Ninth Annual

Karen Zier PhD Medical Student Research Day

Program and Abstracts

Thursday, May 28, 2026

3:30PM - 7:30PM

Icahn School of Medicine at Mount Sinai

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Icahn School of Medicine at Mount Sinai

Welcome to the 31st Annual Medical Student Research Day (MSRD). The Medical Student Research Office (MSRO) is proud to celebrate and showcase the scholarly achievements of our medical students. The projects presented today reflect not only intellectual curiosity and critical thinking, but also the persistence, adaptability, and sense of purpose our students have brought to their work.

This year's presentations represent an important moment of transition for our institution. The majority of abstracts come from students in the ASCEND curriculum, alongside continued contributions from students in the legacy curriculum. Together, these projects highlight the evolving ways in which scholarship is being integrated into undergraduate medical education, and the central role it continues to play in shaping how students ask questions, analyze evidence, and contribute to the advancement of medicine.

At a time when the expectations surrounding research and scholarship in medical education continue to grow, MSRD serves not only as a celebration, but also as a reflection of the systems, mentorship, and institutional commitment required to support student success. The work presented here underscores the importance of sustained investment in mentorship and structured research opportunities, much of which occurs beyond the formal curriculum but remains essential to students' development as physicians and scholars.

These accomplishments would not be possible without the invaluable guidance of our faculty mentors. We extend our sincere gratitude to the mentors who have supported and collaborated with students throughout the past year. We also thank our Scholar Advisors for their continued mentorship and thoughtful guidance:

- Jacob Appel, MD, MS, MPH
- Supinda Bunyavanich, MD
- Kevin Costa, PhD
- Darinka Gadikota-Klumpers, PhD
- Leona Hess, PhD
- James Iatridis, PhD
- Minal Kale, MD
- Jenny Lin, MD
- Ann-Gel Palermo, DrPH
- Perry Sheffield, MD
- Rainer Soriano, MD
- Tyree William, PhD

The success of MSRD is also made possible by the dedication and coordination of Grace Oluoch and Yakhira Encarnacion-Patterson, senior program administrators for the MSRO, whose work ensures a meaningful and seamless experience for our students and community.

Thank you for joining us in recognizing and celebrating the achievements of our students and the faculty who support them. We hope you enjoy this year's Medical Student Research Day.

Jenny J. Lin, MD, MPH
Co-Director of SCHOLaR

Keith Sigel, MD, PhD
Director of PORTAL

Mary Rojas, PhD
Director of the MSRO

PROGRAM

Welcome 3:35 - 3:45 pm

Mary Rojas, PhD
Director, Medical Student Research
Icahn School of Medicine at Mount Sinai

Eric J. Nestler, MD, PhD
Anne and Joel Ehrenkranz Dean
Icahn School of Medicine at Mount Sinai
Executive Vice President
Chief Scientific Officer
Mount Sinai Health System

David C. Thomas, MD, MHPE
Dean for Medical Education
Chair, Leni and Peter May Department of Medical Education

Student Presentations 3:50- 4:50pm

Olivia First, MS II
Immune Checkpoint Inhibitor Treatment in Mucosal Melanoma: A Retrospective Analysis of the National Cancer Database.
MENTOR: MAAIKE VAN GERWEN, MD, PHD

Student Presentations cont.

Matt Jogodnik, MS II
Regional Selectivity of Pituitary Adenoma-I nduced Cortical Changes Map to Glial and Endothelial Signature
MENTOR: RAJ SHRIVASTAVA, MD

Juhana Habib, MS III
Sleep-IBD Beliefs as Drivers of Sleep Medication Use: A Cross-Sectional Survey Study.
MENTOR: HYDER SAID, MD

Closing Remarks 4:50 - 5 pm

Jenny Lin, MD, MPH
Associate Director, SCHOLaR
Medical Student Research
Icahn School of Medicine at Mount Sinai

5 pm - 5:15pm Annenberg West Lobby
Light Refreshments available for presenters and guests

5:15 - 6:15 pm
Session A - Poster Presentations
Annenberg West Lobby

6:30 - 7:30 pm
Session B - Poster Presentations
Annenberg West Lobby

STUDENT SPEAKERS

OLIVIA FIRST, MS II
Immune Checkpoint Inhibitor Treatment in Mucosal Melanoma: A Retrospective Analysis of the National Cancer Database
Abstract #: 23

MATT JOGODNIK, MS II
Regional Selectivity of Pituitary Adenoma-Induced Cortical Changes Map to Glial and Endothelial Signature
Abstract #: 34

JUHANA HABIB, MS III
Sleep-IBD Beliefs as Drivers of Sleep Medication Use: A Cross-Sectional Survey Study.
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2	**VERTEBRAL BODY TETHERING FOR ADOLESCENT IDIOPATHIC SCOLIOSIS IN SKELETALLY MATURE PATIENTS: MID-TERM OUTCOMES AT 52 MONTHS.** **Yazan Alasadi[1]**, Olgerta Mucollari[2], Baron Lonner[2]. [1]Medical Education, [2]Orthopaedics. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.
3*	**NEW ETHICAL AND LEGAL CHALLENGES IN THE USE OF EXTRA-CORPOREAL MEMBRANE OXYGENATION.** **Michael Auten**, Jacob Appel[1]. [1]Psychiatry. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
4*	**DEMOGRAPHIC DIFFERENCES BETWEEN PATIENTS ATTENDING FREE HERNIA CAMPS AND FEE-BASED SURGICAL SERVICES AT KYABIRWA SURGICAL CENTER (KSC) IN JINJA, EASTERN UGANDA.** **Fatmata Bah**, Brian Kisomose[1], Joseph Okello Damoi[1], Anna Kulumuna[1], Ambrose Nuwahereza[1], Winifred Nannozi[1], Michael Marin[2], Linda Zhang[2]. [1,2]Surgery. [1]Kyabirwa Surgical Center, Jinja, Uganda, [2]Icahn School of Medicine at Mount Sinai, New York, New York.
5	**EXPLORING POSTNATAL SECONDARY X-INACTIVATION IN G6PD-DEFICIENT FEMALE HETEROZYGOTES.** **Ishani Bansal**, Bruce Gelb[1]. [1]Genetics and Genomic Sciences. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
6	**USE OF ULTRASOUND TO ASSESS VISCERAL AND SUBCUTANEOUS ADIPOSITY IN PATIENTS WITH IBD: A RELIABLE ALTERNATIVE TO CROSS-SECTIONAL IMAGING.** **Emma Breber**, Justin Tiao[1], Stephanie Gold[2]. [1]Medical Education, [2] Gastroenterology. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.
7*	**ASSOCIATION BETWEEN DIABETES AND OCULAR SURFACE DISEASE IN OLDER ADULTS: A MEDICARE POPULATION STUDY.** **Adeline Choo**[1], Marissa Patel[2], Janek Klawe[2], Sumayya Ahmad[2]. [1]Medical Education, [2]Ophthalmology. [1]Icahn School of Medicine at Mount Sinai, New York, New York, [2]Mount Sinai Hospital, New York, New York.

8	**ARE WE LEAVING GOOD LUNGS BEHIND? REGIONAL VARIATION IN DONOR LUNG UTILIZATION DESPITE COMPARABLE DONOR QUALITY.** **Cristina Cusmai**, Anne Montal[1], Tahir Malik[2], Chang Li[2], Daniel Laskey[1], Harish Seethamraju[2], Scott Scheinin[1]. [1]Thoracic Surgery, [2]Medicine. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.
9	**ASSOCIATION BETWEEN PORTABLE QUANTITATIVE ULTRASOUND TIBIAL T-SCORES AND INTRAOPERATIVE BONE QUALITY ASSESSMENT DURING TOTAL KNEE ARTHROPLASTY.** **Sophie deBettencourt**, Diego Garcia[1], Bryce Michael[1], Savyasachi Thakkar[2]. [1]Medical Education, [2]Orthopaedics. [1]University of Arizona College of Medicine - Tucson, Tucson, Arizona, [2]Johns Hopkins University School of Medicine.
10	**GOVERNING AI IN MEDICAID: BALANCING INNOVATION, OVERSIGHT, AND EQUITY.** **Shreya Deshmukh**, Tyree Williams[1], Margaux Thompson[2], Adimika Meadows Arthur[2]. [1,2]Discovery & Innovation Hub. [1]Icahn School of Medicine at Mount Sinai, New York, New York, [2]HealthTech for Medicaid (HT4M).
11*	**A FOUR HIT MECHANISM IS SUFFICIENT FOR MENINGIOMA DEVELOPMENT.** **Alex Devarajan**, Carina Seah[1], Jack Zhang[2], Vikram Vasan[1], Rui Feng[2], Emily Chapman[2], Tomoyoshi Shigematsu[2], Joshua Bederson[2], Raj Shrivastava[2]. [1]Medical Education, [2]Neurosurgery. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.
12	**ASSESSING PROVIDER ATTITUDES AND TRAINING NEEDS IN SPIRITUAL CARE: A SURVEY OF A STUDENT-RUN FREE CLINIC.** **Moitrayee Dhar**, Christian Porras[1], Jacob Appel[1]. [1]Psychiatry. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
13	**EXPOSURE INTENSITY SHAPES TRENDS IN THYROID DISEASE DIAGNOSIS AMONG 9/11 RESCUE AND RECOVERY WORKERS.** **Henry Diamond-Pott**, Mathilda Monaghan[1], Maaike van Gerwen[1]. [1]Otolaryngology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
14	**TRENDS IN THYROID DISEASE DIAGNOSES AMONG WORLD TRADE CENTER-EXPOSED INDIVIDUALS (2011-2023).** **Henry Diamond-Pott**, Mathilda Monaghan[1], Maaike van Gerwen[1]. [1]Otolaryngology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.

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16	**EARLY, FULL POSTOPERATIVE WEIGHT BEARING DOES NOT ADVERSELY AFFECT OUTCOMES AFTER MPFL-TTO: DATA FROM THE JUPITER COHORT.** **Francesca Docters**, Honor Paine[1], Audrey Wimberley[1], Matthew Veerkamp[2], Michelle Kew[1], Elizabeth Dennis[3], Beth Shubin Stein[1]. [1,2,3]Orthopaedics. [1]Hospital for Special Surgery, [2]Cincinnati Children's Hospital Medical Center, [3]Icahn School of Medicine at Mount Sinai, New York, New York.
17	**PREDICTORS OF LACKING A PRIMARY CARE PROVIDER AMONG PATIENTS AT A HIGH-VOLUME URBAN OPHTHALMOLOGY CENTER.** **Aditi Doiphode**, Manav Midha[1], Carolyn Lai[1], Gareth Lema[1]. [1]Ophthalmology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
18	**A RITLECITINIB (JAK3/TEC INHIBITOR) IN CICATRICIAL ALOPECIA: A PILOT STUDY OF SAFETY AND CLINICAL AND BIOMARKER RESPONSE.** **Princess Edemobi**, Megan Lau[1], Ester Del Duca[1], Jacob Fielder[1], Anusha Pasumarthi[1], Yeriel Estrada[1], Jerry Zhou[1], Elizabeth Andres[1], Joel Correa Da Rosa[1], Juliana Pulsinelli[1], Akbobek Amangeldiyeva[1], Benjamin Ungar[1], Emma Guttman-Yassky[1]. [1]Dermatology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
19	**PRELIMINARY ASSOCIATIONS BETWEEN SOCIAL COHESION AND HEALTHCARE UTILIZATION AMONG ADULTS WITH CHRONIC ILLNESS FROM THE PREDICTING RISK AND INVESTIGATING OUTCOMES USING PATIENT REPORTED AND COMMUNITY LEVEL DATA (PRIORITY) COHORT.** **Caleb Ellis**, Christopher Lopez[1], Andrew Maroko[1], Lauren Gordon[2], Marcee Wilder[2], Lynne Richardson[2]. [1]Population Health Science and Policy, [2]Emergency Medicine. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.
*20**	**DECREASED ROBOT-RELATED COMPLICATIONS FOLLOWING THE DEVELOPMENT AND ADOPTION OF A STANDARDIZED SAFETY PROTOCOL.** **Suhas Etigunta**, David Skaggs[1], Terrence Kim[1]. [1]Orthopaedics. [1]Cedars Sinai, Los Angeles, CA.

21	**CANCER PREVENTION ON LABOR AND DELIVERY: MISSED OPPORTUNITIES, AND MORE LIKELY MISSED FOR SOME.** **Nina Faynshtayn**, Aashna Saini[1], Jo Hsuan Lee[1], Guillaume Stoffels[1], Stephanie Blank[1]. [1]Obstetrics, Gynecology, and Reproductive Science. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
22	**AGE-STRATIFIED YIELD OF HATTR SCREENING AMONG V122I CARRIERS: EVIDENCE SUPPORTING TARGETED SCREENING IN OLDER INDIVIDUALS.** **Ezra Feder**, Alexander Kim[1], Lili Chan[2], Girish Nadkarni[2], Ron Do[1]. [1]Genetics and Genomic Sciences, [2]Medicine. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.
23	**IMMUNE CHECKPOINT INHIBITOR TREATMENT IN MUCOSAL MELANOMA: A RETROSPECTIVE ANALYSIS OF THE NATIONAL CANCER DATABASE.** **Olivia First**, Maaike van Gerwen[1]. [1]Otolaryngology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
24	**ASSOCIATION BETWEEN CTDNA KINETICS AND OVERALL SURVIVAL IN PATIENTS WITH UROTHELIAL CANCER.** **Annabelle Freilich**, Alexander Karol[1], Lexi Weintraub[1], Anna Argulian[2], Ruveyda Ayasun[1], Thomas Otten[2], Lydia Wu[2], Erin Heath[1], Joshi Himanshu[3], Teja Ganta[1], Saad Atiq[1], Jon Anker[1], Matthew Galsky[1], Eric Miller[1]. [1]Oncological Sciences, [2]Medical Education, [3]Population Health Science and Policy. [1,2,3]Icahn School of Medicine at Mount Sinai, New York, New York.
25	**CHRONIC PERIOPERATIVE GLUCAGON-LIKE PEPTIDE-1 RECEPTOR AGONIST USE AND SURGICAL OUTCOMES IN PATIENTS WITH OBESITY UNDERGOING ROBOTIC UROLOGIC SURGERY: A PROPENSITY SCORE-MATCHED ANALYSIS.** **Michael Gallagher**, Cara Wong[1], Jonathan Huynh[2], Julian Snyder[2], Michael Palese[3]. [1, 2]Medical Education, [3]Urology. [1]Rutgers School of Medicine, Newark, New Jersey, [2,3]Icahn School of Medicine at Mount Sinai, New York, New York.

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27	**DETECTION OF PROSTATE CANCER RELATED GENE SIGNATURES FROM SKIN TAPE STRIP USING RNA-SEQ.** **Anudeep Golla**, Jonathan Bar[1], Emma Guttman-Yassky[1]. [1]Dermatology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
28	**AURICULAR NEUROMODULATION AND SURGICAL CONDITIONS DURING FUNCTIONAL ENDOSCOPIC SINUS SURGERY (FESS).** **Eric Gong**, Daniel Katz[1]. [1]Anesthesiology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
29	**LINKING THE EFFECTS OF DIET AND MICROBIOME TO SYMPTOMS OF SCHIZOPHRENIA.** **Ashley Guo**, Jakleen Lee[1], Jose Clemente[1]. [1]Genetics and Genomic Sciences. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
*30**	**A COMPARATIVE STUDY OF NON-OPERATIVE AND OPERATIVE APPROACHES OF NON-ODONTOID UPPER CERVICAL FRACTURES IN ELDERLY PATIENTS.** **Sri Guttikonda[1]**, Saad Chaudhary[2]. [1]Medical Education, [2]Orthopaedics. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.
31	**SLEEP–IBD BELIEFS AS DRIVERS OF SLEEP MEDICATION USE: A CROSS-SECTIONAL SURVEY STUDY.** **Juhana Habib[1]**, Tim Hewitt[2], Laurie Keefer[3], Robert Hirten[2], Hyder Said[2]. [1]Medical Education, [2]Medicine, [3]Psychology. [1,2,3]Icahn School of Medicine at Mount Sinai, New York, New York.
32	**IS THERE A LINK BETWEEN YOLK SAC DIAMETER AND PREGNANCY LOSS IN SINGLE EUPLOID EMBRYO TRANSFERS?** **Alexis Hatch[1]**, Carlos Hernandez-Nieto[2]. [1]Medical Education, [2]Obstetrics, Gynecology, and Reproductive Science. [1]Icahn School of Medicine at Mount Sinai, New York, New York, [2]RMA of New York.

33*	**AGE-RELATED BONE LOSS IN MOUSE LUMBAR VERTEBRAE IS AFFECTED BY REGION, SEX, AND LEVEL: IMPLICATIONS FOR SPINAL LOADING AND ANALYSIS METHODS.** **Charu Jain**[1], James Iatridis[2]. [1]Medical Education, [2]Orthopaedics. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.
34	**REGIONAL SELECTIVITY OF PITUITARY ADENOMA-INDUCED CORTICAL CHANGES MAPS TO GLIAL AND ENDOTHELIAL SIGNATURE.** **Matt Jogodnik**, Alex Devarajan[1], Mackenzie Herb[2], Alan Seifert[2], Bradley Delman[3], Priti Balchandani[2], Joshua Bederson[1], Raj Shrivastava[1]. [1]Neurosurgery, [2] Biomedical Engineering and Imaging Institute, [3]Radiology. [1,2,3]Icahn School of Medicine at Mount Sinai, New York, New York.
35	**FERTILITY OUTCOMES POST-UTERINE ARTERY EMBOLIZATION FOR UTERINE ARTERIOVENOUS FISTULA.** **Junwon Kim**, Ariana Mills[1], Farnaz Dadrass[1], Vivian Bishay[1], Aaron Fischman[1], Dan Shilo[1], Jenanan Vairavamurthy[1], Brett Marinelli[1], Rahul Patel[1], Edward Kim[1], Rajesh Patel[1], Scott Nowakowski[1], Robert Lookstein[1], Kirema Garcia-Reyes[1]. [1]Radiology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
36	**EVALUATION OF FACTORS AFFECTING OPHTHALMOLOGIC FOLLOW-UP ATTENDANCE AFTER TELERETINAL SCREENING FOR DIABETIC RETINOPATY.** **Cara Kizilbash**, Meenakashi Gupta[1]. [1]Ophthalmology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
37	**“THEY GIVE YOU A KIND OF STRENGTH": PERINATAL SUPPORT NEEDS AND TAILORING DOULA SUPPORT FOR BIRTHING PEOPLE EXPERIENCING HOUSING INSECURITY IN NEW YORK CITY.** **Shivani Kulkarni**, Krupa Harishankar[1], Alva Rodriguez[2], Kanwal Haq[2], Sarah Nowlin[2], Natalie Boychuk[3], Teresa Janevic[4], Sheela Maru[1]. [1]Obstetrics, Gynecology, and Reproductive Science, [2]Population Health Science and Policy, [3,4]Public Health. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York, [3]Columbia Mailman School of Public Health, New York, NY, [4]Columbia Mailman School of Public Health.
38	**CARDIO-METABOLIC AND RENAL BIOMARKERS ARE ASSOCIATED WITH RETINAL STRUCTURE, FUNCTION AND MICROVASCULATURE IN PATIENTS WITH PRIMARY OPEN ANGLE GLAUCOMA.** **Minwoo Kwon**, Alice Verticchio[1], Samuel Potash[1], Jacob Rothstein[2], Keren Wood[1], Gal Cohen[1], Brent Siesky[1], Alon Harris[1]. [1]Ophthalmology, [2]Orthopaedics. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.

