracy, but readability remains a key barrier to accessibility.

TRIO133. Risk of Pediatric Post-Tonsillectomy Bleeding Following Multiple Doses of Ketorolac - Authors: Lena W. Chen, MD; Ananya Tadikonda, BS; William Zhang, BS; Aimee Lee, BS; Matthew P. Partain, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to determine whether administration of multiple postoperative doses of ketorolac increases the risk of post-tonsillectomy hemorrhage in pediatric patients, and to characterize factors associated with ketorolac use and bleeding events.

Objectives: To determine whether administration of multiple postoperative doses of ketorolac increases the risk of post-tonsillectomy hemorrhage in pediatric patients, and identify factors associated with ketorolac use and bleeding events. Study Design: Retrospective case-control study. Methods: Records of patients under 18 years undergoing tonsillectomy or adenotonsillectomy at a tertiary children's hospital from 2016 - 2024 were reviewed. Cases were defined as patients with postoperative hemorrhage; controls were matched 1:4 by surgeon and week of surgery. Demographic, clinical, and surgical data were analyzed using conditional logistic regression. Patients not receiving intraoperative ketorolac or receiving ketorolac only after a bleeding event were excluded. Results: A total of 194 cases and 768 matched controls (total N=962) were analyzed. Sixteen patients (1.7%) received postoperative ketorolac in addition to the standard intraoperative dose. Postoperative ketorolac use was more common among children with Down syndrome (19% vs. 4%, p=0.033) and developmental delay (38% vs. 17%, p=0.048) but was not associated with increased bleeding risk (p=0.34). Independent predictors of hemorrhage included older age (OR 1.06 per year, 95% CI 1.01 - 1.11, p=0.024) and Asian race (OR 2.44, 95% CI 1.14 - 5.20, p=0.021). Conclusions: Administration of multiple doses of ketorolac postoperatively was not associated with increased risk of post-tonsillectomy hemorrhage in children. Use was concentrated in patients with developmental delay, reflecting challenges with oral intake and medication tolerance. Older age and Asian race were independent predictors of bleeding. These findings support the use of postoperative ketorolac for analgesia in appropriately selected pediatric patients.

TRIO134. Assessment of Sleep Architecture in Obese Children with Obstructive Sleep Apnea - Authors: Hanna Gedamu, BSA; Seckin Ulualp, MD MBA; Anna Wani, MD; Claire Chapel, MD; Felicity Lenes-Voit, MD; Ron Mitchell, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand alterations in sleep architecture in obese children with obstructive sleep apnea.

Objectives: To evaluate sleep architecture in obese children with obstructive sleep apnea (OSA) and to determine the impact of OSA on sleep architecture. Study Design: Cross-sectional. Methods: Children referred for

diagnostic polysomnography at a pediatric otolaryngology clinic were included. Demographics, comorbidities, body mass index (BMI) categories (healthy weight, overweight, class I, class II, class III obesity), obstructive apnea hypopnea index (oAHI), and sleep architecture parameters [total sleep time (TST), sleep efficiency, sleep latency, proportion of sleep in non-rapid eye movement (NREM) stages (N1, N2, and N3), rapid eye movement (REM), and wakefulness after sleep onset (WASO)] were collected. Pairwise comparisons with healthy weight children and those without OSA were conducted using multivariable linear regression. Results: Among 582 children who met the inclusion criteria, 81% had OSA, 46% had a healthy weight, and 38% were obese. TST, sleep efficiency, and sleep latency decreased with higher BMI category. WASO% increased with higher BMI category. Compared to healthy weight group, class III obesity was associated with decreased TST (β=.34.42, 95% CI :[-54.42,-14.43], p<0.001), sleep efficiency (β=-4.81,95% CI: [-8.48,-1.14],p=0.010), REM% (β=-3.07, 95% CI :[-4.93,-1.21],p=0.001), and increased WASO% (β=8.64,95% CI: [0.00,17.28],p=0.050). Class II obesity was associated with shorter TST (β=-22.42,95% CI: [-41.76, -3.09], p=0.023). Class I obesity was associated with increased N3% (β= 6.13,95% CI: [2.50,9.76], p<0.001). Sleep architecture parameters were not significantly different between children with and without OSA. Conclusions: Severe obesity was associated with altered sleep architecture, including shorter sleep duration, less sleep efficiency, reduced REM%, and increased WASO in children with OSA. The implications of these findings on neurocognitive functioning, metabolic health, and treatment strategies warrant further study.

TRIO135. Identification of Craniofacial Characteristics of Down Syndrome from the Electronic Health Record Using Large Language Models - Authors: Wiktoria A. Gocal, MD; Nithya Navarathna, BS; Sarah Yang, BS; Katherine Goodman, PhD; Amal Isaiah, MD DPhil MBA

Educational Objective: At the conclusion of this presentation, the participants should be able to understand how to evaluate the performance of an LLM against human review of unstructured clinical notes in the electronic health record.

Objectives: To evaluate the performance of a large language model (LLM) against human review for identifying craniofacial characteristics of children with Down Syndrome (DS). Study Design: This cross-sectional study used unstructured clinical notes in the electronic health record from 119 children with Down Syndrome between 5/1/2016 and 11/28/2024 at 15 hospitals. Methods: The LLM (OpenAI o1-preview) was prompted using an iterative approach to improve accuracy, with subsequent comparison of LLM performance against expert review. Analyses were conducted from August to September 2025. Results: The study included 17,856 clinical notes in the electronic health record for children with DS, of which 100 randomly sampled notes were manually reviewed by an otolaryngology resident for 16 prespecified craniofacial features. The LLM demonstrated overall sensitivity of 70.0%, specificity of 96.3%, positive predictive value of 77.8%, negative predictive value of 94.5%, accuracy of 92.1%, and F1 score of 73.7%. Individual characteristic performance varied, with sensitivity ranging from 55.6%-84.8% and specificity from 90%-99%. Analysis of discrepancies revealed 66 instances of disagreement between LLM and human review, including 24 (36.4%) potential LLM hallucinations, 2 (3.0%) human errors identified by the LLM, and 1 (1.5%) characteristic missed by both reviewers. Human review required a mean time of 99 seconds per note compared to 12 seconds for LLM review, representing an 8-fold reduction in review time. Conclusions: The LLM demonstrated acceptable specificity and accuracy for identifying DS-related craniofacial characteristics from clinical notes while being 8 times faster than human review.