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40	**TAPE STRIPS REVEAL MULTIAXIAL IMMUNE ACTIVATION AND AGE-DEPENDENT BARRIER DYSFUNCTION IN SOUTHEAST ASIAN ATOPIC DERMATITIS PATIENTS WITH MULTIOMICS MOLECULAR PROFILING.** **Katherine Langer**, Emma Guttman-Yassky[1]. [1]Dermatology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
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42	**STEREOTACTIC BODY RADIATION FOR HEPATOCELLULAR CARCINOMA IN PATIENTS WITH CHILD PUGH C CIRRHOSIS.** **Jayme Leschly[1]**, Drishti Panse[2], Michael Buckstein[2]. [1]Medical Education, [2]Radiation Oncology. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.
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44	**EXPLORING CORNEAL BIOMECHANICAL INFORMATION EMBEDDED IN GLAUCOMA POLYGENIC RISK SCORES.** **Sabrina Liu**, Sujai Jaipalli[1], Louis Pasquale[2]. [1]Medical Education, [2]Ophthalmology. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.

45	**COST AND CLINICAL OUTCOMES OF DIRECT-TO-IMPLANT VERSUS TWO-STAGE TISSUE EXPANDER BREAST RECONSTRUCTION IN PATIENTS WITH OBESTIY: A MATCHED COST ANALYSIS.** **Martha MacDonald**, Keisha Montalmant[1], Sahil Sharma[1], Sheuli Chowdbury[1], Katie Stark[1], Peter Taub[1], Peter Henderson[1]. [1] Plastic Surgery. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
46	**ASSOCIATION OF TIME OF DAY AND POST-OPERATIVE DELIRIUM USING CAM-S.** **Joshua Martins-Caulfield**, Stephanie-Dee Sarovich[1], Hajung Kim[1], Sumit Singh[1], Cecilia Canales[1]. [1]Anesthesiology. [1]University of California, Los Angeles.
47	**VALIDATION OF A TWO-STAGE QUESTIONNAIRE AND ACTIGRAPHY SCREENING FOR ISOLATED REM SLEEP BEHAVIOR DISORDER IN A MULTICENTER CASE-CONTROL COHORT.** **Caleb Massimi**, Giorgio Ricciardiello Mejia[1], Andre Metzger[2], Kang Hyun Ryu[1], Eva Grzegorczyk[1], Boris Gilyadov[1], Eliana Jacobs[1], Claudia Kunney[1], Ankit Parekh[1], Emmanuel Mignot[3], Fanny Elahi[1], Joe Winer[4], Kathleen L Poston[3], Andreas Brink-Kjær[5], Emmanuel During[1]. [1,3]Neurology, [2,4,5] Medical Education. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York, [3,4]Stanford University, Stanford CA, [5]Technical University of Denmark (DTU).
48	**PREDICTING RISK AND INVESTIGATING OUTCOMES USING PATIENT-REPORTED AND COMMUNITY LEVEL DATA (PRIORITY): PRELIMINARY ASSOCIATIONS BETWEEN DIAGNOSIS OF ASTHMA/COPD AND NEIGHBORHOOD VULNERABILITY AMONG ADULTS WITH CHRONIC ILLNESS.** **Shruti Mavuri**, Andrew Maroko[1], Christopher Lopez[2], Lauren Gordon[2], Marcee Wilder[2], Lynne Richardson[2]. [1]Population Health Science and Policy, [2]Emergency Medicine. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.
49	**RISK FACTORS FOR HERPES ZOSTER OPHTHALMICUS IN A MEDICARE POPULATION.** **Jai Mehrotra-Varma**, Sumayya Ahmad[1]. [1]Ophthalmology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
50	**IMPACT OF RADIATION THERAPY ON EXTRAOCULAR MUSCLE SIZE AND ORBITAL TISSUES.** **Kathleen Meininger**, Arvind Sommi[1], Evan Afshin[2], Ebrahim Elahi[3]. [1]Medical Education, [2,3]Ophthalmology. [1,3]Icahn School of Medicine at Mount Sinai, New York, New York, [2]SUNY Downstate.

51	**BUILDING EQUITY FROM WITHIN: EMPLOYEE LEVERAGED BUYOUTS AS A MEANS TO STABALIZE THE LONG-TERM SUPPORTS AND SERVICES INDUSTRY IN RESPONSE TO HR1.** **Andre Metzger**, Margaux Thompson[1], Adimika Meadows Arthur[1]. [1]Health Tech 4 Medicaid. [1]Health Tech 4 Medicaid.
52	**INVESTIGATING THE PREVALENCE AND PRESENTATIONS OF HYPERTENSION IN HYPERMOBILITY-ASSOCIATED DYSAUTONOMIA.** **Isabella Mirro**, Korinne Arenas[1], Isabelle Kornblau[2], Omar Al Dhyabi[1], Amy Kontorovich[1]. [1]Medicine, [2]Genetics and Genomic Sciences. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.
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55	**ASSESSING EFFICACY AND PROVIDER UPTAKE OF TARGETED PREP INITIATION ALERTS THROUGH ELECTRONIC MEDICAL RECORDS.** **Benjamin Nikitin[1]**, Max Luf[2], Eric Kutscher[2]. [1]Medical Education, [2]Medicine. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.
56	**STRICTURE CLASSIFICATION OF PEDIATRIC ESOPHAGEAL STRICTURES (SCOPES): A NOVEL TOOL TO PREDICT RESPONSE TO ENDOSCOPIC THERAPY.** **Brandon Oby**, Steven Staffa[1], Peter Ngo[2], Denis Chang[2], Michael Manfredi[3], Jessica Yasuda[2]. [1]Anesthesiology, [2,3]Pediatrics. [1,2]Boston Children's Hospital, [3]Children's Hospital of Philadelphia.

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58	**ALCOHOL USE DISORDER IS INDEPENDENTLY ASSOCIATED WITH ADVERSE OUTCOMES FOLLOWING OPERATIVE CRANIOFACIAL FRACTURE REPAIR.** **Kaan Oral**, Katherine Stark[1], Benjamin Boutselis[1], Martha MacDonald[2], Sheuli Chowdhury[2], Pater Henderson[2], Peter Taub[2]. [1]Medical Education, [2]Plastic Surgery. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.
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66*	**RACIAL & ETHNIC DISPARITIES IN ANALGESIC PRESCRIBING FOR OLDER ADULTS WITH CANCER BEFORE AND AFTER THE 2016 CDC GUIDELINE.** **Elizabeth Rueppel[1]**, Lihua Li[2], Melissa Aldridge[2], Karen McKendrick[2], Sean Morrison[2], Rebecca Rodin[2]. [1]Medical Education, [2]Geriatrics and Palliative Medicine. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.
*67	**HIGH SATISFACTION, DIFFERENT PRIORITIES: PATIENT VALUATION OF LABOR EPIDURAL ANALGESIA OUTCOMES.** **Diana Ruiz**, Daniel Katz[1]. [1]Anesthesiology. [1]Icahn School of Medicine at Mount Sinai, New York, New York. Mentor: Daniel Katz, MD.
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79	**SKIN CANCER AMONG US VETERANS: PREVALENCE, RISK FACTORS, AND PROTECTIVE BEHAVIORS, 2000-2018.** **Vineeth Vaidyula**, Sunna Hannesdottir[1], Jonathan Ungar[2], Jesse Lewin[2], Nicholas Gulati[2], Jonas Adalsteinsson[3]. [1,2,3]Dermatology. [1]Landspitali University Hospital, Reykjavik, Iceland, [2]Icahn School of Medicine at Mount Sinai, New York, New York, [3]Landspitali University Hospital, Reykjavik, Iceland; Faculty of Medicine, University of Iceland, Reykjavik, Iceland.
80	**COMPLICATIONS OF LUMBAR SPINE EPIDURAL STEROID INJECTIONS: INCIDENCE AND RISK FACTORS.** **Luca Valdivia**, Mayuri Jain[1], Olgerta Mucollari[2], Charu Jain[2], Brocha Stern[1], Saad Chaudhary[2]. [1]Population Health Science and Policy, [2]Orthopaedics. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.
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87	**ANALYSIS OF CONTRIBUTING FACTORS TO AUTONOMIC DYSFUNCTION IN PEOPLE WITH HIV.** **Alan Zhang**, Mitali Mehta[1], Jessica Robinson-Papp[1]. [1]Neurology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
88	**OPTIMIZING MRNA-LNP CANCER VACCINES WITH MIRNA TARGETING TECHNOLOGY.** **Andrew Zhu**, Sophia Siu[1], Filippo Bianchini[1], Adam Marks[1], Brian Brown[1]. [1]Genetics and Genomic Sciences. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
89	**THE IMPACT OF BILIATRESONE AND MANNOSE ON HEPATIC STELLATE CELL STRESS AND ACTIVATION.** **Gillian Zipursky**, John Hong[1], Poulomi Dey[1], Charles DeRossi[1], Jaime Chu[1]. [1]Pediatrics. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
90	**STRENGTH TRAINING AND INJURY PREVENTION IN US FENCERS.** **Colson Zucker**, Katharine Holmes[1], Alexis Colvin[2]. [1]Medical Education, [2]Orthopaedics. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.
91	**PERIOPERATIVE POTASSIUM CHANGES FOLLOWING SINGLE-UNIT IRRADIATED RED BLOOD CELL TRANSFUSIONS IN SURGICAL PATIENTS.** **Lara Shqair**, Ryan F. Wang[1]. [1]Anesthesiology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.

SECTION 2:
Abstracts

Note: Medical students' name is the first author and the last author is the mentor.

ABSTRACT 1

ARTIFICIAL INTELLIGENCE CARDIAC VIEW CLASSIFICATION AND IMAGE-LEVEL DEIDENTIFICATION IN PEDIATRIC AND CONGENITAL ECHOCARDIOGRAMS.

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Artificial intelligence applied to echocardiography (AI-ECHO) can enhance clinical decision-making and broaden access to expert-level interpretation. In practice, however, pediatric and congenital AI-ECHO tools are limited by the complexity of study acquisition, which includes about 100 moving or still-frame images from unique anatomic planes of the heart (“cardiac views”). Accurate view-classification is therefore a critical first step in the development of reliable AI-ECHO algorithms. Given that existing publicly available view-classification algorithms are trained on adult echocardiograms, we assessed the performance of an externally developed deep learning model to determine its ability to classify pediatric and congenital echocardiographic views. We annotated the cardiac view of 9,610 image/videos (112 unique studies) into 68 view classes, 16 classes of which overlapped with the external algorithm. This resulted in 312 labeled samples for view-classification testing. The overall macro-averaged top-1 accuracy was 18%, with the parasternal short axis view of the aortic valve and the parasternal long axis reference view achieving over 80% accuracy. Most views were misclassified as “Other”. These findings underscore the need for publicly available pediatric-specific view-classification models, as adult-trained algorithms are inaccurate and lack appropriate class diversity needed for pediatric use. In parallel, we internally developed a de-identification algorithm to remove pixel-level patient health information (“burned-in” PHI) from ultrasound images using DICOM meta-data. We evaluated the de-identification algorithm on 10,057 images across 19 ultrasound models and 8 manufacturers. Only 0.08% of reviewed images contained residual PHI due to unexpected formatting, which was corrected through iterative updates to the method. Our echocardiogram-specific ultrasound de-identification algorithm can standardize image preprocessing, enhance inter-institutional data sharing, and prevent PHI leaks into future AI model training sets.

ABSTRACT 2

VERTEBRAL BODY TETHERING FOR ADOLESCENT IDIOPATHIC SCOLIOSIS IN SKELETALLY MATURE PATIENTS: MID-TERM OUTCOMES AT 52 MONTHS.

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Vertebral body tethering (VBT), originally developed as a growth-modulating treatment for immature adolescent idiopathic scoliosis (AIS), preserves motion and may reduce perioperative morbidity compared to fusion. We evaluated whether VBT provides durable curve control in skeletally mature AIS patients. We hypothesized that VBT would maintain correction at mid-term follow-up without high rates of revision or major complications.

Methods: This retrospective, single-surgeon cohort included 70 skeletally mature AIS patients (Risser ≥4 and/or Sanders ≥6 or PHOS ≥4) who underwent VBT with ≥3-year radiographic follow-up. Inclusion criteria included main thoracic (MT) curve ≤65° or thoracolumbar/lumbar (TL/L) ≤70°. Clinical and radiographic parameters were recorded preoperatively, first-erect, and at latest follow-up. Successful outcome was defined as maintenance of correction without conversion to fusion and final major curve ≤35°. Within-patient changes were analyzed using paired t-tests.

Results: Mean age 18.6±6.1 years; FU 52.9±12.6 months; 80.0% female; thoracic-major (TM) curves 54.3%. Instrumentation was unilateral in 68.6% and bilateral in 31.4%; dual-row tethers were used in 64.3% (55.6% TL/L major, 44.4% TM). Preoperative major curve (PreMC) 50.3°±7.0° improved to 29.0°±6.8° at final FU (42.3% correction; $p<0.0001$). Thoracic kyphosis and lumbar lordosis were preserved. TM (n=38): 51.7°±6.4°→31.0°±6.7° (40.0%; $p<0.0001$). TL/L major (n=32): 48.4°±7.8°→24.7°±7.1° (49.0%; $p<0.0001$). At final FU, 61.4% had all curves <30°, and 85.7% were ≤35°. Tether breakage (TB) occurred in 78.6% (mean 1.3 breaks/patient); however, no revisions were performed for TB, and most patients maintained acceptable alignment. Two major complications (2.9%) occurred, one pleural effusion and one chylothorax, both managed without reoperation. No neurological deficits, infections, or revision fusion were observed.

Conclusion: In this retrospective cohort of skeletally mature AIS patients, VBT provided durable curve control at a mean 52.9 months. Despite a high TB rate, most patients maintained acceptable alignment without reoperation, and major complications were uncommon (2.9%). These findings support the feasibility of VBT as a motion-preserving option in select mature patients. However, the absence of a fusion comparator, single-surgeon design, and retrospective methodology limit definitive conclusions. Prospective comparative studies with longer follow-up are warranted.

ABSTRACT 3

NEW ETHICAL AND LEGAL CHALLENGES IN THE USE OF EXTRA-CORPOREAL MEMBRANE OXYGENATION.

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Extra-corporeal membrane oxygenation, or ECMO, is a treatment modality originally derived from heart-lung bypass technologies, and adopted today for use in a variety of adult and pediatric critical care settings. As ECMO becomes more common worldwide, it is likely that ICU teams will encounter a situation of unilateral withdrawal of life-sustaining treatment (LST), when there is disagreement between the patient's surrogate decision-makers and the clinical team regarding the utility of continued treatment. With this ethical and legal challenge in mind, it is relevant to consider existing international legal frameworks for unilateral withdrawal of ICU care and to evaluate the ways in which ECMO challenges these precedents.

Methods: Pubmed, NexisUni Legal, and internet search were utilized to find peer-reviewed journal articles, news, legal analysis, appellate case law, and educational presentations addressing existing legal precedent in the unilateral withdrawal of life-sustaining treatment. Pubmed was utilized to find peer-reviewed journal articles on the technical aspects of modern ECMO.

Discussion: In the United Kingdom, ethicists contend that disability justice approaches cast uncertainty on advance directives and highlight physicians' inherent biases. The Scottish legal system places a higher value on patient autonomy and is less likely to support physicians in an outright conflict between patient and provider. Australian and New Zealand case law demonstrates great deference toward physician perspectives. Canadian scholars highlight the legal gaps and encourage more legislation. Islamic philosophy teaches the value of each human life and strongly discourages withdrawal of care.[7] Scoping reviews of European practices indicate that Southern and Eastern Europe have higher withholding and low withdrawal rates, and that Jewish and Greek Orthodox physicians are more likely to withhold than withdraw. The legal landscape in the United States is highly fragmented by state, with Texas passing the only comprehensive legislation outlining a process for unilateral withdrawal of LST. United guidelines from critical care societies in 2015 encourage a standardized approach for providers. ECMO as a developing and transformative ICU technology may require providers to reconsider existing legal and ethical frameworks for initiation and withdrawal decisions.

ABSTRACT 4

DEMOGRAPHIC DIFFERENCES BETWEEN PATIENTS ATTENDING FREE HERNIA CAMPS AND FEE-BASED SURGICAL SERVICES AT KYABIRWA SURGICAL CENTER (KSC) IN JINJA, EASTERN UGANDA.

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In low and middle income countries (LMICs), a significant unmet demand exists for surgical care. Free surgical camps are frequently used to address this gap, yet limited data exist on the demographics of patients who access these services compared to those seeking fee based care. It remains unclear whether free hernia camps reach distinct or more vulnerable populations or whether barriers such as limited outreach and awareness exclude certain groups. This study aimed to assess demographic differences between all patients attending free hernia camps and those seeking fee based inguinal hernia repair at Kyabirwa Surgical Center (KSC) in Jinja, Eastern Uganda.