TRIO136. Influence of Preferred Language on Postoperative Revisits Following Pediatric Tonsillectomy - Authors: Chloe M. Jones, BS; Donald Solomon, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to describe the relationship between race, preferred language, and postoperative revisit rates following pediatric tonsillectomy, and identify possible strategies to improve communication of postoperative instructions and decrease

preventable revisits.

Objectives: Unplanned revisit rates following tonsillectomy range from 6.3 to 8.1%. Both the rate of tonsillectomy and postoperative complications have been shown to vary across racial and socioeconomic groups. Pediatric populations are unique in that postoperative care is managed by parents, making parental understanding of discharge instructions critical. This study evaluates the relationship between race, primary parental language, and the rate of post-tonsillectomy complications. Study Design: Retrospective cohort study. Methods: We performed a retrospective study of pediatric patients </=18 years who underwent tonsillectomy at our tertiary care center between July 2016 and July 2022. The primary outcome was an unplanned revisit to the emergency department or urgent care within 30 days of surgery. Revisit patients were subgrouped by indication as bleeding, non-bleeding, or other. Results: Out of 1,143 pediatric patients who underwent tonsillectomy between the study dates, 168 (14.7%) revisited within 30 days, 68 (5.9%) were readmitted to the hospital, and 17 (1.5%) had a re-operation. Of the revisit patients, 69 (41.0%) returned for bleeding and 99 (58.9%) for non-bleeding concerns. 147 (12.9%) patients spoke a different preferred language than their parents. Patients of Hispanic ethnicity (41.0% vs 30.6%, p=0.020), older age (8.89 +/= 5.17 vs 7.89 +/= 4.60, p=0.020), non-English speaking patients (20.2% vs 12.5%, p=0.016), and patients with non-English speaking parents (8.30% vs 3.40%, p=0.0011) were more likely to revisit. Time to revisit did not differ by language or indication. Conclusions: Older age, Hispanic ethnicity, and non-English primary language of either the parent or patient were associated with increased postoperative revisits. Targeted interventions including interpreter support or translated postoperative instructions in preferred language may improve comprehension and decrease preventable revisits.

TRIO137. Trends in Pediatric Inferior Turbinate Surgery in the United States - Authors: Najm S. Khan, MD MBS; Samuel R. Shing, MD; Zi Yang Jiang, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to characterize trends in pediatric inferior turbinate surgery.

Objectives: Characterize trends in pediatric inferior turbinate surgery. Study Design: Retrospective cohort study. Methods: The TriNetX database was queried for patients age </= 18 years who underwent inferior turbinate surgery (ITS) 2010-2024. Cases were classified into ITS only, ITS with adenotonsillectomy (ITS + T/A), and ITS with adenoidectomy alone (ITS + A). These groups were subdivided into age groups 0-11 and 12-18 years of age. Results: 26,178 cases were queried; 8,037 ITS, 12,992 ITS + T/A, and 5,149 ITS + A. Overall totals rose from 168 in 2010 to 4638 in 2024 (annual growth rate of 25%). This was driven mainly by ITS + T/A. The annual growth rate for each group was 17.4% (ITS), 61.5% (ITS + T/A), and ITS + A (47.5%). Sole ITS comprised 88% of procedures initially, but following 2014, ITS +T/A became more common. After stratifying each group by age, 12-18 year olds had initially more inferior turbinate surgery. Younger children steadily had more surgery, with annual growth rate for each group at 42.8% (ITS), 58.2% (ITS + T/A), and 49.8% (ITS + A). After 2021, 0-11 year old children started to comprise more of the combination groups while 12-18 year olds remained the majority of the standalone ITS group. Conclusions: The use of pediatric inferior turbinate surgery has increased, with an increased tendency toward combination procedures with tonsillectomy and adenoidectomy, especially in younger children. Further studies are needed to determine the underlying drivers of this phenomenon as well as its consequences.

TRIO138. Distance from Hospital as a Marker of Hospital Readmission Rates within 1 Year in Pediatric Patients with Tracheotomies - Authors: Jennifer A. Kong, BA; Hrithik Praveen, BS; Kalpnaben Patel, CCRP; Christopher T. Wootten, MD MMHC FACS

Educational Objective: At the conclusion of this presentation, the participants should be to assess how geo-

graphic location influences tracheotomy outcomes.

Objectives: This study aims to characterize how proximity to the hospital and urban-rural status affect in-hospital and long-term outcomes of tracheotomy in pediatric patients. Study Design: Retrospective single institution study of children receiving tracheotomy, May 2017-March 2024. Methods: Chart review collected patient zip codes. Rural-Urban Commuting Area (RUCA) codes were used to determine urban (RUCA 1-3) and rural (RUCA 4-10) status, and distance from hospital was calculated. Outcomes of total hospital stay length, any cause hospital readmission within one year, and tracheostomy-related readmission within one year were analyzed using chi-square test and Kruskal-Walli's test. Results: 124 patients were included. Patients without hospital readmissions within one year of discharge had significantly longer hospital length of stay than those readmitted ($p<0.02$). In addition, patients not readmitted within one year for any cause lived significantly farther from the hospital than those with at least one readmission, and this association remained significant when limited to tracheotomy related readmission ($p < 0.0292$, $p < 0.0381$ respectively). Urban areas were significantly closer to the hospital than rural areas ($p<0.02$), though no significant difference was found in any cause and tracheostomy-related hospital readmission between urban rural status. Conclusions: Greater distance from hospital was significantly associated with longer total hospital length of stay and fewer readmissions to the hospital within a year, suggesting that extended hospitalization can improve medical readiness for discharge. In addition, analysis of urban rural status showed no significant relationship with hospital readmission. Thus, distance from hospital rather than urban rural status may be a better indicator of long-term tracheotomy outcomes.

TRIO139. Determining the Minimal Clinically Important Difference (MCID) for the Hearing Environments and Reflection on Quality of Life-26 (HEAR-QL-26) in Children with Hearing Loss - Authors: Lauren A. Lewis, BS MEng; Amy E Ensing, BS; Helen Struble, BS; Judith EC Lieu, MD MSPH

Educational Objective: At the conclusion of this presentation, the participants should be able to (1) understand the clinical relevance of the MCID for evaluating hearing-related quality of life in pediatric hearing loss, and (2) recognize how a HEAR-QL-26 MCID threshold can guide interpretation of clinically meaningful outcomes and treatment response.

Objectives: The Hearing Environments and Reflection on Quality of Life-26 (HEAR-QL-26) is a validated tool for evaluating quality of life in pediatric hearing loss (HL); however, a minimal clinically important difference (MCID) has not yet been established. This study aims to identify an MCID for the HEAR-QL-26 among children with HL. Study Design: Prospective observational study. Methods: Patients aged 7-12 years were contacted by phone and completed electronic HEAR-QL-26 surveys before and 30 days after their hearing device appointment. Anchor-based MCIDs were calculated as the difference in mean one month HEAR-QL-26 score change between participants reporting improved versus unchanged hearing-related problems. Results: Data from 26 children with HL were analyzed. The mean change among participants reporting hearing-related improvement was 8 +/= 9, compared to -2 +/= 10 among those reporting no change, yielding an estimated MCID of 10 for the HEAR-QL-26 total score. This value is comparable to the distribution-based MCID of 9, calculated as one-half of the published standard deviation from the initial HEAR-QL-26 validation, supporting its face validity. Anchor based subdomain MCIDs were 15 (Environments), 2 (Activities), and 8 (Feelings). Recruitment remains ongoing. Conclusions: In this cohort, an MCID of 10 for the total HEAR-QL-26 score was associated with perceived change in hearing-related quality of life. Clinicians utilizing the HEAR-QL-26 to assess changes in hearing related quality of life may use this threshold to guide patient counseling and clinical decision making. Larger sample sizes obtained through ongoing recruitment are necessary to confirm these findings.

TRIO140. Semicircular Canal Microanatomy: A Histologic Study of Human Temporal Bones with Implications for Gene Therapy Delivery - Authors: Maya Nkisi Matabele, MS; Rafael da Costa Monsanto, MD PhD; Nevra Keskin-Yilmaz, DVM PhD; Jake P. Dahl, MD PhD MBA; Sebahattin Cureoglu, MD; Michael D. Puricelli, MD

Educational Objective: To understand the microanatomic relationships between the membranous and bony labyrinths of the semicircular canals and their implications for safe and effective gene therapy delivery.

Objectives: To characterize the histologic spatial relationship between the membranous and bony labyrinths of the human semicircular canals to inform the safety and surgical feasibility of fenestration sites for gene therapy delivery. Study Design: Descriptive histologic analysis of human temporal bones. Methods: Thirty human temporal bones procured during autopsy were sectioned at 20 micrometer intervals. Every tenth section was stained and analyzed using calibrated imaging software. Measurements included the shortest distance from the membranous labyrinth to the inner and outer bony circumferences of the superior, lateral, and posterior semicircular canals at three anatomical subsites. Major and minor axes of the membranous duct were also measured. Distances and contact frequencies were compared using paired t tests, ANOVA, and chi-square tests. Results: Direct contact between the membranous labyrinth and the outer bony circumference was observed in 84.1% (202/239) of sites, while direct contact was not observed at the inner bony wall (0/239) (P less than .001). Ampullated segments had significantly larger membranous duct dimensions than non-ampullated sites (P less than .001). Conclusions: The membranous labyrinth frequently abuts the outer bony wall of the semicircular canals. This conserved relationship may increase the risk of opening into the endolymphatic compartment resulting in impaired perfusion, incomplete response to therapy, and vestibular adverse effects. When semicircular canals are used for fenestration, an inner circumferential approach would minimize iatrogenic injury risk. These data support the need for histologically guided identification of fenestration sites and systematic optimization of gene therapy delivery parameters.

TRIO141. Persistent Swallowing Dysfunction Following Type I Laryngeal Cleft Surgery: Long-Term Followup - Authors: Abhinav Mehta, BS; Seckin Ulualp, MD MBA; Claire Chapel, MD; Stephen Chorney, MD MPH; Felicity Lenes-Voit, MD; Ron Mitchell, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to understand the long-term course of persistent swallowing dysfunction after surgical treatment of type I laryngeal cleft (LC-1).

Objectives: To evaluate the long-term course of persistent swallowing dysfunction after surgical treatment of type I laryngeal cleft (LC-1). Study Design: Cross-sectional. Methods: A retrospective review was conducted on all consecutive children with persistent swallowing dysfunction after surgical treatment of LC-1. Swallowing function was assessed using a video fluoroscopic swallow study (VFSS) before and after surgery. VFSS findings were used to determine penetration aspiration scale (PAS) and functional oral intake scale (FOIS) scores. Pre- and post-surgery PAS and FOIS scores were compared. $P < 0.05$ was considered significant. Results: Twenty-one patients with persistent swallowing dysfunction (13 male, 8 female, age range:5months-16years) after endoscopic repair (n=16) or injection laryngoplasty (n=5) for LC-1 (n=5) were followed for up to six years. Swallowing abnormalities were observed in the oral phase in 10 patients, the pharyngeal phase in 19, the esophageal phase in 7, and swallow triggering in 8. In 5 children (24%), impairments in all phases of swallowing were resolved. Impairment of the oral phase resolved in 5 patients (50%), pharyngeal phase in 6 (32%), esophageal phase in 6 (86%), and swallow triggering in 6 (75%). Preoperative PAS score (median=3) was less than postoperative PAS score (median=5) (p=0.04). Postoperative FOIS score (median=4) was higher than preoperative FOIS score (median=5) (p=0.02). Conclusions: The impairment in multiple phases of swallowing continued to improve after surgical treatment of LC-1. Further research is necessary to identify the factors that predict swallowing function improvement in larger groups of children with LC-1.