Methods: Demographic data was collected from patients attending the June 2023 free hernia camp at KSC via a standardized questionnaire on the day they were booked for surgery, and data were entered into the center's electronic medical record system. Comparable data for fee based inguinal hernia repairs was obtained through retrospective chart review for March to May 2023 and May to July 2022 using the same system. All data was de identified prior to analysis. A total of 424 patients were included, with 298 from the free hernia camp, 129 fee based patients from 2022, and 87 from 2023. Multivariate analysis was performed using SPSS.

Results: The free hernia camp in June 2023 resulted in a 727% increase in surgical volume compared to average non camp months. Seventy percent of patients were male, and 45 percent were over the age of 50. The no show rate was higher among free camp patients compared to fee based patients (13.7% versus 5.38%). No statistically significant differences were observed between groups in age, sex, marital status, education level, district, or ethnicity ($p > 0.05$). A significant difference was noted in occupation, with free camp patients more likely to engage in manual labor ($p < 0.001$). Differences were also observed in how patients learned about the surgical center and the free hernia camp ($p = 0.005$).

Conclusions: Free surgical camps in rural LMICs substantially increase access to surgical care but largely serve populations demographically similar to those accessing fee based services. Differences in occupation and outreach method influences care seeking behavior, and higher no show rates among free camp patients highlight the need for improved patient engagement strategies. These findings can inform more equitable and effective surgical outreach programs.

ABSTRACT 5

EXPLORING POSTNATAL SECONDARY X-INACTIVATION IN G6PD-DEFICIENT FEMALE HETEROZYGOTES.

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X-chromosome inactivation is established early in mammalian female development, producing mosaic expression of X-linked genes. Recent studies suggest that postnatal clonal selection may lead to secondary skewing of X-inactivation over time. Glucose-6-phosphate dehydrogenase (G6PD) deficiency, an X-linked recessive enzymatic disorder classically associated with hemolytic anemia, provides a natural model to study age-related changes in cellular lineage dominance. Hematologic traits in female heterozygotes therefore offer a window into postnatal secondary X-inactivation.

Hypothesis: We hypothesized that female heterozygotes exhibit greater phenotypic variability due to age-dependent secondary skewed X-chromosome inactivation.

Methods: We analyzed longitudinal hematocrit measurements, which decrease in G6PD deficiency and vary with age in females. Individuals with ≥10 years of hematocrit data and ≥1 measurement between ages 40–60 were included and stratified as female affected (n=46), heterozygotes (n=610), and controls (n=12,614). For each individual, we calculated the slope of hematocrit versus age and visualized slope distributions using kernel density estimation.

Results: Controls exhibited a tightly clustered slope distribution (mean KDE peak density 1.88 ± 0.09), whereas heterozygotes demonstrated a lower peak density (1.59), reflecting a more dispersed slope distribution. Across 1000 bootstrap resamples (n = 610 each), 100% of control peak densities exceeded the heterozygote peak density, indicating this difference is unlikely due to sampling variability. This increased dispersion is consistent with secondary X-inactivation, in which differing proportions of G6PD-deficient versus normal erythropoietic lineages accumulate with age.

Conclusion: These findings provide evidence for postnatal secondary X-inactivation in driving hematologic variability among female heterozygotes.

ABSTRACT 6

USE OF ULTRASOUND TO ASSESS VISCERAL AND SUBCUTANEOUS ADIPOSITY IN PATIENTS WITH IBD: A RELIABLE ALTERNATIVE TO CROSS-SECTIONAL IMAGING.

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Body mass index (BMI) is an imprecise marker of adiposity in patients with inflammatory bowel disease (IBD) and does not reliably correlate with disease complications. Recent studies have identified that increased visceral adiposity (VAT) is associated with poor response to advanced therapies, increased disease flares and poor surgical outcomes. While VAT is traditionally assessed on cross-sectional imaging, this approach can delay clinical decision making. Ultrasound (US) has been validated in other clinical populations as a rapid, inexpensive, and noninvasive technique to assess VAT. Therefore, the aim of this study is to assess the reliability of US to measure adiposity, comparing VAT and subcutaneous fat (SAT) on US with cross-sectional imaging in patients with IBD.

Methods: Adult patients with IBD and cross-sectional imaging within 90 days of the US were prospectively enrolled. All participants underwent US using a Samsung RS85 US. SAT was defined as the distance from the skin to the anterior linea alba and was measured using a LA2-14A probe 1 cm below the xiphoid process (minimal SAT: minSAT) and 1 cm above the umbilicus (maximal SAT: maxSAT). VAT was defined as the distance from the linea alba to the anterior aortic wall and was measured with a CA3-10A probe 1 cm above the umbilicus. Cross-sectional imaging measurements were extracted from Spectra PACS using electronic calipers and anatomic landmarks as above. VAT was measured at the L3 vertebral level. Correlations between US and imaging were evaluated using Pearson's correlation coefficients.

Results: A total of 65 patients with IBD underwent assessment of VAT and SAT on US after cross-sectional imaging with an average age of 46 years, 37 women (57%), and 48 (74%) had a diagnosis of Crohn's disease. All measurements demonstrated strong correlations between US and cross-sectional imaging: minSAT: r=0.93, maxSAT: 0.91, VAT: r=0.80. These relationships were consistent across BMI categories, IBD phenotype and type of cross-sectional imaging.

Conclusion: US is a highly reliable technique to assess SAT and VAT in patients with IBD, strongly correlating with cross-sectional imaging. These findings support the use of US as a rapid, non-invasive and inexpensive technique to assess VAT in the clinic. Given the association of increased VAT with poor IBD outcomes, incorporation of US to assess VAT routinely may enable earlier risk stratification and timely interventions to improve care.

ABSTRACT 7

ASSOCIATION BETWEEN DIABETES AND OCULAR SURFACE DISEASE IN OLDER ADULTS: A MEDICARE POPULATION STUDY.

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Purpose: Ocular surface disease (OSD) can cause ocular discomfort and visual disturbance but is often underappreciated in the diabetic population. Given the high and rising prevalence of diabetes in adults over the age of 65, understanding the association between diabetes and OSD is important for ophthalmologic care in older adults. We aim to quantify the odds of having OSD in patients with diabetes compared to those without.

Methods: We conducted a cross-sectional analysis of a random sample of 5% of Medicare beneficiaries from 2011 to 2015. The primary exposure was diabetes status at the first recorded visit, and the outcome was the presence of OSD, which were categorized into three clinically relevant groups for analysis: group A (tear film dysfunction and surface irritation), group B (inflammation of the cornea or conjunctiva), and group C (disorders secondary to infection or neuropathy). Multivariate logistic regression models assessed the association between diabetes and OSD, adjusting for age, sex, and race.

Results: We identified 1,618,098 Medicare beneficiaries for inclusion in the analysis. In adults ≥ 65 years old, diabetes was associated with over twice the odds (OR, 2.17 [95% CI 2.14, 2.20]) of having OSD, an association that holds true for Group A (OR, 2.16 [95% CI 2.12, 2.19]), Group B (OR, 2.30 [95% CI 2.11, 2.51]), and Group C (OR, 2.23 [95% CI 2.06, 2.41]) OSDs. Of the OSDs included for analysis, dry eye disease (DED) represented the majority of observed cases, and diabetes was associated with over twice the odds (OR, 2.15 [95% CI 2.12, 2.18]) of having DED.

Conclusions: Diabetes is significantly associated with the presence of comorbid ocular surface disease in older adults. These findings highlight the need for broader clinical focus on eye conditions in older diabetic patients beyond diabetic retinopathy. Future studies should aim to examine longitudinal associations between diabetes and ocular surface disease risk and to examine possible protective factors and the impact of diabetic treatment on ocular disease outcomes.

ABSTRACT 8

ARE WE LEAVING GOOD LUNGS BEHIND? REGIONAL VARIATION IN DONOR LUNG UTILIZATION DESPITE COMPARABLE DONOR QUALITY.

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In 2023, only 18% of deceased donor lungs were transplanted, underscoring persistent underutilization. Despite emphasis on donation after circulatory death, discard among donation after brain death (DBD) donors remains substantial, with 130,671 DBD lungs discarded over two decades. The United Network for Organ Sharing (UNOS), which administers the U.S. Organ Procurement and Transplantation Network (OPTN), demonstrates regional variation in lung utilization, with Region 9 consistently reporting lower rates. We hypothesized that reduced utilization in Region 9 would not be explained by measurable donor quality and may reflect regional acceptance practices.

We performed a retrospective cohort study of thoracic DBD donors (2000–2024) using the OPTN Standard Transplant Analysis and Research (STAR) database. Donors with known lung disposition and UNOS region were included (N=203,019). The exposure was donor region (Region 9 vs others); the outcome was transplantation versus discard. Donor factors included demographics, comorbidities, smoking history, mechanism of death, PaO2, and radiographic findings, reflecting commonly used lung viability criteria. Lung quality was assessed using multivariable models that incorporated these factors. Associations between donor factors, region, and transplantation were evaluated using univariate and multivariable logistic regression; regional effects were interpreted as associative.

After adjustment, Region 9 had the lowest odds of transplantation ($p<0.001$) despite comparable measured donor characteristics, and characteristics of transplanted lungs were similar across regions. Higher oxygenation strongly predicted utilization; PaO2 ≥400 mmHg was associated with markedly higher odds of transplantation (OR 83.1, 95% CI 42–101), reflecting clinical selection preference rather than causality. Advanced donor age ≥65 years (OR 0.10, 95% CI 0.09–0.11), pulmonary infection (OR 0.59, 95% CI 0.56–0.63), abnormal chest radiograph (OR 0.38, 95% CI 0.33–0.46), and cigarette use (OR 0.41, 95% CI 0.39–0.44) reduced odds of transplant.

Region 9 consistently demonstrates lower utilization without evidence of poorer donor quality, suggesting that factors beyond donor characteristics contribute to this variation. These findings are associative and may reflect unmeasured center-level practices, acceptance thresholds, or logistical constraints. Standardizing donor evaluation and acceptance practices may help expand use and reduce avoidable discard.

ABSTRACT 9

ASSOCIATION BETWEEN PORTABLE QUANTITATIVE ULTRASOUND TIBIAL T-SCORES AND INTRAOPERATIVE BONE QUALITY ASSESSMENT DURING TOTAL KNEE ARTHROPLASTY.

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Introduction: Bone quality is an important factor in determining fixation strategy during total knee arthroplasty (TKA), yet dual-energy X-ray absorptiometry (DEXA) is underutilized and rarely provides site-specific tibial assessment. Portable quantitative ultrasound (QUS) offers an accessible method to estimate tibial bone mineral density (BMD) and guide surgeon fixation choice. This study evaluated the association between tibial T-scores obtained using a QUS device and a novel intraoperative physician assessment (IPA) score in adults undergoing TKA.

Methods: Patients undergoing primary TKA at a single institution were identified, and preoperative tibial BMD was assessed using portable QUS (Sunlight MiniOmni) at the operative tibia and categorized as normal, osteopenic, or osteoporotic by T-score. Surgeons were blinded to QUS and recorded an IPA based on intraoperative cortical bone resistance on a 5-point scale. Spearman correlation assessed the association between tibial T-scores and IPA. Ordinal logistic regression evaluated the odds of higher cortical resistance per unit increase in T-score, with models adjusting for age, sex, body mass index, smoking status, and vitamin D supplementation. Multivariable linear regression examined the independent association between cortical bone resistance and tibial T-score.

Results: Tibial T-scores demonstrated a moderate correlation with IPA (Spearman's $p = 0.44$; $p = 0.0017$). Each 1-point increase in tibial T-score was associated with a two-fold increase in the odds of higher cortical bone resistance (OR 2.00, 95% CI 1.31-3.06. $p = 0.001$), which remained significant after multivariable adjustment. Higher cortical bone resistance was independently associated with higher tibial T-scores ($B = 0.55$, 95% CI 0.11-0.99, $p = 0.015$).

Discussion: Preoperative tibial T-scores obtained using a portable QUS device were significantly associated with intraoperative surgeon-assessed cortical bone resistance during TKA, supporting construct validity of QUS as a noninvasive tool for assessing bone quality. Larger studies are needed to determine whether QUS demonstrates sufficient diagnostic performance to guide clinical decision-making.

ABSTRACT 10

GOVERNING AI IN MEDICAID: BALANCING INNOVATION, OVERSIGHT, AND EQUITY.

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Artificial intelligence (AI) is rapidly integrating into Medicaid and other single-payer systems, promising efficiency while raising questions about governance, equity, and community trust. Despite expanding federal and international guidance on responsible AI, no Medicaid-specific framework operationalizes these principles within the legal and economic constraints of U.S. public insurance programs. As part of the HT4M 2025 Summer Fellowship, this project retrospectively identified gaps in AI governance relevant to Medicaid and developed a framework tailored to high-stakes systems serving structurally vulnerable populations.

We conducted a comparative policy analysis of 11 publicly available governance documents (2019 - 2025), including OECD, WHO, CHAI, NIST, GAO, OSTP, Medicaid-focused policy reports, legal advocacy frameworks, a federal judicial opinion, and CMS AI guardrails. Documents were selected using predefined inclusion criteria and coded across six governance domains: lifecycle oversight, transparency, fairness and bias mitigation, human review protections, redress mechanisms, and economic justification. Domain presence was coded dichotomously and descriptively analyzed. In parallel, we mapped the U.S. Medicaid AI landscape under federal deregulation, highlighting fragmented state experimentation and uneven safeguards. Scenario modeling of use cases examined trade-offs between administrative efficiency, coverage continuity, procedural due process, and beneficiary trust.

International and federal AI frameworks demonstrated broad governance coverage. In contrast, Medicaid-specific regulatory and operational materials exhibited narrower domain coverage, emphasizing equity principles without embedding lifecycle oversight, formal redress pathways, or economic evaluation. Judicial review reinforced the statutory centrality of coverage preservation and procedural accountability. Scenario modeling suggested short-term administrative savings may conflict with coverage stability and due process protections when safeguards are weak.

These findings indicate responsible AI deployment in Medicaid is fundamentally a governance choice rather than a technical feature. We propose a Medicaid-specific framework embedding procurement guardrails, piloting and fairness audits, mandatory human review for high-impact decisions, post-deployment equity tracking, and public reporting of performance and redress to ensure AI adoption advances equity, trust, and health outcomes.

ABSTRACT 11

A FOUR HIT MECHANISM IS SUFFICIENT FOR MENINGIOMA DEVELOPMENT.

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Purpose: Meningiomas are central nervous system tumors whose incidence increases with age. Benign meningioma pathogenesis involves germline or somatic mutation of target genes, such as NF2, leading to clonal expansion. We used an established cancer epidemiology model to investigate the number of rate-limiting steps sufficient for benign meningioma development.

Methods: Incidence data was obtained from the Surveillance, Epidemiology and End Results Program (SEER) for nonmalignant meningioma from 2004 to 2020. Age-adjusted incidence rates per 100,000 person-years were divided into 5-year bands. This was repeated for vestibular schwannomas as a negative control. The Armitage-Doll methodology was applied. Mathematical solutions correcting for volatile tumor microenvironments were applied to fit higher-order models using polynomial regression when appropriate. A 75:25 training:test split was utilized for validation.

Results: 222,509 cases of benign meningiomas were identified. We noted strong linear relationships between log-transformed incidence and age across the cohort and multiple subpopulations: male, white, black, Hispanic, Asian/Pacific Islander, and American Indian subpopulations all demonstrated $R^2 = 0.99$. Slopes were between 3.1 and 3.4, suggesting a four-step process for benign meningioma development. Female patients exhibited nonlinear deviations, but the corrected model demonstrated $R^2 = 0.99$ with a four-hit pathway. This model performed robustly on test data with R2 = 0.99. Vestibular schwannomas demonstrated a slope of 2.1 with $R^2 = 0.99$, suggesting a separate three-step process.

Conclusion: Four mutations are uniquely required for the development of benign meningiomas. Correcting for volatile tumor microenvironments reliably accounted for nonlinear deviations in behavior. Further studies are warranted to elucidate genomic findings suggestive of key mutations in this pathway.

ABSTRACT 12

ASSESSING PROVIDER ATTITUDES AND TRAINING NEEDS IN SPIRITUAL CARE: A SURVEY OF A STUDENT-RUN FREE CLINIC.

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Spirituality is increasingly recognized as a key component of patient well-being and a social determinant of health, yet it remains underutilized in routine care. Student-run free clinics that serve culturally diverse and underserved populations provide unique opportunities to explore how providers perceive and address spiritual needs.

Objective: To assess provider perceptions of spirituality, current spiritual care practices, and interest in training within the East Harlem Health Outreach Partnership (EHHOP), a student-run free clinic serving predominantly immigrant communities within East Harlem.

Methods: A cross-sectional survey was administered to all active EHHOP clinical providers. The survey, informed by items from the FICA Spiritual History Tool and Spiritual Care Competency Scale, evaluated (1) providers' personal views on spirituality, (2) the role of spirituality in clinical encounters, and (3) preferences for spiritual care interventions. Responses were collected using 5-point Likert scales and summarized descriptively.

Results: Fifty-two providers participated. Most providers perceived spirituality as highly relevant, citing that patients frequently mention beliefs and community connections. However, few providers routinely asked about spirituality or incorporated it into the care plan, with most reporting such behaviors as "rare" or "never." Engagement in specific spiritual care actions, such as praying with patients, responding to requests for prayer, contacting chaplains, or discussing spirituality, was similarly infrequent. Despite this practice gap, providers expressed strong enthusiasm for further education: the majority indicated interest in spiritual care training and rated several potential interventions (e.g., referrals to spiritual counselors, mindfulness sessions, spiritual screening questions) positively.

Conclusion: Providers recognize spirituality as relevant to patient well-being but infrequently address it in practice. Strong interest in training and support for low-resource interventions highlight an opportunity to strengthen spiritual care within student-run free clinics. Incorporating structured training and practical tools may enhance culturally responsive, patient-centered care for underserved populations.

ABSTRACT 13

EXPOSURE INTENSITY SHAPES TRENDS IN THYROID DISEASE DIAGNOSIS AMONG 9/11 RESCUE AND RECOVERY WORKERS.