TRIO142. Associations Between Prefrontal Cortex Activation and Cognitive Performance in Children with Sleep Disordered Breathing - Authors: Nithya Navarathna, BS; Sergio L. Novi, PhD; Sabrina Nusraty, BS; Amal Isaiah, BS

Educational Objective: At the conclusion of this presentation, the participants should be able to understand how functional near-infrared spectroscopy (fNIRS) can be used to assess the relationship between PFC activation and cognitive performance in children with sleep-disordered breathing.

Objectives: Sleep-disordered breathing (SDB) affects up to 10% of children and is associated with executive dysfunction and poor academic outcomes. This study examined the relationship between prefrontal cortex (PFC) activation measured by functional near-infrared spectroscopy (fNIRS) and cognitive performance in children evaluated for SDB. Study Design: Two-center prospective observational study from January 2024 to July 2025. Methods: We enrolled 210 children aged 5-11 years referred for clinical evaluation of SDB. During fNIRS measurement, participants completed a Go/No-Go task assessing response inhibition. Cognitive performance was measured using the NIH-Toolbox Cognition Battery, including domains of inhibitory control, language-based reasoning, crystallized cognition and overall cognitive performance. Pearson correlations were computed between regional brain activation and standardized cognitive scores. Results: Higher cognitive performance was associated with lower task-related PFC activation, suggesting greater neural efficiency. Inhibitory control correlated negatively with activation in the left superior frontal gyrus ($r=0.28$, $P<0.001$) and positively with the right frontal gyrus ($r=0.28$, $P=0.02$). Similar spatial activation patterns were observed for crystallized cognition, indicating overlapping PFC organization for inhibitory control and language-based tasks. Significant correlations between PFC activation and cognitive performance were observed specifically for inhibitory control, oral reading recognition, crystallized cognition, and overall cognitive composite scores. Conclusions: Children with SDB and stronger cognitive performance demonstrated reduced task related PFC activation, reflecting greater neural efficiency. These findings highlight fNIRS-derived neural efficiency as a potential biomarker of cognitive resilience in pediatric SDB and may inform targeted interventions for children at risk of cognitive impairment.

TRIO143. Prefrontal Functional Connectivity Moderates the Neurobehavioral Effects of Sleep Disordered Breathing in Children - Authors: Sergio L. Novi Junior, PhD; Nithya Navarathna, BS (Presenter); Sabrina Nusraty, BS; Amal Isaiah, MD PhD MBA

Educational Objective: At the conclusion of this presentation, the participants should be able to understand how network-level fNIRS analysis reveals the dynamic interplay between clinical symptoms, brain connectivity, and behavior in children.

Objectives: To investigate how prefrontal cortex (PFC) functional connectivity patterns moderate the link between sleep-disordered breathing (SDB) severity and executive function in children. Study Design: Bi-center prospective observational study. Methods: A total of 210 children (ages 5-11) completed a Go/No-Go response inhibition task during functional near-infrared spectroscopy (fNIRS) recording. Functional connectivity was computed from temporal correlations among prefrontal regions. Executive function was assessed using parent-reported Behavior Rating Inventory of Executive Function (BRIEF) scores, and SDB severity using the Pediatric Sleep Questionnaire (PSQ). Principal Component Analysis identified dominant connectivity patterns, which were tested as moderators of the relationship between PSQ and BRIEF scores using linear mixed-effects models, with age included as a covariate and site as a random effect. Results: Two PFC connectivity patterns were associated with executive outcomes. For global executive function, one component (PC8) had a significant main effect ($p=0.035$). Another component (PC9) significantly interacted with SDB severity for both global executive function ($p=0.040$) and inhibitory control ($p=0.029$). This interaction revealed a crossover effect for global executive function, where a negative association between the PC9 pattern and performance at low SDB

severity was reversed at higher symptom scores. Conclusions: PFC connectivity patterns interact with SDB severity to shape executive outcomes in children. Our findings support a network-based model of neurobehavioral dysfunction in SDB, highlighting disrupted prefrontal coordination as a key mechanism linking SDB to its cognitive consequences.

TRIO144. Polysomnographic Versus Parent Reported Predictors of Executive Function in Children with Sleep Disordered Breathing - Authors: Sabrina A. Nusraty, BS BA; Nithya Navarathna, BS; Sergio Novi, PhD; Heather Bortfeld, PhD; Ron B. Mitchell, MD; Amal Isaiah, MD DPhil MBA

Educational Objective: At the conclusion of this presentation, participants will be able to describe the tools used to assess pediatric sleep disordered breathing and evaluate the comparative effectiveness of polysomnography (PSG) indices and parent reported questionnaires in predicting executive dysfunction in children.

Objectives: To compare polysomnography (PSG) indices with parent reported questionnaires in predicting executive dysfunction in children with sleep disordered breathing (SDB). Study Design: Prospective observational study. Methods: Seventy-eight children aged 5-11 years referred for SDB evaluation underwent overnight PSG, caregiver completed Obstructive Sleep Apnea-18 (OSA-18) and Pediatric Sleep Questionnaire Sleep Related Breathing Disorder (PSQ-SRBD) scale, and executive function testing. Outcomes included inhibitory control measured by a computerized Go/No-Go (GNG) task (d' sensitivity) and parent reported executive dysfunction using the Behavior Rating Inventory of Executive Function, Second Edition (BRIEF-2) Global Executive Composite (GEC). Associations between predictors and outcomes were assessed using Spearman's rank correlations. Results: The cohort (mean age, 7.8 years) was 53% male and 56% Black. PSG revealed moderate-to-severe obstructive sleep apnea (OSA) (mean apnea hypopnea index [AHI], 12.7 events/hr; mean oxygen nadir, 86.6%). OSA-18 and PSQ-SRBD scores were significantly correlated with BRIEF-2 GEC (OSA-18 vs. GEC: $p = 0.61$, $P < 0.001$; PSQ-SRBD vs. GEC: $p = 0.62$, $P < 0.001$). In contrast, no PSG variable, including AHI or oxygen nadir, was significantly associated with BRIEF-2 or GNG outcomes. Neither PSG indices nor questionnaire scores correlated with GNG d'. Conclusions: Parent reported symptom burden, but not PSG indices, predicted executive dysfunction in children with SDB. Validated questionnaires such as the OSA-18 and PSQ-SRBD may provide practical, patient centered tools for identifying children at risk for neurobehavioral morbidity, particularly in settings where PSG access is limited.