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Rescue and recovery workers at the World Trade Center (WTC) were exposed to carcinogenic and endocrine-disrupting toxins after 9/11. Elevated thyroid cancer rates have been documented in this population, but how exposure intensity influences the trajectory of thyroid-related diagnoses over time is less understood. This study examines trends in thyroid-related diagnoses as they relate to overall exposure intensity and direct contact with the debris “pile.”

Methods: WTC Health Program members diagnosed after 2011 with thyroid cancer, thyroid disease, Hashimoto’s thyroiditis, or abnormal thyroid exams were included. Participants completed exposure questionnaires and provided consent for record review. Diagnosis rates were standardized to total clinic visits. Two exposure measures were evaluated: (1) lower vs. higher categories from an established four-level exposure model (Wisnivesky et al., 2011), and (2) a binary indicator of direct debris-pile contact. Joinpoint regression (NCI Joinpoint Regression Program) estimated annual percent change (APC) in diagnosis rates ($p < 0.05$).

Results: Diagnosis trajectories differed by exposure intensity. In the lower exposure group (n=279) rates rose from 2011–2014 (APC: 16.6%; $p = 0.36$) then significantly declined through 2023 (APC: −20.3%; $p < 0.001$). The higher exposure group (n=90) showed a modest, non-significant increase to 2018 (APC: 5.8%; $p = 0.45$), followed by a significant decline (APC: −32.8%; $p = 0.022$). Individuals directly exposed to the debris pile (n=153) experienced a steep rise from 2011–2014 (APC: 48.6%; $p = 0.066$) and a significant decline through 2023 (APC: −21.26%; $p = 0.002$). Those without pile exposure (n=224) had a gradual decline from 2011–2020 (APC: −7.8%; $p = 0.057$) and a sharp drop from 2020–2023 (APC: −37.7%; $p < 0.001$).

Conclusion: Thyroid-related diagnosis patterns varied by exposure intensity and type. Responders without pile exposure showed a delayed but sharp decline, while the lower exposure group had an early spike followed by sustained decreases. Pile-exposed individuals showed an early peak, whereas the higher exposure group peaked later, suggesting that pile exposure alone may not represent full exposure burden. Duration of work, recovery role, or dust conditions may have contributed to prolonged elevations in the higher exposure group. These findings highlight the need for continued long-term monitoring of WTC-exposed populations to clarify exposure-related risks to thyroid health.

ABSTRACT 14

TRENDS IN THYROID DISEASE DIAGNOSES AMONG WORLD TRADE CENTER-EXPOSED INDIVIDUALS (2011-2023).

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The 9/11 World Trade Center (WTC) attack exposed rescue and recovery workers to harmful toxins potentially linked to increased risk of thyroid disease. While elevated thyroid cancer rates have been reported, little is known about the development of other thyroid conditions. This study analyzed diagnosis trends since 2011 to better gauge the impacts of medical surveillance and exposure latency in a WTC-exposed cohort with thyroid disease.

Methods: The WTC Health Program database was used to identify individuals diagnosed with thyroid cancer, thyroid disease, Hashimoto's thyroiditis, or with abnormal thyroid exams after 2011, the first year of the WTC Health Program. Annual diagnosis rates were calculated using total WTC clinic visits per year. The general thyroid diagnosis cohort included all patients with any thyroid diagnosis; the thyroid cancer subgroup consisted only of patients with thyroid cancer. Joinpoint regression analysis identified significant inflection points and estimated annual percent change (APC) in diagnosis rates over time ($p < 0.05$).

Results: The general thyroid diagnosis cohort included 392 patients (mean age 39.9 years at exposure on 9/11/2001; mean age 52.3 years at diagnosis). From 2011 to 2014, diagnosis rates increased significantly with an APC of 16.1% (95% CI: 1.5% to 55.9%; $p = 0.032$). Between 2014 and 2021, rates declined significantly with an APC of -16.0% (95% CI: -19.9% to -10.2%; $p = 0.002$). After 2021, the decline accelerated with an APC of -37.5% (95% CI: -50.8% to -23.4%; $p < 0.001$). Subgroup analysis revealed 102 thyroid cancer cases (mean age 36.5 years at exposure; mean age 50.6 years at diagnosis). Thyroid cancer diagnosis rates increased modestly but non-significantly from 2011 to 2018 with an APC of 10.0% (95% CI: -6.0% to 146.4%; $p = 0.22$). After 2018, rates declined significantly at an APC of -33.0% (95% CI: -74.7% to -13.7%; $p = 0.007$).

Conclusions: Thyroid disease exhibited two inflection points with a peak in 2014 and an accelerated decline after 2021, while the thyroid cancer subgroup showed a later peak in 2018 with a subsequent decline. The delayed peak and decline in thyroid cancer diagnoses suggests the prolonged biological impact of environmental exposures and the impact of disease latency in diagnostic trends. Continued surveillance to monitor thyroid health is needed to better understand the long-term impacts WTC exposure.

ABSTRACT 15

ASSOCIATION BETWEEN HYPERTENSIVE DISORDERS OF PREGNANCY AND PRETERM NEONATAL RESPIRATORY OUTCOMES FOLLOWING BETAMETHASONE ADMINISTRATION.

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Objective: Betamethasone administration for pregnant patients at risk of preterm delivery has been shown to improve neonatal outcomes. Research also suggests that neonates who develop in a hypertensive environment may clinically differ from those born to patients without hypertension. There are limited studies analyzing how hypertensive disorders of pregnancy (HDP) influence neonatal outcomes after betamethasone administration. We hypothesized that there would be no difference in neonatal respiratory outcomes after betamethasone administration between patients with and without HDP.

Methods: This was a retrospective chart study of all patients delivering at a single academic institution in New York City from January 1, 2013 - December 31, 2023 who received two doses of betamethasone prior to delivery. We defined HDP as patients who had a diagnosis of gestational hypertension, preeclampsia with or without severe features, eclampsia, or HELLP. We assessed electronic medical records for clinical and demographic data. Our primary outcome was a neonatal respiratory composite (transient tachypnea of the newborn, respiratory distress syndrome, use of CPAP for > 12 hours, oxygen for > 24 hours, intubation, and/or surfactant). Multivariable logistic regression models controlling for potential confounders examined associations of HDP with neonatal respiratory outcomes.

Results: 2,638 patients were identified, of which 675 had HDP. Patients with HDP delivered neonates at lower birth weights and earlier gestational ages and were more likely to have other comorbidities. After controlling for confounders, neonates born to patients with any HDP had a higher likelihood of requiring CPAP for > 12 hours. Neonates of patients with pre-eclampsia with severe features, eclampsia, or HELLP had a higher likelihood of developing RDS and TTN, and requiring CPAP for >12 hours and oxygen for > 24 hours.

Conclusion: Neonates born to patients with more severe forms of HDP experienced worse respiratory outcomes than their counterparts, despite betamethasone administration.

ABSTRACT 16

EARLY, FULL POSTOPERATIVE WEIGHT BEARING DOES NOT ADVERSELY AFFECT OUTCOMES AFTER MPFL-TTO: DATA FROM THE JUPITER COHORT.

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Objectives: The timing of initial weightbearing (WB) postoperatively following medial patellofemoral ligament reconstruction and tibial tubercle osteotomy (MPFL-TTO) varies considerably among surgeons. The objective of this study is to directly compare complication rates and patient-reported outcomes (PROs) between early and delayed WB protocols following MPFL-TTO.

Methods: A prospective, multicenter cohort study (JUPITER: Justifying Patellar Instability Treatment by Results) database was queried for patients undergoing primary MPFL-TTO from 2017 through 2022. Participating surgeons completed a survey detailing their postoperative weightbearing protocols after MPFL-TTO. Patients were stratified into three groups based on the timing and percent WB permitted: Early (within 2 weeks postop) full WB (WBAT), early partial WB (PWB), and late (maintained nonweightbearing for ≥4 weeks) WB (NWB). Categorical variables were analyzed using the chi-square test or Fisher's exact test. Continuous variables were analyzed using one-way ANOVA or the Kruskal-Wallis test.

Results: A total of 232 patients were included, comprising 30 early WBAT, 65 early PWB, and 137 NWB. Patients were 74.6% female, 24.3 ± 4.8 (mean±SD) years old, with a BMI of 25.3 ± 6.6 kg/m^2. There was no difference in mean preop tibial tubercle-trochlear groove distance (p=0.23), trochlear depth index (p=0.21), and patellar tendon-lateral trochlear ridge distance (p=0.45) between the cohorts. There were 7 total complications reported by 1-year follow-up, which included 1 infection, 3 recurrent instability episodes, and 3 reoperations. There were no cases of osteotomy site fracture, displacement, or nonunion. At both 1-year and 2-year follow-up, there was no difference between WB groups across all PROs measured, including improvement in KOOS (p=0.10, p=0.16), IKDC (p=0.19, p=0.29), Kujala (p=0.08, p=0.26), and BANFF (p=0.08, p=0.17) scores. Multivariable linear regression analysis for BANFF scores controlling for demographic variables, preop radiographic measurements, and number of screws used intraoperatively to affix the osteotomy found no evidence to support postop weightbearing status is associated with change in BANFF scores from baseline to 1-year postop.

Conclusion: Early full weightbearing as tolerated following MPFL-TTO does not increase postop complication risk, specifically fracture or nonunion of the osteotomy site, or adversely affect short-term patient-reported outcomes at 2-year follow-up.

ABSTRACT 17

PREDICTORS OF LACKING A PRIMARY CARE PROVIDER AMONG PATIENTS AT A HIGH-VOLUME URBAN OPHTHALMOLOGY CENTER.

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Primary care providers (PCP) play a unique role in identifying early signs of ocular disease and preventing avoidable vision loss. Patients without a PCP may be particularly vulnerable to delayed diagnosis and advanced disease presentation. Ophthalmology specialty clinics represent an important opportunity to re-engage patients in primary care and improve management of both ocular and systemic conditions. This study aims to identify individual and community level predictors of lacking a documented PCP among patients presenting to the New York Eye & Ear Infirmary.

Methods: This study conducts a cross-sectional, retrospective analysis of 4,190 outpatient appointments scheduled at NYEE from March 15 to June 15, 2025. The primary outcome was documentation of a primary care provider (PCP) in the electronic health record, categorized as “yes” or “no.” A multivariate regression analysis was used to assess the associations between demographic factors (age, gender, insurance status, language preference), social vulnerability index score, and visual acuity with the likelihood of lacking a documented PCP.

Results: Among all patients seen in the ophthalmology clinic across this three-month period, 17.6% (n=736) of patients were reported to not have a PCP. In adjusted analysis, younger age (OR 1.01 per year decrease, $p<0.01$) and male gender (OR 0.69, $p<0.001$) were significantly associated with not having a PCP. Charity-care (OR 0.30, $p<0.001$) and self-pay (OR 0.25, $p<0.001$) status, were associated with a lower likelihood of having a PCP, whereas Medicare status was associated with higher odds of having a PCP (OR 1.44, $p<0.01$). Preferred language, social vulnerability score, and visual acuity were not significant predictors of a documented PCP.

Conclusion: In a high-volume, urban ophthalmology clinic with diverse safety-net population, lack of insurance, younger age, and male gender were the strongest predictors of lacking a PCP, whereas language, social vulnerability, and visual acuity were not associated. This suggests that not having a PCP is driven by financial barriers rather than demographic or community-level factors, or even vision loss. Recognizing these highlight an opportunity to reframe ophthalmology specialty clinics as critical touchpoints for re-engaging patients with primary care, strengthening referral linkage, and addressing upstream barriers to preventive eye health.

ABSTRACT 18

RITLECITINIB (JAK3/TEC INHIBITOR) IN CICATRICIAL ALOPECIA: A PILOT STUDY OF SAFETY AND CLINICAL AND BIOMARKER RESPONSE.

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Cicatricial Alopecias (CA), including central centrifugal cicatricial alopecia (CCCA), frontal fibrosing alopecia (FFA), and lichen planopilaris (LPP), are progressive scarring alopecias characterized by inflammation and scalp fibrosis leading to permanent hair loss. Evidence suggests JAK/STAT pathway dysregulation in the pathogenesis of these disorders. Ritlecitinib, a JAK3/TEC inhibitor, has demonstrated promise in the treatment of alopecia areata; however, its role in CA remains unexplored. This prospective, open-label study aims to analyze the molecular and clinical effects of ritlecitinib in patients with CCCA, FFA, and LPP.

Goals and Hypothesis: We hypothesized that ritlecitinib would modulate inflammatory and fibrotic signaling in CA, with molecular changes correlating with clinical improvement. This study aims to expand the clinical management options for CA by exploring the potential use of JAK3/TEC inhibitors.

Methods: Approximately 50 patients with FFA/LPP (n = 22) and CCCA (n = 22) received ritlecitinib 200 mg daily for 8 weeks, followed by 100 mg daily for 40 weeks. Scalp biopsies from non-lesional and lesional areas were collected at baseline and at weeks 8, 24, and 48 and analyzed. Molecular assessments included RT-PCR-based biomarker analysis. Physician- and patient-reported hair regrowth outcomes were recorded at each visit and assessed.

Results: Clinical indices demonstrated significant mean percentage improvement from baseline to week 48 across all CA subtypes. There was a mean LPPAI reduction with marked improvement in erythema, perifollicular scale, pruritus, and pain ($p < 0.01–0.001$). Similarly, significant decreases in FFASI were observed, along with notable regrowth in eyebrow hair and improvement in DLQI ($p < 0.05–0.001$). Among the CCCA cohort, there was a reduction in CHLG and improvement in symptoms and DLQI ($p < 0.05–0.001$). Molecular profiling demonstrated a decrease in CCL5 expression at week 24, along with downregulation of inflammatory pathways and modulation of fibrosis-associated markers, indicating suppression of Th1-mediated inflammation.

Conclusion/Future Plans: Ritlecitinib demonstrated a favorable safety profile and significant clinical improvements in patients with CA. Molecular findings suggest that JAK3/TEC inhibition exerts anti-inflammatory effects and may modulate fibrotic pathways in affected scalp tissue. These promising results warrant further investigation in larger, controlled clinical trials.

ABSTRACT 19

PRELIMINARY ASSOCIATIONS BETWEEN SOCIAL COHESION AND HEALTHCARE UTILIZATION AMONG ADULTS WITH CHRONIC ILLNESS FROM THE PREDICTING RISK AND INVESTIGATING OUTCOMES USING PATIENT REPORTED AND COMMUNITY LEVEL DATA (PRIORITY) COHORT.

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Poor neighborhood social cohesion has been linked to adverse health outcomes, but its relationship with healthcare utilization (HCU) remains underexplored. This study examined preliminary data from PRIORITY, a prospective cohort study of randomly selected adult emergency department (ED) patients with chronic illnesses.

Methods: We analyzed baseline responses to a validated, 4-item measure of social cohesion within one's neighborhood assessing perceived belonging, trust, friendliness, and helpfulness. The scale ranged from 1–7 with scores of 5–7 classified as low cohesion. Each neighborhood cohesion domain was analyzed using separate logistic regression models, with HCU as the outcome. HCU was defined as ED visit or hospitalization within 6 months of enrollment in PRIORITY, modeled binarily (yes/no), and extracted from electronic health records. Demographic characteristics and unadjusted odds ratios with 95% confidence intervals (CIs) are reported.

Results: The 145 participants were 58% female; 44% Black; 38% Latine; and 8% White; with mean age of 56.4 years. Chronic illness rates were 52% for asthma/COPD; 42% for diabetes; 73% for hypertension; 19% for heart failure and 18% for kidney failure. Low belonging was reported by 19% and 41% reported low trust; 24% described their neighborhoods as unfriendly; 24% as unhelpful. Individuals perceiving their neighborhoods as unhelpful had 2.77 times the odds of utilizing healthcare (95% CI: 0.94–8.23), though findings were not statistically significant. Similarly, those viewing their neighborhoods as unfriendly had 3.33 times the odds of HCU (95% CI: 0.92–12.2).

Conclusions: Lower perceived neighborhood cohesion in the domains of helpfulness and friendliness showed a non-statistically significant association with greater healthcare utilization in adults with chronic illness and should be further explored.

ABSTRACT 20

DECREASED ROBOT-RELATED COMPLICATIONS FOLLOWING THE DEVELOPMENT AND ADOPTION OF A STANDARDIZED SAFETY PROTOCOL.

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Robot-assisted spine surgery (RASS) enables precise pedicle screw insertion via pre-planned trajectories, and yet complications remain a concern. Prior work suggests that bony pedicle wall breaches from instrumentation and complications related to robotic surgery may be from shifting the reference frame or improper methodology. We hypothesized that the introduction of standardized institutional guidelines for RASS would reduce complications associated with robotic screw placement.

Methods: This retrospective study included patients who underwent RASS using 2 robotic systems at a single institution. We analyzed 264 patients in a historical cohort before,and 290 patients after, the implementation of an institutional protocol developed to ensure safety with robotic pedicle screw placement. The protocol provided surgeons with detailed guidelines for reference-frame placement, intraoperative screw trajectory and alignment checks, depth of drill insertion, verification of screw positioning, neuromonitoring for thoracic instrumentation and postoperative imaging. Patient demographics, preoperative diagnoses, surgical characteristics, and complications were collected for all patients.

Results: There was no difference between the pre-protocol and post-protocol groups with respect to patient demographics. In the pre-protocol cohort, 6 (2.3%) of the patients experienced robot-related complications, including nerve injury, durotomy, and misplaced screws, with half of these complications attributed to reference-frame errors. Following the implementation of the protocol, no patient (0%) experienced a robot-related complication among 290 cases involving 2,030 screws placed with robotic assistance, representing a significant reduction ($p = 0.01$). The mean number of instrumented levels per patient post-protocol was 3.3 ± 2.1. Total complication rates were similar post-protocol (19.7%) versus pre-protocol (26.1%) ($p > 0.05$).

Conclusion: Following the implementation of standardized robotic surgery guidelines, no robot-related screw complications occurred in a post-protocol cohort of 290 patients. This study underscores the importance of protocol standardization, alongside technological advancements, in optimizing patient safety and improving outcomes. Well-designed institutional protocols may notably reduce robotic surgery complications and be a valuable model for other institutions.

ABSTRACT 21

CANCER PREVENTION ON LABOR AND DELIVERY: MISSED OPPORTUNITIES, AND MORE LIKELY MISSED FOR SOME.

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Objective. Opportunistic salpingectomy (OS) reduces the risk of serous ovarian cancer. Institutional policy favors OS, not tubal ligation (TL). During cesarean section (CS), OS can be performed for surgical sterilization or for patients ≥45 years. This study aimed to determine factors influencing OS during CS and identify areas for improvement.

Methods. A chart review was performed with data from January 2020 to January 2025. Included were CS patients who underwent OS or TL at any age, or were ≥45 years. Data collected included age, BMI, race, ethnicity, insurance, family history, IVF use, genetic mutations, prior surgeries, Charlson Comorbidity Index (CCI), attending type, and year of surgery. Analyses used descriptive statistics, t-tests or Mann-Whitney U-tests, and chi-squared or Fisher's Exact tests.

Results. Of 457 patients, 353 (77.2%) underwent OS or TL. Of these, 329/353 (93%) had OS and 24/353 (7%) had TL. Among White patients, 125/129 (97%) had OS; Black: 52/59 (88%); Asian: 31/35 (88%); "Other" race: 117/126 (93%). White patients were more likely than expected to undergo OS (p=0.0004). No differences were found by age, ethnicity, insurance, family history, IVF use, genetic mutations, prior surgeries, or attending type. There was a non-significant trend toward lower OS rates with higher BMI (p=0.08) and an 11% increase in OS odds per year after 2020.

There were 113/457 (24.7%) patients ≥45 undergoing CS. Among these, only 9/113 (7.9%) had OS; the rest had fallopian tubes left in situ. By race: White 3/73 (4%), Black 1/9 (11%), Asian 2/13 (15%), "Other" 3/12 (25%). Patients ≥45 of "Other" race were more likely than expected to undergo OS (p=0.039). Those ≥45 who did not have OS had fewer prior surgeries (p=0.012). No differences were seen with age, ethnicity, insurance, family history, IVF use, genetic mutations, attending type, BMI, or CCI. There was a non-significant 38% increase in OS odds per year after 2020.

Conclusions. In our cohort, there are many opportunities for improvement in ovarian cancer prevention on Labor and Delivery. Overall, the biggest opportunity is in patients ≥45 years, which represent 8.5% of the patients who deliver at our institution. There are disparities in the performance of OS for sterilization across racial groups. This underutilization demonstrates missed opportunities for ovarian cancer prevention and points to the need for an intervention to achieve more equitable, standardized delivery of opportunistic salpingectomy.

ABSTRACT 22

AGE-STRATIFIED YIELD OF HATTR SCREENING AMONG V122I CARRIERS: EVIDENCE SUPPORTING TARGETED SCREENING IN OLDER INDIVIDUALS.

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The TTR V122I genetic variant has been shown to be associated with hereditary transthyretin (TTR) amyloid cardiomyopathy (hATTR-CM). This illness is the accumulation of transthyretin in the extracellular tissue of the heart, leading to a restrictive cardiomyopathy. Studies have shown that carriers without heart failure diagnosis have subtle echocardiographic changes, including hallmarks of amyloid deposition. It is therefore of great importance to understand whether V122I carriers have myocardial amyloid deposition leading to cardiac structural/functional changes before the onset of overt heart failure.

Mount Sinai BioMe BioBank participants have been given consent to be re-contacted for biomedical research. Our primary study population are V122I carriers without a HF clinical diagnosis. Participants were recalled for comprehensive imaging evaluation and provided with echocardiography and cardiac MRI to screen for cardiac amyloidosis, and when indicated based on screening results were also offered technetium-99m pyrophosphate (99mTc-PYP) scintigraphy. Results of the screening tests were shared with the patients' care teams, and a thorough review of the electronic health record was conducted to determine whether cardiac amyloidosis screening led to a clinical diagnosis of haTTR.

A total of 58 genetically confirmed V122I carriers were enrolled and recalled. Ages ranged from 26 to 85 years, with a mean age of 53 and median age of 54. Two participants (3.4%) were newly diagnosed with hereditary transthyretin amyloidosis (haTTR) through the study screening protocol. Screening yield varied significantly by age: the participants who screened positive were ages 74 and 85. Therefore, of the 52 participants less than 70 years old, none screened positively, yet 40% of participants older than 70 (2 out of 5) screened positive. Figure 1a displays the number of participants within each decade of life and the proportion who screened positive; Figure 1b shows the percentage within each age group that screened positive.

Screen-detected haTTR occurred only in carriers at least 70 years old, with no clinical yield in younger adults. Further research is ongoing to identify preclinical indications of cardiac amyloidosis among younger patients.

ABSTRACT 23

IMMUNE CHECKPOINT INHIBITOR TREATMENT IN MUCOSAL MELANOMA: A RETROSPECTIVE ANALYSIS OF THE NATIONAL CANCER DATABASE.

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Mucosal melanoma (MM) is a rare and aggressive melanoma subtype with late diagnosis, limited treatment options, and poor survival rates. Given the high rates of metastasis at diagnosis and rapid disease progression, immunotherapies such as immune checkpoint inhibitors (ICIs) are promising advancements for MM treatment. Unfortunately, MM appears to respond more modestly to ICIs than cutaneous melanoma (CM) and their effect on overall survival (OS) remains poorly defined. Establishing ICIs' effect on the OS of MM patients is clinically important.

Research question: Does the advent of ICIs for melanoma alter OS in MM, and what demographic, clinical, and treatment variables are associated with survival trends?

Methods: We conducted a retrospective cohort study of 8,125 patients with histologically confirmed MM from the National Cancer Database. Patients were stratified by diagnosis era (pre-ICI: diagnosed before 2010; post-ICI; diagnosed after 2015) and systemic-therapy receipt (immunotherapy and/or chemotherapy). OS, including median survival time estimates, was compared using Kaplan-Meier curves and Cox proportional hazards models. Difference-in-differences (DID) analyses were conducted to isolate ICIs' effect on OS. Subgroup analyses included metastatic patients and stratification by primary tumor site. Multivariable logistic regression was performed to evaluate changes in systemic therapy recipients' characteristics over time.

Results: Median OS significantly improved in the post-ICI era (36.2 vs. 25.0 months, $p<0.0001$), and an adjusted DID showed a statistically significant survival benefit attributable to ICI use (HR: 0.86, 95% CI: 0.77-0.97). Among metastatic patients, OS improved in the post-ICI era, and DID also showed a treatment effect; however the results were not significant when adjusted for confounders ($p=0.074$). Site-stratified analyses revealed the greatest improvements in OS among patients with genitourinary MM, followed by head and neck and then gastrointestinal MM. Compared to pre-ICI recipients, post-ICI systemic therapy recipients are more likely to be older, publicly insured, have a high comorbidity burden, be ineligible for surgery, and receive immunotherapy alone.

Conclusion: The OS of patients with MM has improved since the introduction of ICIs. Despite shifts towards treating more clinically complex patients in recent years, the data suggests that modern survival benefits may be attributable to the advent of ICIs.

ABSTRACT 24

ASSOCIATION BETWEEN CTDNA KINETICS AND OVERALL SURVIVAL IN PATIENTS WITH UROTHELIAL CANCER.

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Circulating tumor DNA (ctDNA) dynamics have emerged as a promising biomarker of prognosis and therapeutic response in urothelial cancer (UC). However, the optimal approach to characterize the relationship between serial ctDNA changes and overall survival (OS) across various UC clinical disease states remains unclear. This study evaluated multiple methods to describe ctDNA kinetics, including qualitative, quantitative, and data-driven machine learning (ML) strategies, to identify relationships between longitudinal ctDNA patterns and OS outcomes.

Methods: We performed a retrospective cohort study of patients with UC, including variant histologies, with ≥2 tumor-informed ctDNA assays (Signatera) available. A 6-month landmark analysis was employed to minimize immortal time bias. Three ctDNA kinetic classification strategies were applied: (1) Qualitative—binary detectability patterns (clearance, conversion, persistent positive/negative); (2) Quantitative—percent change from baseline (major response ≥90% reduction, partial 30-89%, stable 0-29%, progressive ≥20% increase); (3) ML—unsupervised k-means clustering (k=5) based on descriptive and kinetic ctDNA features. The primary endpoint was discrimination of OS from 6-month landmark using Harrell's C-index. Pairwise differences were tested via bootstrap resampling (500 iterations). Sensitivity analyses were performed stratified by treatment setting.

Results: Among 215 evaluable patients, therapy settings included: neoadjuvant 38 (17.7%), adjuvant 51 (23.7%), advanced/metastatic 71 (33.0%), and no systemic therapy 85 (39.5 %). OS C-indices were: ML 0.902 (95% CI 0.855-0.934), Qualitative 0.883 (0.843-0.919), Quantitative 0.852 (0.818-0.899). Pairwise comparisons showed no significant differences (all p>0.10). Subgroup analysis showed no statistically significant differences by treatment setting (all p>0.10), although quantitative performance was numerically lower in advanced/metastatic setting (C-index 0.709 vs 0.799 qualitative; 0.839 ML), with a −0.13 difference relative to ML (95% CI −0.203–0.042; p=0.376).

Conclusions: All three ctDNA kinetic classification approaches demonstrated strong OS discrimination (C-index >0.85) with no significant performance differences across treatment settings, which suggests that multiple analytic strategies may be suitable depending on clinical context. Larger, prospective studies are needed to define optimal approaches and establish context-specific thresholds.

ABSTRACT 25

CHRONIC PERIOPERATIVE GLUCAGON-LIKE PEPTIDE-1 RECEPTOR AGONIST USE AND SURGICAL OUTCOMES IN PATIENTS WITH OBESITY UNDERGOING ROBOTIC UROLOGIC SURGERY: A PROPENSITY SCORE-MATCHED ANALYSIS.

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GLP-1 receptor agonists (GLP-1RAs) are increasingly prescribed for obesity and type 2 diabetes, and a growing proportion of surgical patients are receiving these agents at the time of major urologic procedures. With approximately 12% of U.S. adults reporting current or prior GLP-1RA use and obesity prevalence exceeding 42%, this clinical intersection is becoming unavoidable for practicing urologists. While early perioperative guidance focused on aspiration risk related to acute gastric emptying effects, the influence of chronic GLP-1RA therapy on broader postoperative morbidity remains poorly characterized, particularly in urologic surgery. We evaluated the association between chronic perioperative GLP-1RA use and surgical outcomes in patients with obesity undergoing robotic-assisted urologic surgery.

Methods: Single-center retrospective cohort study of 361 adults with BMI ≥35 undergoing robotic-assisted radical prostatectomy, partial nephrectomy, or radical nephrectomy between January 2017 and December 2024. Chronic GLP-1RA exposure required ≥3 months of documented use before and after surgery. Propensity scores from 14 covariates were used for 2:1 nearest-neighbor matching (36 GLP-1RA users, 59 controls). The primary outcome was any postoperative complication (Clavien-Dindo classification); secondary outcomes included major complications (Clavien-Dindo ≥III), Comprehensive Complication Index, estimated blood loss (EBL), length of stay (LOS), peak pain score, and emergency department (ED) utilization at 90 days and 1 year.

Results: Covariate balance was achieved (mean absolute SMD 0.036; maximum 0.074). GLP-1RA use was not associated with any complication (OR 2.39, 95% CI 0.63–9.10), major complications (OR 3.70, 95% CI 0.45–30.32), or CCI (mean difference +1.29, p=0.64). EBL was reduced approaching significance (mean difference -81.32 mL, 95% CI -165.85 to 3.22, p=0.06); LOS trended shorter (mean difference -0.78 days, p=0.11). Peak pain scores and ED utilization did not differ.

Conclusions: Chronic perioperative GLP-1RA use was not associated with increased postoperative complications, morbidity, or ED utilization in patients with obesity undergoing robotic urologic surgery. While power constraints preclude conclusions of equivalence, these findings provide the first urologic-specific perioperative safety data and support individualized rather than reflexively restrictive GLP-1RA management in this growing surgical population.

ABSTRACT 26

ANALYSIS OF AN EXPANDED ADMISSION SCREENING PROTOCOL FOR *CANDIDA AURIS* AT A NEW YORK CITY HOSPITAL.

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Candida auris is an emerging, often multi-drug-resistant fungus that can cause severe infections in at-risk patients, particularly those with compromised immune systems or underlying medical conditions1,2. Because *C auris* can spread within healthcare settings such as skilled nursing facilities (SNF), consistent and updated screening protocols are essential to strengthen infection prevention efforts.

Objective: This study analyzes the utility of expanded *C auris* screening for all patients presenting from any SNF.

Methods: A retrospective study was conducted at an urban community hospital in Brooklyn, New York, from Jan 2022 to Sept 2023 in two phases. Swabs from the nares and composite axilla-inguinal folds bilaterally were cultured for *C auris.* Phase 1 (Jan-Sept 2022): high-risk patients-those admitted with tracheostomy or ventilator-dependence who had been in any SNF within the past month-were screened. Phase 2 (Oct 2022-Sept 2023): expanded screening protocol-all patients with a stay in any SNF within the past month-were screened.

Results: 591 unique patients were screened, 14 screened positive (2.4%). Phase 1 yielded 34 patients screened with two screening positive (5.9%). Phase 2 yielded 557 patients screened with 12 screening positive (2.2%). In total, 137 patients came from ventilator-capable SNFs, with 51 of these patients deemed high risk for *C. auris* colonization. 9 of these high-risk patients were positive on screening tests (17.7%). 53 patients from SNFs had a tracheostomy or were ventilator-dependent on admission, of which 9 tested positive for *C. auris* (17.0%). 5 patients who were not deemed high risk tested positive for *C. auris* in the expanded screening protocol (0.9%).

Discussion: This study demonstrates that SNF type (ventilator-capable vs nonventilator-capable) and patient tracheostomy or ventilator-dependent status significantly influenced *C auris* screening test positivity and should be considered when creating screening protocols for patients presenting to hospitals from SNF. The positivity rate decrease between study phases may reflect the broader inclusion criteria in Phase 2 of this study, allowing early detection of *C auris* colonized patients who would otherwise go undetected. Expanding screening in regions with high *C auris* prevalence may be beneficial to reduce undetected transmission risk, while targeted screening by risk factors may increase screening efficiency in resource-limited or low *C auris* prevalence regions.

ABSTRACT 27

DETECTION OF PROSTATE CANCER RELATED GENE SIGNATURES FROM SKIN TAPE STRIP USING RNA-SEQ.

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While biopsy is the diagnostic standard for prostate carcinoma (PCa), it is invasive and unsuitable for continuous monitoring. Tape-stripping is a painless, minimally invasive method that captures skin transcriptomic profiles and has shown diagnostic value in other diseases. This pilot study examines whether skin gene expression patterns vary with PCa severity and whether such transcriptomic profiles can serve as noninvasive biomarkers.

Objective: To determine whether skin-derived RNA sequencing profiles distinguish benign, low-grade, and clinically significant PCa and correlate with clinical severity metrics.

Methods: Skin tape-strip samples were collected from 38 men undergoing prostate biopsy; 32 passed quality control (benign n=11, low-grade n=11, clinically significant n=10). Bulk RNA sequencing was performed, and differential expression analysis used |fold change|>2 and FDR<0.05. Reactome pathway enrichment and comparison with 611 curated PCa biomarkers from the Tewari Lab were conducted. Spearman correlations assessed associations between differentially expressed genes (DEGs) and Gleason score, PSA, PIRADS, and Decipher. Predictive modeling was performed using elastic net regression with 10-fold cross-validation on the top 100 DEGs.

Results: Principal component analysis demonstrated separation between benign and PCa samples (PC1=23%, PC2=9% variance explained). A total of 1,304 DEGs were identified (671 upregulated, 633 downregulated). Upregulated genes included CHRM4 and UGT8, while CTNND2 and FZD3 were downregulated. Enrichment analysis identified “Formation of the Cornified Envelope” ($p<6\times10-8$) and “Keratinization” ($p<4\times10-3$) pathways. Of 360 curated PCa genes, 36 were differentially expressed, including androgen receptor and TGF-β signaling components. Significant correlations were observed between DEGs and clinical metrics, including SRD5A1 with PSA (r=0.63, p=0.002), CAMK2N1 with Decipher (r=-0.62, p=0.017), and E2F5 with Gleason score ($r=-0.46$, p=0.035). The elastic net classifier achieved an AUC of 0.94 and 89% accuracy, with TREX2 as the top predictive biomarker.

Conclusion: Skin transcriptomic signatures reflect prostate cancer–associated molecular alterations, correlate with established clinical severity metrics, and demonstrate strong predictive performance. These findings support the feasibility of skin tape-strip RNA sequencing as a noninvasive biomarker platform for PCa detection and risk stratification.

ABSTRACT 28

AURICULAR NEUROMODULATION AND SURGICAL CONDITIONS DURING FUNCTIONAL ENDOSCOPIC SINUS SURGERY (FESS).

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Functional Endoscopic Sinus Surgery (FESS) is a minimally invasive procedure used to treat chronic sinusitis and related conditions. Because the sinuses are highly vascular and close to critical structures such as the brain, effective bleeding control is essential for maintaining visibility and reducing complications. This study investigates whether cutaneous vagal nerve stimulation can reduce intraoperative bleeding during FESS using the Spark Biomedical Sparrow Ascent Transcutaneous Auricular Neurostimulation (tAN) System. The device, FDA-approved for opioid use disorder and previously tested in other bleeding contexts, delivers noninvasive vagal stimulation, which may influence autonomic balance, vascular tone, and inflammation to promote hemostasis. The goal is to evaluate the safety, feasibility, and potential hemostatic benefits of neuromodulation in sinus surgery.

Hypothesis: We hypothesize that the Spark Biomedical Sparrow Ascent Transcutaneous Auricular Neurostimulation (tAN) System will reduce bleeding during FESS.

Methods: This blinded, prospective, randomized controlled pilot trial assigned patients to either the intervention (device activated) or control (sham) group using sealed-envelope randomization. The device was applied for 30 minutes before surgery and re-applied in the PACU for another 30 minutes. Surgeons recorded Boezaart bleeding scores at incision and at 15-minute intervals throughout the procedure. To adjust for procedure length, the area under the curve (AUC) per minute and the slope of bleeding scores over time were calculated for each patient.