TRIO145. From Clinic to OR: Preoperative Tympanometry Type and Middle Ear Effusion at Tube Placement - Authors: Akshay Prabhakar, BSA; Marlaine Frelier, BS; Daniel Trautmann, BS; Romaine Johnson, MD MPH FACS

Educational Objective: At the conclusion of this presentation, the participants should be able to understand how preoperative tympanometry classification (A/B/C) relates to the presence or resolution of middle ear effusion (MEE) at tympanostomy tube placement and recognize how the interval between tympanometry and surgery may influence these findings.

Objectives: Clinical practice guidelines highlight a need to determine how strongly abnormal tympanometry is associated with persistence of OME. We aimed to address this by (1) quantifying ear level risk of intraoperative MEE by tympanometry type (A/B/C); (2) estimating the probabilities of resolution (B → no fluid) and development (A/C → MEE) from clinic to surgery; and (3) exploring whether the tympanometry to surgery interval (days) influences effusion presence on the day of surgery. Study Design: Retrospective cohort study at a tertiary pediatric center. Methods: We included 275 consecutive children (≈ 550 ears) undergoing tube placement who had a tympanogram (A/B/C; As/Ad → A) at the clinic visit before their procedure and operative notes that recorded fluid findings (none/right/left/bilateral). Primary measures were persistence of middle ear fluid in clinic-B ears resolution and development of middle ear fluid among clinic-A/C ears. Prespecified secondary

analyses considered days from tympanometry to surgery (bands: 0-14, 15-30, 31-60, greater than 60). Results: We analyzed 520 ears (A=141, B=317, C=60). Intraoperative MEE occurred in 44.0% of A (62/141), 72.2% of B (229/317), and 68.3% of C (41/60). Compared with A, effusion risk was higher for B (RR 1.64, 95% CI 1.35-2.00, p less than 0.001) and C (RR 1.55, 95% CI 1.21-2.00, p=0.0016); B vs C showed no difference (RR 1.06, 95% CI 0.88-1.27, p=0.54). Resolution among clinic-B ears was 27.8% (88/317). Development among clinic-A/C ears was 51.2% (103/201). Patterns were directionally consistent across days to surgery time bands. Conclusions: Preoperative tympanometry is strongly associated with ear level effusion at surgery. The resulting resolution and development probabilities offer concise, counseling ready estimates to inform shared decision making and scheduling.

TRIO146. Epiglottis Stiffening Operation for Severe Type 3 Laryngomalacia in Children: An Ambispective Cohort Study at a Tertiary Pediatric Center - Authors: Edder Armando Pulido Arias, MD; Perla Villamor, MD (Presenter); Maria Alejandra Henao, MD; Steven Osorio Anaya, MD

Educational Objective: Describe the clinical features and classification of severe type 3 laryngomalacia in infants; understand the indications for surgical intervention and the limitations of conventional supraglottoplasty in type 3 LM; explain the principles and stepwise technique of the adapted Epiglottis Stiffening Operation (ESO) for posterior epiglottic prolapse recognize the postoperative outcomes, including clinical symptom improvement, nutritional status, and polysomnographic changes; identify potential complications and strategies for their management, highlighting the safety profile of ESO in the pediatric population.

Objectives: Laryngomalacia (LM) is the most common congenital laryngeal anomaly and the leading cause of pediatric stridor. While most cases follow a benign course, approximately 10% of patients develop severe disease requiring surgical intervention. Supraglottoplasty remains the standard treatment; however, outcomes are often suboptimal in type 3 LM. The Epiglottis Stiffening Operation (ESO) has demonstrated durable, sutureless correction of posterior epiglottic prolapse in adults. This study aimed to evaluate the feasibility, safety, and early outcomes of a modified ESO technique in infants with severe type 3 LM. Study Design: Ambispective cohort study. Methods: An Ambispective cohort study was conducted in the Pediatric Otolaryngology Department of a tertiary referral center between January 1, 2021, and December 31, 2024. Consecutive pediatric patients diagnosed with LM were included. Those meeting predefined clinical and endoscopic criteria for surgery comprised the operative cohort, and infants with severe type 3 LM underwent ESO. Symptoms were assessed using the PARCAS scale (Progressive stridor, Aspiration/dysphagia, Respiratory distress, Cyanosis/desaturation, Apneic episodes, Sleep apnea by PSG), and nutritional status was evaluated by weight. Pre- and postoperative polysomnography (PSG) data, follow-up outcomes, and complications were analyzed. Statistical analyses included descriptive, bivariate, and multivariate methods, with significance set at $p < 0.05$. Results: A total of 106 patients were diagnosed with LM (64.2% male; median age 7.3 months). Twenty-eight (26.4%) required surgery, and 19 (67.9%) underwent ESO. Clinical symptoms improved significantly postoperatively: the mean preoperative PARCAS score was 4, decreasing to 1 after surgery ($p < 0.001$). Respiratory distress was the most frequent presenting symptom (94.7%). The mean apnea hypopnea index (AHI) decreased from 9.99 to 8.1 events/hour, with near complete resolution of obstructive apneas. Other PSG parameters showed improvement trends. Mean follow-up was 19.5 months (SD 14.7). Two patients (10.5%) developed mild, transient dysphagia managed with thickened feeds, resolving within one month. No revision surgeries were required. Conclusions: Although most cases of laryngomalacia resolve spontaneously, a subset requires surgical intervention. The adapted ESO technique demonstrated safety, feasibility, and clinical efficacy in infants with severe type 3 LM, resulting in symptomatic, nutritional, and polysomnographic improvement. Its preservation of epiglottic function, low complication rate, short learning curve, and reduced operative time make it a promising alternative for managing this challenging subgroup.