Results: In this pilot study of 20 patients (10 intervention, 10 sham), there was no significant difference in overall bleeding intensity after adjusting for procedure length (mean AUC/min: 1.76 vs. 1.52, $p = 0.32$). The intervention group showed a trend toward improved bleeding over time (slope –0.0106 vs. +0.0019, $p = 0.058$), suggesting a possible reduction that did not reach statistical significance. Follow-up phone calls revealed no patient concerns or complications.

Conclusions/Future Plans: This pilot study demonstrates the feasibility of auricular vagal nerve stimulation during FESS and suggests a trend toward improved bleeding control. Although not statistically significant, these findings support further investigation, with potential plans to expand the study with Spark Biomedical to a larger cohort of about 100 patients.

ABSTRACT 29

LINKING THE EFFECTS OF DIET AND MICROBIOME TO SYMPTOMS OF SCHIZOPHRENIA.

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Schizophrenia is a common psychiatric disorder with a complex presentation and no clear underlying mechanism. The hypothalamic-pituitary-adrenal (HPA) axis mediates stress and is often dysregulated in schizophrenia. Gut dysbiosis stimulates the HPA to influence emotion and cognition, and the gut microbiome can be shaped by diet, introducing protective or precipitating factors of schizophrenia. Understanding how the microbiota-gut-brain axis influences schizophrenia can provide new insights on schizophrenia pathophysiology.

I aimed to determine if diet is associated with schizophrenia symptoms, mediated by gut bacteria. Fecal samples, lifestyle surveys, and PANSS scores were obtained from 75 cases with psychotic disorders and 33 controls with non-psychotic psychiatric disorders. Participants were excluded if they took antibiotics, had food allergies, or had a history of C. difficile infection. Across 1171 bacteria species and 22 dietary factors, I filtered for triplets of diet, bacteria, and symptoms based on significant correlations between every pairwise relationship. Then, I used mediation analysis to establish if diet effects on symptoms were mediated by bacteria.

This analysis yielded 3 triplets of diet, bacteria, and symptoms with significant ($p < 0.05$) results, of which 2 triplets showed a partial mediation of the effect through diet. High-fat meat intake was associated with reduced emotional withdrawal (PANSS N2), and this effect is partially mediated by Coprobacter secundus, which is known to react with sugars. Artificial sweeteners were also associated with reduced emotional withdrawal, partially mediated by Eubacterium sulci, which is found to be decreased in patients with major depressive disorder, increased when taking SSRIs, and decreased in low calorie diets.

Only a few diet-microbiome-symptom relationships were found, and the results are not clear enough to elucidate a mechanism by which diet can exert its impacts on schizophrenia symptoms through the microbiome. The current approach is restricted by filters to minimize the computational volume of running the mediation analysis. Next steps might be to include every significant mediated relationship, and to add confounding variables to the model to understand if the mediation effects still hold across all groups. Conducting a literature review about the significant bacteria and symptoms identified could yield more insight into how diet and the microbiome work to influence schizophrenia symptoms.

ABSTRACT 30

A COMPARATIVE STUDY OF NON-OPERATIVE AND OPERATIVE APPROACHES OF NON-ODONTOID UPPER CERVICAL FRACTURES IN ELDERLY PATIENTS.

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Upper cervical spinal fractures in elderly patients represent a significant clinical challenge due to their complexity and associated mortality. Extensive work has examined commonly occuring geriatric odontoid fractures, but optimal management of less common non-odontoid types remains poorly defined. Frailty and injury susceptibility in this population create ambiguity in surgical versus conservative care. While Hangman's fractures have been studied, geriatric-specific analysis is lacking.This study investigates treatment patterns, outcomes, and mortality associated with non-odontoid upper cervical fractures in elderly patients.

Methods: The 2018–2022 National Readmission Database (NRD) was queried for patients aged ≥65 with non-odontoid fractures, identified by ICD-10 codes in the first five diagnosis fields. Fractures were classified as Jefferson, Hangman's, or Other; odontoid fractures were excluded. Surgical cases were defined by cervical fusion codes, and non-operative cases by brace codes or absence of surgery within 90 days. Extracted data included demographics, discharge disposition, length of stay, comorbidities, readmissions and complications. Chi-squared and logistic regression analyses were performed in Python.

Results: A total of 7,628 geriatric patients with non-odontoid fractures were identified, 6,804 operative and 824 non-operative. Significant differences were found by sex, age, and insurance across fracture types ($p < .001$). Operative patients were younger, more often male, and had higher rates of concurrent injury ($p < .0001$). Predictors of operative management included younger age, absence of comorbidities, concurrent injury, and private insurance, while female sex, dementia, older age, and non-Jefferson fractures predicted non-operative care. Operative patients had higher cardiopulmonary, infection, wound, bleeding, neurological, and pseudoarthrosis complications ($p < .001$). Non-operative patients had fewer 90-day readmissions ($p = 0.0112$), but greater in-hospital ($p = 0.0043$) and one-year mortality ($p = 0.0040$).

Conclusions: In elderly patients with non-odontoid cervical fractures, operative treatment favors younger individuals with concurrent injury and intact cognition. Although short term complications may increase, long-term survival is significantly higher than with conservative management. Treatment decisions should balance short-term surgical risks against long-term stability and mortality in this vulnerable population.

ABSTRACT 31

SLEEP–IBD BELIEFS AS DRIVERS OF SLEEP MEDICATION USE: A CROSS-SECTIONAL SURVEY STUDY.

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Sleep disturbance is pervasive in inflammatory bowel disease (IBD), but mechanisms driving sleep-related self-management behaviors remain poorly characterized. Patient beliefs about whether sleep influences IBD disease activity are prevalent, but whether these beliefs independently predict sleep medication use beyond objective sleep quality and disease activity has not been studied.

Methods: We conducted a cross-sectional analysis of 204 adult IBD patients at a tertiary IBD center. Eligible patients were approached virtually or in person and emailed a survey link, with e-consent and data collection through REDCap. Participants completed validated measures of sleep quality (PSQI), disease activity (PRO-2), fatigue (PROMIS), quality of life (SIBDQ), stress (PSS-4), and resilience (CD-RISC-2), alongside a novel questionnaire assessing beliefs about whether sleep influences IBD activity. The primary research question was: Do stronger sleep-IBD beliefs independently predict sleep medication use beyond objective sleep quality and disease activity? The primary exposure was a composite sleep-IBD belief score; outcomes, any OTC sleep aid use, and any prescription sleep medication use were operationalized as binary variables. Multivariable logistic regression adjusted for disease activity, IBD subtype, age, sex, PSQI score, anxiety, depression, and stress, with a prespecified subgroup analysis for patients in remission (PRO-2, n=144).

Results: Most patients endorsed strong beliefs linking sleep to IBD: 75.3% agreed sleep worsens during flares and 51.2% that poor sleep worsens disease activity. Despite only 23.5% having active disease, 76.5% met PSQI criteria for poor sleep, 68.6% used OTC sleep aids, and 24.0% used prescription medications. Belief scores correlated with OTC use and poor sleep in unadjusted analyses (r=0.24, p=0.0009). On multivariable regression, beliefs did not independently predict OTC use (OR 1.85, 95% CI 0.93–3.68, p=0.08) or prescription use (OR 1.14, 95% CI 0.55–2.37, p=0.73). Objective sleep quality was the strongest independent predictor in both models, consistent in the remission subgroup.

Conclusions: Sleep-IBD beliefs correlate with medication use, but this relationship is mostly explained by objective sleep quality instead of beliefs alone. Sleep disturbance itself, more than illness belief, drives seeking medication aid in IBD, highlighting a need for possible interventions such as CBT-I, accessed by only 0.5% of this cohort.

ABSTRACT 32

IS THERE A LINK BETWEEN YOLK SAC DIAMETER AND PREGNANCY LOSS IN SINGLE EUPLOID EMBRYO TRANSFERS?

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The yolk sac (YS), the first fetal structure visible on transvaginal ultrasound, plays key roles in fetal development. Variations in its diameter has been associated with aneuploidy, pregnancy loss, and adverse outcomes such as clinical pregnancy loss (CPL). Current research about YS size primarily includes spontaneous pregnancies dated by last menstrual period, which can inaccurately estimate gestational age (GA), or ART pregnancies with known GA but involving untested or multiple embryo transfers, limiting clinical correlation. This study aims to assess the relationship between CPL and early YS measurements following single euploid embryo transfers (SEETs).

Methods: This retrospective cohort study analyzed patients undergoing IVF/PGT-a between 2016 and 2020. Only SEETs resulting in singleton clinical pregnancies were included. YS measurements were analyzed by gestational week (5,6 and 7) based on known GA. Distribution analysis was performed, study cohort groups were categorized based on 5th percentile (p5), the central 90% range (control) or 95th percentile (p95). ANOVA, and a multivariate GEE analysis were performed. After reviewing 49,225 early clinical pregnancy scans, 9000 pregnancy scans were included.

Results: For the 4189 cases with a GA of 5 weeks, YS measurements were categorized as: p5<1.57 mm, control 1.57-4.33 mm, p95>4.33 mm. CPL rates differed significantly among groups: 21.1% for p5, 11.3% for control, and 6.9% for p95 (p<0.0001). Adjusted analysis showed that YS in the p5 group were significantly associated with higher odds of CPL (aOR 10.04, 95% CI 1.1-89.5).

For the 2646 cases with a GA of 6 weeks, YS measurements were categorized as: p5<2.60mm, control 2.60-5.23 mm, and p95>5.23 mm. CPL rates differed significantly: 52.2% for p5, 10.6% for control, and 13.4% for p95 (p<0.0001). Adjusted analysis showed that YS in the p5 group were significantly associated with higher CPL (aOR 6.5; 95% CI 3.1-13.6).

For the 2165 cases with a GA of 7 weeks, YS were categorized as: p5<3.03 mm, control 3.03-6.20mm, and p95>6.20 mm. CPL rates significantly differed: 40.5% for p5, 8.3% for control and 11.8% for p95 (p<0.0001). Adjusted analysis showed that YS in the p5 group were significantly associated with higher odds of CPL (aOR 4.3; 95% CI 2.0-9.3).

Conclusion: In pregnancies after euploid embryo transfers at gestational ages 5, 6 and 7 weeks, YS diameters below the 5th percentile are significantly associated with clinical pregnancy losses.

ABSTRACT 33

AGE-RELATED BONE LOSS IN MOUSE LUMBAR VERTEBRAE IS AFFECTED BY REGION, SEX, AND LEVEL: IMPLICATIONS FOR SPINAL LOADING AND ANALYSIS METHODS.

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Human bone quality varies with age and spinal level, with upper lumbar vertebrae more prone to fracture. Mouse studies of bone health often focus on a single lumbar vertebral level and limited regional analysis with no comprehensive study evaluating how sex, lumbar level, vertebral region, and reconstruction method contribute to patterns of age-related vertebral bone loss in mice.

Methods: This micro-computed tomography (μCT) study measured lumbar spinal level- and vertebral region of interest (ROI)-specific patterns of bone quantity, structure, and density in relation to age and sex in mice. Lumbar vertebrae (L1–L6; *n* = 4/sex/age) from young adult (4-month), middle-aged (12-month), and old (24-month) mice were analyzed for trabecular bone volume fraction (BV/TV), volumetric bone mineral density (vBMD), cortical thickness (Ct.Th), and tissue mineral density (TMD). Parameters were measured for full vertebrae, cranial, middle, and caudal vertebral regions, comparing both 1/3-vertebral and standardized 30-slice reconstruction approaches.

Results: Age was associated with a reduction in vBMD and BV/TV in both sexes, with bone volume, structure, and density most significantly reduced at L1 and cranial vertebral regions. Females exhibited greater declines than males, particularly in BV/TV and vBMD. Ct.Th was the greatest mid-spine but declined with age at L1 and L5. Regional differences were observed for both cortical parameters.

Conclusions: Trabecular bone is affected by age, sex, lumbar level, and vertebral region in mice. The greatest sensitivity to age-related bone loss was detected in the L1 lumbar level and cranial vertebral regions in female mice. These findings highlight the need for region- and method- specific analysis in bone research and exhibit age-related changes in vertebrate by level and region that exhibit similarities to humans.

ABSTRACT 34

REGIONAL SELECTIVITY OF PITUITARY ADENOMA-INDUCED CORTICAL CHANGES MAPS TO GLIAL AND ENDOTHELIAL SIGNATURE.

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Pituitary adenomas produce cortical changes beyond local mass effect; prior findings of cortical thinning in V1 subregions and their associated white matter tracts suggest that network connectivity confers vulnerability to neuronal degeneration. We investigated how these benign tumors affect cortical structure by integrating 7T MRI morphometry with transcriptomic data using an imaging transcriptomics framework.

Methods: Eighteen patients with histopathology-confirmed pituitary adenoma and twenty-seven controls underwent 7T MRI. Cortical thickness was extracted from T1-weighted MP2RAGE sequences using FreeSurfer 7. Cohen's *d* effect sizes between groups were computed after regressing age, sex, and total intracranial volume. Partial least squares (PLS) regression linked transcriptomic variation from the Allen Human Brain Atlas to regional case-control differences. Spatial autocorrelation was addressed using spin-test null models (10,000 rotations). GSEA used MSigDB Hallmark and C2 collections.

Results: Patients exhibited a pattern of distributed cortical thickening with significant regional correlation to AHBA-derived gene expression patterns ($\rho = -0.56$, spin-$p < 0.002$). Cortical regions that saw the most thickening in patients were enriched for Hedgehog pathway genes alongside glial, dopaminergic, and glutamatergic cell signatures in healthy brain. These same regions exhibited decreased expression of metabolic genes and endothelial cell signatures in healthy brain.

Conclusion: Our analysis reveals cortical thickening in regions characterized by increased potential for Hedgehog-mediated neuronal differentiation, enrichment for glutamatergic and dopaminergic signatures, and reduced metabolic activity. These findings suggest that regions of lower connectivity – consistent with lower baseline metabolic activity – are poised to resolve changes in network connectivity through Hedgehog-driven glial proliferation, glutamatergic synaptic modulation, and dopaminergic circuit reweighting. This work supports current understanding that cortical changes follow network-driven patterns originating from pituitary adenoma-induced tissue insult. As the first imaging transcriptomics study of skull base tumors, this approach provides a molecular framework for understanding how remote tumors can reshape cortical architecture through network vulnerability and compensatory plasticity. Further work will integrate connectomics to validate this network-driven model.

ABSTRACT 35

FERTILITY OUTCOMES POST-UTERINE ARTERY EMBOLIZATION FOR UTERINE ARTERIOVENOUS FISTULA.

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Uterine arteriovenous fistulas (uAVFs) are rare, often iatrogenic, myometrial arterial–venous shunts that can cause life-threatening uterine bleeding. Hysterectomy is definitive but eliminates fertility; uterine artery embolization (UAE) is a uterus-sparing alternative, yet uAVF-specific reproductive outcomes are limited.

Purpose: To evaluate menstrual recovery and reproductive outcomes after UAE for angiographically-confirmed uAVF.

Methods: IRB-approved retrospective single-institution cohort of adults (≥18 years) treated with UAE for uAVF from January 2009 to December 2024. Inclusion required imaging suspicion (ultrasound/CTA/MRI) and angiographic arteriovenous shunting on digital subtraction angiography. Congenital malformations, non-embolization management, and hysterectomy before/after UAE were excluded. Eligible patients completed a prospective phone survey (June–October 2025) on menses and pregnancy. Survey responses were corroborated by chart review when available, with chart data preferentially used.

Results: Forty patients met criteria; 13/40 (33%) completed follow-up (mean age 31 years, range 19–41). Menses resumed in 12/13 (92%); one patient entered menopause. All procedures were technically successful with bilateral UAE (13/13); radial access was used in 11/13 (85%). Embolics included n-butyl cyanoacrylate (12/13, 92%), gelfoam (5/13, 38%), and coils (2/13, 15%); collaterals were embolized in 2/13 (15%). Six respondents attempted pregnancy and all conceived (100%), reporting 12 pregnancies: 7 live births (58%), 3 miscarriages (25%), 1 elective abortion (8%), and 1 ongoing pregnancy at 16 weeks (8%). All patients attempting pregnancy achieved ≥1 live birth. All completed births were via cesarean delivery; no obstetric (postpartum hemorrhage, uterine rupture, placenta accreta spectrum, retained placenta) or neonatal complications were reported.

Discussion: UAE for uAVF was associated with high menstrual resumption and favorable fertility outcomes in this cohort, supporting UAE as a fertility-preserving treatment option. Limitations include small sample size, single-center design, 33% survey response, and potential recall bias; larger multicenter studies with longer follow-up are warranted.

ABSTRACT 36

EVALUATION OF FACTORS AFFECTING OPHTHALMOLOGIC FOLLOW-UP ATTENDANCE AFTER TELERETINAL SCREENING FOR DIABETIC RETINOPATY.

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Teleretinal screening programs are an effective strategy for detecting diabetic retinopathy (DR), but ophthalmologic follow-up after screening remains an obstacle to providing care. To identify targets for intervention, we performed a retrospective chart review investigating factors affecting follow-up in diabetic patients with abnormal teleretinal findings.

Methods: We reviewed the charts of 222 adult patients with diabetes who underwent teleretinal screening and received ophthalmologic referral between January 1, 2024, and December 31, 2024, as part of the NYEE teleretinal screening program at various Mount Sinai primary care sites. Patients with confidential charts were excluded. Demographics, HbA1c, teleretinal diagnosis, patient outreach attempts, and follow-up outcomes were collected. Follow-up was considered complete if the patient was evaluated in person by an ophthalmologist within one year of their screening. SPSS was used to perform chi-square tests to compare follow-up completion across categorical variables and univariable binary logistic regressions to analyze continuous predictors. The Mount Sinai Health System Institutional Review Board approved use of these patient charts.

Results: Patients had a mean age of 60.2 ± 11.2 years and mean HbA1c of 7.9 ± 2.4%. Overall, 51.4% of patients were female, and 36.0% of patients self-identified as African American and 29.7% as Hispanic/Latino. Of patients requiring follow-up, 51.4% successfully completed follow-up and 48.6% did not. Higher HbA1c was associated with lower odds of follow-up completion (OR 0.89 per 1% increase, p=0.04). More patients with a DR teleretinal diagnosis (57.1%) successfully followed up than those with maculopathy (45.8%) or glaucoma (43.8%), but this did not differ significantly (p=0.65). Looking at how patients were contacted to schedule follow-up, completion was 62.3% among patients contacted only by phone, 44.3% among those contacted only through MyChart message and 48.1% among those contacted through both phone and MyChart message (p=0.27).

Conclusion: Our results show that there are many factors to consider when evaluating what affects ophthalmologic follow-up after teleretinal screening, although they do not all significantly impact follow-up completion. Further studies could optimize workflow, especially patient communication, and investigate if follow-up rates improve.

ABSTRACT 37

“THEY GIVE YOU A KIND OF STRENGTH": PERINATAL SUPPORT NEEDS AND TAILORING DOULA SUPPORT FOR BIRTHING PEOPLE EXPERIENCING HOUSING INSECURITY IN NEW YORK CITY.

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Birthing individuals facing housing insecurity experience increased adverse maternal and perinatal outcomes, including higher rates of cesarean delivery, preterm delivery, and NICU admission, as well as lower rates of prenatal care utilization, breastfeeding, and postpartum follow-up. The Journey Home study aimed to explore perinatal support needs experienced by people who were pregnant or gave birth while facing homelessness or housing insecurity in NYC, in order to tailor community-based doula care, an evidence-based intervention, to this population.

Methods: Qualitative interviews were conducted in English or Spanish with birthing adults in New York City who experienced housing insecurity during the perinatal period between 2023-2024. Interviews were recorded via HIPAA-compliant Zoom and transcribed. Data were analyzed in Dedoose using open coding and grounded theory to generate a codebook to guide an inductive thematic analysis.

Results: Most of the 25 participants identified as people of color: Hispanic or Latino (68%), Black or African American (20%), and Asian (4%). The majority of interviews were conducted in Spanish (n=17), and the remainder were conducted in English (n=8). 72% of participants (n=18) were born outside the US, with most immigrating between 2020-2022 (n=16). During their pregnancy, 52% (n=13) resided in a shelter and 48% (n=12) were staying with others. 7 participants reflected on doula care they received, while the remaining 18 participants reflected on support they would have liked had they received doula care. Participants reported needing 1) educational support such as information about social resources, transportation, and newborn care, 2) emotional support through companionship and reassurance, and 3) practical/physical support with tasks and communication with hospital staff and shelters. Participants who received doula support reported benefits well aligned with the identified support needs, and the most meaningful support reported was related to housing and challenges associated with recent immigration to the United States.

Conclusions: The perinatal support needs reported by birthing people experiencing housing insecurity evidenced the immense potential benefit of community-based doula care in this population. These findings identify how community-based doula programs can be tailored to support people facing housing insecurity and improve birthing experiences of this high-risk population.

ABSTRACT 38

CARDIO-METABOLIC AND RENAL BIOMARKERS ARE ASSOCIATED WITH RETINAL STRUCTURE, FUNCTION AND MICROVASCULATURE IN PATIENTS WITH PRIMARY OPEN ANGLE GLAUCOMA.

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Objective: To investigate strength of relationships between the retinal structure, function and microcirculation and systemic laboratory and cardiac parameters in patients with and without primary open-angle glaucoma (POAG).

Methods: In this retrospective analysis, 58 adult subjects (31 with and 27 without POAG) with paired systemic data and ophthalmic testing were included. Ocular variables included intraocular pressure (IOP), visual field (VF) mean deviation (MD), visual field index (VFI), macular optical coherence tomography (OCT) metrics, retinal nerve fiber layer (RNFL) sector thicknesses, and OCT angiography (OCTA) vessel density (VD). Systemic variables included blood pressure (BP), heart rate (HR), electrocardiogram (ECG) and echocardiogram (ECO), fasting glucose, lipids (LDL-C, triglycerides), creatinine, and urine microalbumin/creatinine ratio (UMACR). Pearson correlations were calculated separately for glaucoma and non-glaucoma (control) groups. Statistical significance was defined as $p < 0.05$.

Results: Our analysis shows higher ECO measured E/e′(a surrogate of left ventricular filling pressure) was significantly correlated to thinner temporal RNFL in patients with glaucoma but not controls. HR and RR interval (time duration between two consecutive R waves) had significant associations with higher IOP only in patients with POAG. Higher glucose was significantly associated with worse VF and reduced OCTA perfusion in POAG, while these relationships were not significant in controls. LDL-C and triglycerides were significantly associated with minimum central macular and RNFL thickness, respectively, in patients with POAG but not controls. UMACR was significant for increased central macular thickness and creatinine was significant for reduced macular OCTA perfusion in patients with POAG while neither parameter showed significant associations in controls.

Conclusion: POAG eyes exhibit markedly stronger and often directionally distinct coupling between systemic cardio-metabolic and renal parameters and retinal structural, functional, and microvascular metrics compared with non-glaucoma eyes. Multisystem oculomics that integrates OCT, VF, and OCTA may help identify systemic drivers of glaucomatous damage and refine individualized risk stratification.

ABSTRACT 39

TRANSFER LEARNING OF A RARE-DISEASE TRANSFORMER TO PREDICT FAST PROGRESSION IN PRIMARY OPEN-ANGLE GLAUCOMA USING EHR-DERIVED PHECODES.

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Purpose: Early detection of fast glaucoma progressors is critical for vision preservation. We conducted a retrospective cohort study to evaluate whether RarePT, a transformer model developed for rare-disease phenotyping and pretrained on UK Biobank EHR, can be fine-tuned to identify fast progressors in primary open-angle glaucoma.

Methods: A retrospective cohort of 882 patients followed at Mount Sinai Ophthalmology Clinics was analyzed. Inclusion criteria required ≥1 year of reliable VF (SITA only) and OCT imaging, and ≥3 mean deviation (MD) and ≥2 retinal nerve fiber layer (RNFL) values per eye. Linear regression slopes of MD and RNFL were calculated in R studio for 342 included patients. Fast progressors were defined as MD decline ≥1 dB/year or RNFL thinning ≥2 μm/year; slow progressors as MD decline ≤0.5 dB/year and RNFL thinning ≤1 μm/year. Weighted parameters were added to RarePT to represent fast progression as a linear combination of existing phecodes using L1 regularization. Weights were trained using 5-fold cross-validation stratified by progression status.

Results: Fast and slow progressors had comparable demographics (age 74.3 vs 73.0 years; male 38.2% vs 38.1%). Ethnic distributions were 46.1% vs 32.1% African American, 2.9% vs 2.3% Asian, 8.8% vs 12.6% European, 35.3% vs 44.0% Hispanic, and 6.9% vs 6.7% other. Fine-tuned RarePT showed limited discriminatory ability, with an AUROC of 0.55 [95% CI: 0.47-0.62]. At the chosen threshold, sensitivity was 0.43 [0.33-0.51], specificity 0.72 [0.65-0.79], PPV 0.54 [0.44-0.65], and NPV 0.62 [0.54-0.69]. The odds ratio of 1.93 [1.16-3.47] indicates that patients the model identified as higher risk had almost twice the odds of being true fast progressors. This supports a statistically significant but limited association between phecodes and fast progression. The top phecodes most similar to fast progression were inflammation of the eye, respiratory failure, osteomalacia, adenovirus, and inflammation of the heart, suggesting potential links to ocular or systemic inflammation.

Conclusion: While predictive performance was only slightly better than chance, RarePT demonstrated a weak but non-random ability to differentiate fast and slow glaucoma progressors using phecodes alone. These findings suggest that RarePT can be fine-tuned to identify fast glaucoma progression, supporting the model's adaptability for broader rare disease applications and the feasibility of future screening approaches.

ABSTRACT 40

TAPE STRIPS REVEAL MULTIAXIAL IMMUNE ACTIVATION AND AGE-DEPENDENT BARRIER DYSFUNCTION IN SOUTHEAST ASIAN ATOPIC DERMATITIS PATIENTS WITH MULTIOMICS MOLECULAR PROFILING.

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Atopic dermatitis (AD) is a heterogeneous inflammatory skin disease with distinct immunologic features across age and ethnicity. The molecular landscape of mild-to-moderate AD, especially in Southeast Asian and non-Western populations remain understudied.

Objective: To characterize the transcriptomic and proteomic signature of mild-to-moderate AD in Thai children (<12 years) and adults (>18 years) using noninvasive tape strip sampling.

Methods: Tape strips were collected from lesional (LS) and nonlesional (NL) skin of 28 Thai children (11 mild AD, 9 moderate AD, and 8 HCs) and 24 Thai adults (7 mild AD, 8 moderate AD, and 9 HCs). Samples underwent transcriptomic and proteomic analysis via RNA sequencing and Olink. Statistical analyses were performed using linear modeling frameworks, and features with fold change ≥1.5 and FDR <0.05 were considered differentially expressed. GSVA assessed pathway enrichment, and Pearson correlations evaluated associations between gene/protein expression and SCORAD.

Results: Children and adults shared upregulation of Th1, Th2, and Th17 immune axes in LS skin, with increasing severity and age associated with stronger Th17/Th22 activation and broader barrier impairment. Pediatric AD demonstrated unique upregulation of IL22 and olfactory receptor genes, suggesting early immune and sensory dysregulation potentially linked to systemic atopic predisposition. Adults showed diffuse epithelial barrier loss, including in NL skin, consistent with systemic inflammatory effects. Proteomic analysis corroborated transcriptomic trends, with strong correlations between inflammatory proteins and clinical severity in children. Notably, several pathways upregulated in this cohort (e.g., Th17/Th22) are not targeted by Th2-specific biologics but may respond to JAK inhibitors.

Conclusion: Mild-to-moderate AD in Thai patients is characterized by multiaxial inflammation and progressive barrier dysfunction, with age-specific molecular signatures. Southeast Asian atopic dermatitis demonstrates a unique immune profile marked by pronounced Th17/Th22 skewing alongside universal Th2 activation, reflecting a broader, psoriasis-like inflammatory pattern distinct from the Th2-dominant Western and Th22-predominant African phenotypes. These findings underscore the potential utility of JAK inhibitors in recalcitrant AD and support tape strips as a powerful tool for precision medicine in underrepresented populations.

ABSTRACT 41

EXAMINING THE IMPACT OF DOULAS ON INTRAPARTUM AND PERINATAL OUTCOMES IN A LOW-RISK PREGNANT POPULATION.

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Doulas are trained birthing companions who support patients throughout pregnancy. Research, while limited, suggests that doulas decrease intrapartum stress, increase patient satisfaction, and improve perinatal health. This study examined perinatal outcomes for a matched low-risk cohort of patients with and without intrapartum doula support.

Methods: We conducted a retrospective study of patients with nulliparous, term, singleton, vertex gestations delivering at a large urban medical center in 2021. We excluded patients with a scheduled cesarean delivery (CD). Matching propensity scores generated a 1:1 similar non-doula cohort. We extracted individual-level data from medical records, calculating lengths of time between intrapartum events. X2 and Student t-tests compared between-group differences ($p < 0.05$). Multivariable logistic regression estimated odds ratios (OR) of unplanned CD.

Results: 202 (7.4%) patients had intrapartum doulas, with a total cohort of 404 patients. Groups did not differ by other individual-level characteristics. Doula patients more frequently arrived at the hospital in active labor (77.2% vs. 69.3%, $p < 0.05$) and less often received epidural anesthesia (80% vs. 94%, $p < 0.001$). Patients with prenatal doulas had shorter median times from admission to full cervical dilatation (11 vs. 14 hours, $p < 0.05$). Doula patients had greater odds of unplanned CD, adjusted for confounders (OR 1.7 [1.1, 2.7], $p < 0.001$).

Conclusion/Implications: While intrapartum doulas provide personalized labor support, the factors associated with unplanned CD remain complex and multifaceted. Our unexpected finding likely reflects unmeasured factors such as selection biases, and signifies the importance of integrated intrapartum care.

ABSTRACT 42

STEREOTACTIC BODY RADIATION FOR HEPATOCELLULAR CARCINOMA IN PATIENTS WITH CHILD PUGH C CIRRHOSIS.

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Objectives: Patients with Child-Pugh (CP) class C cirrhosis and hepatocellular carcinoma (HCC) are typically considered contraindicated for radiation therapy due to hepatic decompensation risk. Limited data exist on stereotactic body radiation therapy (SBRT) in this population. We report safety and efficacy outcomes of SBRT in CP C HCC patients.

Methods: We conducted a single-institution retrospective review of CP C cirrhosis patients (score 10-15) with HCC treated with SBRT between January 2010 and July 2025. Overall survival (OS) and progression-free survival (PFS) were calculated using Kaplan-Meier methodology from SBRT completion. Toxicity was evaluated using CP score and CTCAE v6.0. Log-rank tests were used to compare OS across subgroups, and Fisher's exact tests were used to evaluate associations with grade ≥3 toxicity. Analyses were performed in R (version 4.5.1).

Results: Twenty-eight CP C patients treated with SBRT were identified. Median age was 64 years (54-82); 75% were male. Predominant etiologies included non-alcoholic steatohepatitis (32%), alcohol-related disease (21%), and viral hepatitis (22%). Among 28 patients, 30 lesions were treated, with median GTV volume of 30.8 cc. Median pre-treatment CP score was 11 (10-14). Median radiation dose was 40Gy in 5 fractions. Grade ≥3 toxicity occurred in 60.7% (n=17), most commonly encephalopathy and hepatic failure, including 3 (10.7%) grade 5 hepatic failure events. Four patients (14.3%) were successfully bridged to liver transplant; one (3.6%) died intraoperatively. Median OS was 13.4 months (95% CI: 3.8 months-not reached (NR)) and median PFS was 3.3 months (95% CI: 3.1-12.1 months). Transplanted patients had longer OS (median NR) compared with non-transplanted patients (median 4.3 months; 95% CI: 3.2-NR; p=0.004). On exploratory analyses, CP score 10 versus >10 (p=0.03) and male sex (p=0.02) were significantly associated with improved OS, while etiology, age, mean liver dose, and tumor volume were not. No factors were associated with grade ≥ 3 toxicity.

Conclusion: In this largest reported series of true CP C patients treated with SBRT, outcomes suggest that SBRT is a feasible treatment option in highly selected patients, particularly those who can be successfully bridged to transplant. From this series, it is not possible to determine how much SBRT added to the morbidity in this high-risk population.

ABSTRACT 43

AGE-RELATED DIVERGENCE OF MIDDLE AND LOWER SEGMENTAL CERVICAL LORDOSIS: A RADIOGRAPHIC ANALYSIS.

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Age-related changes in cervical sagittal alignment are well recognized. However, the specific patterns of segmental cervical adaptation with aging remain incompletely defined. Improved characterization of these changes is essential for understanding global sagittal balance and informing age-appropriate cervical spine evaluation and treatment.

Methods: A retrospective review of standing lateral radiographs from 506 adults without spinal deformity, obtained between 2023 and 2025, was conducted at a single institution. Patients with cervical complaints, prior spinal surgery with instrumentation, or known spinal deformity were excluded. Radiograph reviewers were blinded to patient characteristics. A comprehensive set of fourteen cervical and global sagittal parameters was measured, including the O-C2 angle, C2–C4 Cobb angle (middle cervical lordosis), C5–C7 Cobb angle (lower cervical lordosis), T1 slope, C2–C7 Sagittal Vertical Axis (SVA), thoracic kyphosis, lumbar lordosis, and pelvic parameters. Patients were stratified by decade of age and by geriatric status (≥65 vs. <65 years). The primary outcome was the difference between the C2–C4 and C5–C7 Cobb angles.

Results: A significant shift from lower to middle cervical lordosis occurred with aging. Among the geriatric cohort (n=112), the C2–C4 lordosis angle was 3.97° greater than the C5–C7 lordosis ($p < 0.001$). In contrast, the non-geriatric cohort (n=394) showed a negative difference, with the C2–C4 lordosis angle measuring -1.35° less than the C5–C7 lordosis ($p < 0.001$). This segmental redistribution, however, was insufficient to maintain overall cervical alignment, as the C2–C7 SVA increased from 2.78 cm to 4.78 cm ($p < 0.01$) between the non-geriatric and geriatric cohorts. Furthermore, significant positive correlations were observed between C2–C4 lordosis and T1 slope ($r = 0.15$, $p < 0.001$), C2–C4 lordosis and C2–C7 SVA ($r = 0.26$, $p < 0.001$), and O-C2 and C2-C7 lordosis ($r = -0.10$, $p < .05$), indicating that the compensatory increase in middle cervical curvature may be tied to both T1 slope and C2-C7 SVA.

Conclusion: Aging is associated with a reciprocal decrease in lower cervical (C5–C7) lordosis and an increase in middle cervical (C2–C4) lordosis. This phenomenon appears to be a compensatory mechanism for age-related increases in the T1 slope along with the thoracolumbar spine. This compensation is frequently incomplete, leading to a net increase in positive cervical sagittal malalignment.

ABSTRACT 44

EXPLORING CORNEAL BIOMECHANICAL INFORMATION EMBEDDED IN GLAUCOMA POLYGENIC RISK SCORES.

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Primary open-angle glaucoma (POAG) is a chronic eye disease that is a leading cause of irreversible vision loss and blindness worldwide, affecting around 1-3% of individuals. Polygenic risk scores (PRS) have been shown to identify disease risk for POAG using genome-wide association study (GWAS) data, but the physiologic correlates of genetic risk remain incompletely characterized. This project aims to explore the relationship between glaucoma PRS and corneal hysteresis (CH), which is a measure of the ability of the cornea to resist deformation and is a known risk factor for glaucoma. We hypothesize that a higher PRS will be associated with a lower CH.

Methods: Rigorous multivariable logistic regression models were created with data from 211 patients in ophthalmology practices at the Mount Sinai Health System. These patients were previously assigned a polygenic risk score (PRS) for primary open angle glaucoma (POAG), with 113 individuals with a top 10th percentile PRS (high PRS), and 98 individuals with a bottom 10th percentile PRS (low PRS). Multivariable logistic regression models were constructed with corneal hysteresis as the main predictor and PRS (high vs. low) as the outcome. Covariates in each model include age, sex, predicted ancestry, glaucoma status, hypertension, diabetes mellitus, body mass index (BMI), axial length, central corneal thickness (CCT), mean arterial pressure (MAP), and Goldmann intraocular pressure (IOP).