TRIO147. Recurrent Croup in Children with Grade I Subglottic Stenosis: A Management Dilemma and Proposed Algorithm - Authors: Deepa Shivnani, MBBS DNB ENT

Educational Objective: At the conclusion of this presentation, the participants should be able to: learn clinical cues that differentiate recurrent croup caused by Grade 1 SGS from a typical viral croup episode; discuss multidisciplinary perspectives to determine timing of endoscopic evaluation versus continued medical management; identify risks, benefits, and controversies for various endoscopic techniques and early open airway procedures in Grade 1 SGS; counseling of caregivers on steroid exposure, repeated procedures and various surgical options to promote shared decision-making; develop an Institution-level protocol, and algorithms to standardize care, and escalation criteria for recurrent croup with subglottic stenosis cases.

Objectives: Recurrent croup is a common source of emergency room visits and parental concern. Airway evaluation often reveals mild subglottic narrowing (Cotton-Myer Grade I), but optimal management is unclear. Management of this subgroup is often controversial, with limited consensus on when to observe, intervene endoscopically, or escalate to reconstruction. Study Design: A literature review. Methods: A review of the literature from 2000 to 2025 was performed, looking at studies evaluating airway findings in recurrent croup, as well as the medical and surgical management of Grade I subglottic stenosis. Guidelines and consensus statements were also reviewed for areas of agreement and controversy. The evidence was compiled to provide a practical algorithm with a stepwise pathway for management. Results: Children presenting with recurrent or atypical croup have a high yield of structural airway findings, with low-grade subglottic stenosis most commonly identified. Conservative management including laryngopharyngeal reflux treatment, inhaled corticosteroids, and close observation is effective in most children with minimal symptoms between episodes. Endoscopic intervention including balloon dilation or incision with dilation may be considered in those with recurrent severe disease, while open airway reconstruction is rarely indicated for grade I disease. Multidisciplinary collaboration between pediatric otolaryngology, pulmonology, and gastroenterology team improves diagnostic yield and outcomes. Conclusions: Children with recurrent croup should undergo airway evaluation in the setting of frequent, severe, or atypical episodes. Grade I subglottic stenosis represents a dilemma best navigated with a tailored algorithm emphasizing conservative care, selective endoscopic intervention, and multidisciplinary care coordination. The algorithm was created according to age, recurrence and severity to standardize decision making and to reduce unnecessary interventions while ensuring airway safety.

TRIO148. Comorbidity Burden Across Hearing Loss Subtypes in Children: Insights from the 2016 KID Database - Authors: Asritha Sri Venkatasathya Sure, BA; Mingqian Tan, BS; Zachary Goldberg, MD; Jessica Levi, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to identify how hearing loss subtype correlates with medical comorbidities in children, which can guide early screening and multidisciplinary management.

Objectives: Limited data exists on various epidemiological differences between pediatric conductive (CHL) and sensorineural hearing loss (SNHL) patients. We utilized the Complex Chronic Conditions (CCC) schema to compare comorbidity burden among hearing loss subtypes in children. Study Design: Retrospective, cross-sectional study utilizing the 2016 Kids' Inpatient Database (KID). Methods: Hospitalizations with CHL (n=2260), SNHL (n=4509), and MHL (n=387) were mapped to CCC domains. Patients with 2 or more domains were classified as having high comorbidity burden, serving as a proxy for medical complexity. Odds ratios (OR) for high burden were compared across HL groups, followed by multivariable logistic regression adjusting for demographic and clinical variables. Results: Univariate analyses demonstrated that children with SNHL had 49% higher odds of high burden compared to CHL ($p < 0.001$). After adjusting, SNHL remained significantly associated, with 73% higher odds (OR 1.73; 95% CI 1.49 - 2.02; $p < 0.001$). Prematurity, congenital heart disease, asthma, and young-

er age were associated with high burden, while MHL cases were rare, limiting analysis. Conclusions: Pediatric SNHL is associated with substantially greater multisystem comorbidity compared to CHL. Hearing loss subtype may represent an underrecognized indicator of medical complexity, with implications for early screening, multidisciplinary care coordination, and targeted resource allocation.

TRIO149. Echocardiographic Findings in Children with Down Syndrome and Obstructive Sleep Apnea - Authors: Sarah Yang, BS; Wiktoria Gocal, MD; Nithya Navarathna, BS; Amal Isaiah, MD DPhil MBA

Educational Objective: At the conclusion of this presentation, the participants should be able to gain a better understanding of the relationship between polysomnographic parameters of obstructive sleep apnea and echocardiographic markers of pulmonary hypertension.

Objectives: Children with Down Syndrome (DS) experience high rates of obstructive sleep apnea (OSA), affecting up to 75% compared to 5% in typically developing children. While OSA is an established cardiovascular risk factor associated with pulmonary hypertension (PH), the relationship between OSA severity and cardiovascular outcomes in DS remains poorly understood. Study Design: Retrospective observational cohort study. Methods: We assessed children with DS who underwent both polysomnography (PSG) and echocardiography between January 2016 and December 2024. We analyzed the extent of correlations between PSG parameters and echocardiographic markers of PH using linear regression. Results: The cohort (n=92) had a mean age of 4.2 years with 55.4% male participants. Nearly two-thirds (66.3%) demonstrated severe OSA (apnea hypopnea index greater than 10 events/hour) and congenital heart disease was present in 90.2% of patients. Despite the substantial OSA burden, no significant associations were identified between PSG parameters and echocardiographic markers of PH. Specifically, AHI was not associated with tricuspid regurgitation velocity ($R^2=0.02$, $P=0.34$) or pulmonary valve peak velocity ($R^2=0.03$, $P=0.28$). There were no significant differences in PSG parameters between patients stratified by a history of PH. Conclusions: In this group of patients with DS and OSA, PSG parameters were not linked to echocardiographic markers of PH. These results imply that the cardiovascular effect of OSA may be masked by structural heart disease, or that standard sleep measurements do not fully capture OSA-related cardiovascular stress in this population. Alternative physiological measures and longitudinal studies might be needed to better understand the additional role of OSA in cardiovascular disease in DS.

TRIO150. Disparities in Pediatric Otolaryngology Patients with Limited English Proficiency: A Systematic Review - Authors: Edmund Zhi, BS; Ruby Nguyen, BS; Kylie Tang, BA; Frances Rodriguez-Lara, MD; Jessica Levi, MD

Educational Objective: At the conclusion of this presentation, the participants should be able to recognize current disparities that pediatric otolaryngology patients with limited English proficiency may face. Additionally, the participants should be able to understand the current state of research in this area, including what has been done to detect, understand, and reduce known disparities.

Objectives: To summarize and evaluate current limited English proficiency (LEP) associated disparities in pediatric otolaryngology. Study Design: Systematic review. Methods: A systematic review was conducted according to the PRISMA 2009 guidelines across PubMed, Web of Science, and Embase. Inclusion criteria included US-based articles from 2005-2025 evaluating clinical outcomes in pediatric otolaryngology across primary language or English language proficiency. Studies were analyzed for clinical outcomes, healthcare utilization, treatment decisions, patient satisfaction, and healthcare quality metrics. Results: An initial search yielded 356 results. After removal of duplicates, 268 studies were screened and 25 studies were included in full-text analysis. Out of 46953 patients included in these studies, 7041 (15.00%) were considered LEP. Of these patients, the most represented primary language was Spanish (N = 3472, 49.31%). Using the Kilbourne framework for

advancing health disparities research, studies were classified as “detecting” (N = 18, 72.00%), “understanding” (N = 5, 20.00%), and “reducing” (N = 2, 8.00%) disparities. Throughout these studies, pediatric patients with LEP had higher no-show rates, emergency department visits post-operatively, time from diagnosis to intervention, and delays in speech, language, and auditory development compared to English-proficient patients. Conclusions: In pediatric otolaryngology, LEP patients experience disproportionately greater adverse healthcare outcomes. Further research should be geared towards providing deeper understanding of why these inequities exist and what interventions may mitigate these disparities, which is critical to achieve equitable health outcomes across linguistic populations.

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1997 . . . . . Robert Cantrell, MD
1998 . . . . . Patrick J. Doyle, MD
1999 . . . . . Richard L. Goode, MD
2000 . . . . . A. Paul Keller, MD

Guests of Honor cont'd

2001 . . . . . Charles W. Cummings, MD
2002 . . . . . Stanley M. Shapshay, MD
2003 . . . . . Brian F. McCabe, MD
2004 . . . . . Byron J. Bailey, MD
2005 . . . . . Robert H. Miller, MD MBA
2006 . . . . . Gerald B. Healy, MD
2007 . . . . . William F. House, MD
2008 . . . . . Patrick E. Brookhouser, MD
2009 . . . . . Harry R. van Loveren, MD
2010 . . . . . Gady Har-El, MD
2011 . . . . . Harold C. Pillsbury, MD
2012 . . . . . Paul A. Levine, MD
2013 . . . . . Robert H. Mathog, MD
2014 . . . . . Michael M.E. Johns, MD
2015 . . . . . Gerald S. Berke, MD FACS
2016 . . . . . William H. Owens, MD
2017 . . . . . H. Bryan Neel, III, MD PhD FACS
2018 . . . . . Dana M. Thompson, MD FACS
2019 . . . . . Harold C. Pillsbury, MD FACS
2020 . . . . . cancelled due to COVID
2021 . . . . . Mark S. Courey, MD
2022 . . . . . Robert T. Sataloff, MD FACS
2023 . . . . . Stacey T. Gray, MD FACS
2024 . . . . . Andrew H. Murr, MD FACS
2025 . . . . . Fred F. Telischi, MD FACS
2026 . . . . . Elizabeth H.Y. Toh, MD MBA

Joseph H. Ogura, MD Lecturers

1986 . . . . . Hugh F. Biller, MD
1987 . . . . . Paul H. Ward, MD
1988 . . . . . John Conley, MD
1989 . . . . . George A. Sisson, MD
1990 . . . . . Sir Donald F.N. Harrison
1991 . . . . . Robert W. Cantrell, MD
1992 . . . . . Michael E. Johns, MD
1993 . . . . . John A. Kirchner, MD
1994 . . . . . John Lewis, MD
1995 . . . . . Eugene Myers, MD
1996 . . . . . Charles W. Cummings, MD
1997 . . . . . Harold C. Pillsbury III, MD
1998 . . . . . Frank E. Lucente, MD
1999 . . . . . Haskins Kashima, MD
2000 . . . . . Christopher Perry, MD
2001 . . . . . Richard R. Gacek, MD
2002 . . . . . David G. Nathan, MD
2003 . . . . . Arnold G. D. Maran, MD
2004 . . . . . Ernest A. Weymuller, Jr., MD
2005 . . . . . Gerald B. Healy, MD
2006 . . . . . Jonas T. Johnson, MD
2007 . . . . . Byron J. Bailey, MD
2008 . . . . . Paul A. Levine, MD
2009 . . . . . Robin T. Cotton, MD
2010 . . . . . Marvin P. Fried, MD
2011
. . . . . Lord Bernard Ribeiro Kt CBE FRCS FACS (Hon.)
2012 . . . . . James L. Netterville, MD
2013 . . . . . Randal S. Weber, MD
2014 . . . . . David E. Eibling, MD FACS
2015 . . . . . Uttam K. Sinha, MD FACS
2016 . . . . . Jonas T. Johnson, MD FACS
2017 . . . . . Eric J. Moore, MD FACS
2018 . . . . . Dana M. Thompson, MD FACS
2019 . . . . . James P. Bagian, MD PE
2020 . . . . . cancelled due to COVID
2021 . . . . . C. Buddy Creech, MD MPH
2022 . . . . . Lara Jehi, MD MHCDS
2023 . . . . . Rochelle P. Walensky, MD MPH
2024 . . . . . Jennifer R. Grandis, MD FACS
2025 . . . . . Cherie-Ann Nathan, MD FACS
2026 . . . . . Cliff A. Megerian, MD FACS

In Memoriam

The following deaths have been reported to the Administrative Office since the publication of the 2025 Annual Program.

	Elected	Deceased
Vijay K. Anand, MD FACS	1990	2025
Thomas J. Balkany, MD FACS	1985	2025
Douglas W. Frerichs, MD FACS	1972	2025
Joseph B. Jacobs, MD	1996	2025
John S. May, MD FACS	2011	2025
Max Lee Ronis, MD FACS	1971	2025
C. Gordon Strom, MD FACS	1977	2024
Harvey M. Tucker, MD	1977	2025

The Triological Society
UPHOLDING THE NOBLE LEGACY

Beyond the Otoscope: Family Care for the Sandwich Generation

Moderator:
M. Elise R. Graham, MD FRCSC

Panelists:
Kristen A. Echanique, MD
Jeffrey P. Simons, MD MMM
Julie L. Wei, MD MMM

Wednesday, June 10, 2026
7:00 pm CST/8:00 pm EST


M. Elise R. Graham, MD FRCSC


Kristen A. Echanique, MD


Jeffrey P. Simons, MD MMM


Julie L. Wei, MD MMM

This webinar will explore the realities of the "sandwich generation" in otolaryngology, focusing on surgeons balancing the competing demands of raising children, supporting aging parents, and sustaining busy clinical and academic careers.

Through personal narratives and moderated discussion, panelists will examine how these responsibilities shape career trajectory, wellbeing, and job satisfaction.

The session will highlight practical strategies used by otolaryngologists and their families, while also considering how workplace culture and institutional structures can better support physicians across the full span of a surgical career.

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SCAN HERE

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UPHOLDING THE NOBLE LEGACY

JOIN THE TRIOLOGICAL SOCIETY

CANDIDANCY APPLICATION IS NOW OPEN

Did you know that The Triological Society gives away over **$500,000** in Research and travel grants for Residents and Medical Students each year? We are the largest contributor to research funding in the house of Otolaryngology- Head and Neck Surgery and are committed to supporting the future of our specialty. While writing a thesis may sound daunting, the thesis categories have broadened to allow for more flexibility and provide less of a barrier for completion. The value of membership lies in our shared commitment to mentorship, friendship and scholarly achievement. If you are interested in joining our Noble Society the candidacy application is open. Scan the QR code below.

SCAN TO APPLY

Start Your Application Today

Triological Society CME Breakdown

Thursday, April 23, 2026	**Hours**
Thesis Award Presentations	0.75
Head and Neck Session A	1.50
Pediatric Otolaryngology Session B	1.75
General / Sleep Session C	1.75
Total CMEs for April 23, 2026	**5.75**
Friday, April 24, 2026	
Facial Plastics Concurrent Session D AND Gerald B. Healy Panel	2.25
Otology / Neurotology Concurrent Session F AND Gerald B. Healy Panel	2.25
Allergy / Rhinology Concurrent Session E	1.50
Laryngology / Bronchoesophagology Concurrent Session G	1.50
Total CMEs for April 24, 2026	**7.50**
TOTAL CME'S	**13.25**

Scan here for CME evaluation

ELEVATE-ENT

Empowering Leadership and Education through Visibility, Advocacy, Technical Skill Building, and Excellence in Otolaryngology

Inaugural ELEVATE-ENT cohort at the 2026 Combined Sections Meeting, Orlando FL

ELEVATE-ENT (*Empowering Leadership and Education through Visibility, Advocacy, Technical Skill Building, and Excellence in Otolaryngology*) is a longitudinal initiative of the Triological Society grounded in mentorship and inclusive excellence. The program supports medical students, particularly those without access to home Otolaryngology programs, who are exploring careers in the specialty by increasing access, strengthening skill development, expanding representation, and fostering a meaningful sense of belonging.

ELEVATE-ENT launched its inaugural cohort during the Combined Sections Meeting in Orlando, Florida in January 2026. The program was highly competitive, with 13 Pathway Scholars selected from a highly selective national applicant pool and thoughtfully matched with 13 otolaryngologist Pathway Navigators. The kickoff experience brought participants together for immersive mentorship, career exploration, and a highly engaging hands on skills lab, which emerged as a standout component of the program.

As a longitudinal initiative, ELEVATE-ENT continues with its second session at the **Combined Otolaryngology Spring Meetings in Phoenix, Arizona on April 24, 2026**. This next phase focuses on residency application preparation, including guidance on the ERAS application, personal statement development, and mock interview experiences, alongside continued mentorship and small group discussions.

Early outcomes show strong impact. Scholars report greater clarity on the residency pathway, increased confidence in pursuing Otolaryngology, and stronger mentor connections. All participants reported increased interest, with many moving from initial interest to active plans to apply.

ELEVATE-ENT is grateful to its Pathway Navigators for their generosity of time and mentorship. Many have hosted scholars in their clinics and remain connected beyond the program, reflecting its focus on lasting relationships.

This initative is made possible through the support of

THE TRIOLOGICAL SOCIETY
Upholding the Noble Legacy

AMERICAN ACADEMY OF OTOLARYNGOLOGY-HEAD AND NECK SURGERY®

To learn more or get involved, please contact Angel Alcazar at angel@triological.org

The Triological Society
UPHOLDING THE NOBLE LEGACY

2027 Meetings

Abstract Submissions

Combined Sections Meeting

January 21-23, 2027
Hyatt Regency
Huntington Beach, CA

SUBMISSION WINDOW
July 1, 2026 - August 1, 2026

129th Annual Meeting at COSM

April 7-11, 2027
Sheraton Grand
Seattle, WA

SUBMISSION WINDOW
July 1, 2026 - October 15, 2026

All abstracts accepted for oral or poster presentation are the property of the Triological Society.

Manuscript submission to The Laryngoscope or Laryngoscope Investigative Otolaryngology is required prior to oral presentation.

The material in all abstracts may not be submitted for publication, published or presented previously at another national or international meeting and may not be under consideration for presentation at another national or international meeting.

The penalty for duplicate presentation/ publication will prohibit all authors from presenting at a Triological Society meeting or at COSM for three years.

Travel grants are available to Fellows, Residents, and Medical Student presenters.

Scan QR Code for Abstract Submission Guidelines and Information