Results: The mean age of the study population was 65.2 (±7.4) years, with an ancestry makeup of 35% African, 26% Admixed American, 36% European, 1.9% East Asian, and 1.9% South Asian. The average CH overall was 10.2 (±1.4) mmHg, 10.0 (±1.5) mmHg in the high PRS group, and 10.5 (±1.2) mmHg in the low PRS group. Multivariable logistic analysis showed a statistically significant inverse relationship between CH and a high PRS, where a higher CH was associated with decreased odds of a high PRS (OR = 0.71; CI = [0.53, 0.96]; p = 0.026).

Conclusion: We found that a lower CH is significantly associated with a high POAG PRS, suggesting that the biomechanical properties of the cornea may reflect components of genetic risk for glaucoma. Future studies in larger populations are warranted to validate these results and further explore the mechanistic pathways linking corneal biomechanics and genetic risk for POAG.

ABSTRACT 45

COST AND CLINICAL OUTCOMES OF DIRECT-TO-IMPLANT VERSUS TWO-STAGE TISSUE EXPANDER BREAST RECONSTRUCTION IN PATIENTS WITH OBESTIY: A MATCHED COST ANALYSIS.

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Implant-based breast reconstruction is performed as single-stage direct-to-implant (DTI) or two-stage tissue expander (TE) reconstruction. Obesity increases risk of postoperative infection, wound complications, and reconstructive failure, so patients with obesity are preferentially offered TE reconstruction. However, the staged nature of TE reconstruction may increase utilization and costs without clinical benefit. Literature comparing outcomes and costs of DTI versus TE in obese patients is limited. With rising obesity prevalence and emphasis on value-based care, this study compared clinical outcomes and hospital costs of DTI versus TE reconstruction among patients with obesity.

Methods: A retrospective review identified patients with obesity (BMI ≥30) who underwent implant-based reconstruction from 2009–2022 at a single academic center. Patients were matched 1:2 (DTI:TE) using Mahalanobis distance on age, BMI, smoking, radiation, chemotherapy, diabetes, and hypertension. Balance was assessed using standardized mean differences (SMD <0.10). Total costs included hospital costs from index surgery through one year after final reconstruction, incorporating operative time, adjuncts, LOS, ED visits, readmissions, and reoperations. Primary outcomes were total cost and complication-related cost. Secondary outcomes included skin flap necrosis, fat necrosis, seroma, hematoma, dehiscence, infection, explant, and capsular contracture. Matched analysis used cluster-robust gamma regression and logistic regression, adjusting for implant plane, laterality, and residual imbalance.

Results: After matching, 66 patients were included (22 DTI, 44 TE). Baseline characteristics were balanced; the largest residual imbalance was hypertension (50.0% vs 59.1%; SMD=0.180). Laterality did not differ, but TE was more often prepectoral (43.2% vs 13.6%; p=0.026).

Adjusted analysis showed DTI had 15% lower total costs (aRR 0.85; p=0.021) and 20% shorter LOS (aRR 0.80; p=0.044). Although DTI had higher odds of skin flap necrosis (aOR 5.41; p=0.044), this did not increase OR time (aRR 1.04; p=0.948) or complication-related costs (aRR 0.62; p=0.675).

Conclusion: DTI breast reconstruction demonstrates a cost advantage over TE reconstruction in patients with obesity, without increasing odds of most complications. As implant-based reconstruction and obesity rise, these findings support the consideration of DTI as a safe, cost-effective option for select patients with obesity.

ABSTRACT 46

ASSOCIATION OF TIME OF DAY AND POST-OPERATIVE DELIRIUM USING CAM-S.

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Post-operative delirium (POD) is a significant complication in surgical patients over 65 and is associated with increased likelihood of cognitive decline, longer hospital stays, and mortality. The Confusion Assessment Method Severity (CAM-S) measures delirium severity, but its application in the Post Anesthesia Care Unit (PACU) has not been well studied. This study investigated the rate of delirium and its association with perioperative factors in older patients recovering from surgery in the PACU.

Methods: A prospective observational cohort study was conducted of adults ≥65 years recovering in the PACU after surgery. Delirium was assessed in the PACU using CAM-S (0-7 scale with ≥3 being positive) once patients met standardized recovery criteria. The analyses presented include preliminary data collected from 7/7/25-8/21/25, with data collection ongoing. Thus, these results are preliminary and will be revisited. Associations between time of day and CAM-S scores were analyzed with linear regression using RStudio, and perioperative factors were compared between patients with CAM-S ≥3 vs <3 using t-tests.

Results: This preliminary analysis included 204 patients (mean age 74.3 years; 51% female; 69% White, 8.3% Latino/a/x, 6.8% Black, 5.3% Asian). The average CAM-S score was 0.9 and 23 patients (11.9%) screened positive for POD. Among 101 with complete demographic data, later assessment time was associated with higher CAM-S scores (slope = 0.00156 points per minute; $p = 0.0066$; $R^2 = 0.036$). Patients with CAM-S ≥ 3 had longer median surgeries (296 vs 239 min) and fasting times (14.9 vs 14.4 hours), but these differences were not statistically significant ($p = 0.20$, $p = 0.71$). This analysis of preliminary data of CAM-S assessments on 204 patients aged ≥65 recovering from surgery in the PACU revealed that the incidence of post-operative delirium was 11.9%.

Discussion: Given the association of POD with adverse health outcomes including earlier onset and more severe cognitive decline, this is concerning. Additionally, we found an association between later time of day and increased severity of delirium per CAM-S assessments. Potential contributors include length of time under general anesthesia and longer preoperative wait times, among many others. These preliminary findings suggest that earlier surgery scheduling or counseling older patients about risks of longer procedures may help reduce POD.

ABSTRACT 47

VALIDATION OF A TWO-STAGE QUESTIONNAIRE AND ACTIGRAPHY SCREENING FOR ISOLATED REM SLEEP BEHAVIOR DISORDER IN A MULTICENTER CASE-CONTROL COHORT.

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Isolated rapid eye movement sleep behavior disorder (iRBD) is a prodromal marker of synucleinopathies. Yet most cases remain undiagnosed due to the poor predictive value of questionnaires and limited access to video-polysomnography (vPSG). We evaluated a 2-stage screening strategy combining a 4-item questionnaire on dream enactment, subjective hyposmia, constipation and orthostatic symptoms (stage 1), followed by home wrist actigraphy (stage 2).

Methods: Participants aged 40-80 without a diagnosis of neurodegenerative disease were recruited from five Mount Sinai and Stanford cohorts. All iRBD cases were vPSG-confirmed. The full cohort included 396 participants (99 cases, 297 controls; mean age 64 ± 11; 55% male), of which 289 participants completed the questionnaire, 236 completed 2-week wrist actigraphy, and 129 (75 cases, 54 controls) both assessments. The wearable-based algorithm was built on 4 movement features (mean motor activity, activity index, short or long immobile bouts, twitch activity). Questionnaire-based and wearable-based models were trained with nested cross-validation using XGBoost.

Results: The dream enactment question alone achieved an area under the curve (AUC) of 0.85, which improved to 0.86 with the full 4-item questionnaire. Across the questionnaire dataset (95 cases, 194 controls), dream enactment showed 78% sensitivity and 92% specificity, while the 4-item model achieved 78% sensitivity and 91% specificity. Actigraphy alone achieved an AUC of 0.88, with 82% sensitivity and 84% specificity. At an assumed population prevalence of 1.5%, adjusted positive predictive value was 10% for the 4-item questionnaire and 6% for actigraphy. Among those completing both assessments (75 cases, 54 controls), the 2-stage protocol yielded 68% sensitivity and 100% specificity when preselecting individuals based on the dream-enactment question alone, compared with 73% sensitivity and 100% specificity using the full 4-item questionnaire.

Conclusion: A 2-stage protocol combining questionnaire and actigraphy demonstrated excellent specificity, good sensitivity, and robust generalization for iRBD across both centers and cohorts. This low-cost, scalable strategy is compatible with widely used wearable devices and warrants validation in community-based populations.

ABSTRACT 48

PREDICTING RISK AND INVESTIGATING OUTCOMES USING PATIENT-REPORTED AND COMMUNITY LEVEL DATA (PRIORITY): PRELIMINARY ASSOCIATIONS BETWEEN DIAGNOSIS OF ASTHMA/COPD AND NEIGHBORHOOD VULNERABILITY AMONG ADULTS WITH CHRONIC ILLNESS.

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Asthma and COPD are common chronic conditions that disproportionately affect underserved communities. Despite improvements in air quality and medical interventions, this gap remains. Individual-level risk factors like smoking are well-understood; less is known about how neighborhood-level social factors impact respiratory disease burden.

Methods: We analyzed preliminary data from PRIORITY, a prospective cohort study of randomly selected adult emergency department patients with chronic illnesses and their social determinants of health. Each patient's residential address was linked to their neighborhood's Social Vulnerability Index (SVI), a composite score ranging from 0 to 1, reflecting area-level structural disadvantage across four domains: socioeconomic status, household characteristics, racial/ethnic minority composition, and housing/transportation. The primary outcome was a diagnosis of asthma and/or COPD at enrollment. We conducted bivariate logistic regression to assess associations between asthma/COPD and both overall SVI and its four domains, reporting odds ratios (OR) and 95% confidence intervals (CI).

Results: Among 338 participants (mean age 53.5 years, 62.7% female, common comorbidities included hypertension, diabetes), higher SVI was associated with increased odds of asthma/COPD (OR: 3.95, 95% CI: 1.33-12.1). Significant associations were also found for neighborhood-level socioeconomic status (OR: 3.32, 95% CI: 1.32-8.57) and racial/ethnic minority composition (OR: 7.32, 95% CI: 1.81-31.6).

Conclusion: These findings highlight structural inequities in respiratory disease burden and emphasize the need for public health interventions. Future research should integrate individual-level risk factors and physical environment factors (air pollution, land use, etc.) with neighborhood-level vulnerability measures to better understand how they interact to shape respiratory outcomes in disadvantaged communities.

ABSTRACT 49

RISK FACTORS FOR HERPES ZOSTER OPHTHALMICUS IN A MEDICARE POPULATION.

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Herpes zoster ophthalmicus (HZO) can lead to vision-threatening complications such as keratitis, uveitis, retinitis, and optic neuritis. However, population-level data identifying risk factors for these outcomes in older adults are limited. Understanding demographic and comorbid predictors of ophthalmic sequelae can inform risk stratification and management.

Objective: To identify demographic and comorbid predictors of ophthalmic complications among Medicare beneficiaries aged ≥65 years with HZO.

Methods: We conducted a retrospective cohort study using 2011–2015 national Medicare claims data. Patients with incident HZO were identified by ICD-9 codes and outcomes (corneal disease, uveitis, retinitis, and optic neuritis). Multivariable logistic regression estimated adjusted odds ratios (ORs) and 95% confidence intervals (CIs). Models adjusted for sex, race/ethnicity, age, diabetes, chronic kidney disease, hypertension, anxiety, depression/major depressive disorder, and dysthymic disorder.

Results: Among 3,377,144 beneficiaries, there were 1,499 (corneal), 766 (uveitis), 1,974 (corneal/uveitic combined), 41 (retinitis), and 28 (optic neuritis) cases. Female sex (OR = 1.15, 95% CI [1.03, 1.28], p = 0.011) and older age (OR = 1.03, 95% CI [1.02, 1.03], p < 0.001) were associated with increased risk of corneal complications, while Black race (OR = 0.39, 95% CI [0.29, 0.50], p < 0.001) and Hispanic ethnicity (OR = 0.36, 95% CI [0.21, 0.63], p < 0.001) were protective. Hypertension showed the strongest association with ophthalmic complications across all outcomes (, cornea: OR = 3.95, 95% CI [3.40, 4.59], p < 0.001; uveitis: OR = 3.43, 95% CI [2.79, 4.21], p < 0.001).

Conclusion: Hypertension, white race, and female gender were associated with higher odds of ophthalmic complications of HZO. These findings underscore the intricate relationship between demographic/systemic health factors and HZO complications. Future research should work towards effective strategies for prevention and improve access to ophthalmic care for high-risk patients.

ABSTRACT 50

IMPACT OF RADIATION THERAPY ON EXTRAOCULAR MUSCLE SIZE AND ORBITAL TISSUES.

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Radiation therapy can lead to long-term complications in patients including fibrosis and scarring of skeletal muscle. Previous studies have noted facial tissue atrophy in patients who receive radiation treatment (RT) for head and neck cancers, resulting in eyelid, lacrimal gland, and orbital complications. However, no study to date has examined its impact on the size of extraocular muscles. This study aims to quantify changes in extraocular muscles and other orbital tissues following radiation.

Methods: Records from patients in the Mount Sinai electronic medical record who received orbital radiation from 06/01/2016 to 06/01/2023 were retrospectively reviewed. Patients were grouped based on radiation dose into high-dose and low-dose cohorts. Patients who did not have at least one pre-radiation CT scan and at least one post-radiation CT scan within 6 weeks to 36 months were excluded. Length and width measurements of the optic nerve and extraocular muscles, as well as orbital fat density measurements, were obtained using PACS software. Longitudinal analysis of these measurements was completed with linear mixed effects modeling.

Results: Measurements from 26 patients (52 eyes) were included in the analysis, with longer follow-up in the high-dose cohort (10 patients; median follow-up 18.1 months) than the low-dose cohort (16 patients; median follow-up 7.2 months with no observations ≥ 30 months). The high-dose cohort was found to have significant early shrinkage in medial rectus (MR) length ($p < 0.05$ 4–30 months post-RT) and optic nerve length ($p < 0.05$ 4–36 months post-RT), as well as late shrinkage in lateral rectus (LR) length ($p < 0.05$ 30–36 months post-RT). Muscle widths in the high-dose group remained largely stable, with the exception of the superior muscle group (SMG), consisting of the superior rectus and superior oblique, which increased significantly ($p < 0.05$ 4–24 months post-RT). Orbital fat density increased significantly ($p < 0.05$ 4–24 months post-RT). No significant changes were observed in the low-dose cohort.

Conclusions: Our study suggests remodeling of orbital structures following high-dose RT, including the optic nerve, orbital fat, and the SMG, MR, and LR muscles. These findings are preliminary and should be interpreted in the context of limited late follow-up in the low-dose RT group. Larger cohorts and structure-specific orbital dosimetry are needed to better define dose-response relationships.

ABSTRACT 51

BUILDING EQUITY FROM WITHIN: EMPLOYEE LEVERAGED BUYOUTS AS A MEANS TO STABALIZE THE LONG-TERM SUPPORTS AND SERVICES INDUSTRY IN RESPONSE TO HR1.

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The U.S. long-term services and supports (LTSS) industry is at a critical inflection point. Chronic undercompensation, high turnover, and severe staffing shortages leave the sector unable to meet current demand as it braces for a projected 40% increase in workforce demand by 2037 and increasing demographic pressures. Federal budget reductions under H.R.1, restrictive immigration policies, and shrinking Medicaid safety nets destabilizing the low-wage workforce that sustains it threatens the access to essential care.

This study reviews LTSS direct care worker and Employee Shared Ownership Program (ESOP) literature, supported by regression-based projections of future LTSS spending, Medicaid demand, and direct care workforce size. Historical data was drawn from MACPAC Medicaid beneficiary enrollment data, CMS LTSS Expenditure Reports, and IPUMS USA census data (OCC2010 codes: nursing/home health aides (3600) and personal care aides (4610) were used to estimate the direct care workforce). We use this framework to establish a conceptual model for how Employee-Led Buyouts (ELBOs) can transition LTSS firms to ESOP structures, stabilizing the workforce and addressing growing demand.

The LTSS sector demonstrates high financial and workforce vulnerability. Dual-eligible seniors and people with disabilities comprise 23% of Medicaid beneficiaries but over 50% of expenditures. Medicaid finances roughly half of all LTSS and two-thirds of HCBS, amplifying exposure to funding cuts. LTSS expenditures are projected to grow 62% by 2050 (CAGR: 1.61%; 95% CI: $307B–$338B). The combined Medicaid disabled and dual-eligible beneficiary population is projected to grow 85% (CAGR: 2.22%) to 29.4M (95% CI: 27.0M–31.7M) by 2050, while the direct care workforce grows 60% (CAGR: 1.70%) to 7.3M (95% PI: 6.7M–7.8M), widening the beneficiary-to-worker ratio from 3.5:1 today to 3.6:1 (2030), 3.8:1 (2040), and 4.0:1 (2050). Instability compounds the crisis as 49% of direct care workers earn below 200% of the federal poverty line, turnover reaches 65% in home care and 90% in nursing homes, and 77% of HCBS providers turn away referrals due to staffing shortages. ESOP studies in other high-turnover industries demonstrate voluntary quit rates one-third the national average, 8% higher median hourly wages, 33% higher median annual income, and 2–2.4% faster annual growth post-ESOP transition, profound effects that can help stabilize the LTSS workforce and attract talent to meet the growing need.

ABSTRACT 52

INVESTIGATING THE PREVALENCE AND PRESENTATIONS OF HYPERTENSION IN HYPERMOBILITY-ASSOCIATED DYSAUTONOMIA.

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Ehlers-Danlos syndrome (hEDS) and hypermobility spectrum disorders (HSDs) are connective tissue disorders affecting younger, predominantly female (~90%) patients. Dysautonomia affects up to 65% of patients and is associated with systemic symptoms. Although most have normal or low-normal blood pressure (BP), a subset develops hypertension (HTN) with or without hyperadrenergic features. The prevalence of HTN in hEDS/HSD-related dysautonomia is unknown, and standard antihypertensive therapies may pose concerns.

Objectives: To evaluate HTN among patients with hEDS/HSD-associated dysautonomia by 1) defining HTN prevalence and 2) describing response to antihypertensive therapy.

Methods: We conducted a retrospective review of patients with hEDS/HSD seen in the Mount Sinai Cardiovascular Genetics Program (2015–2024). HTN was defined as BP ≥130/80 mmHg on ≥2 occasions or prior diagnosis with antihypertensive treatment. Demographic and clinical data were drawn from the electronic health record (EHR) for baseline characteristics and BP-related encounters. Patients were excluded for absent BP data, alternative connective tissue disorders (e.g., Marfan syndrome), or isolated dysautonomia.

Results: A total of 344 individuals with hEDS/HSD were included (mean age 33.7 years; range 8-73 years): 106 (30.8%) without dysautonomia and 238 (69.2%) with dysautonomia. Incident HTN occurred more frequently in patients without dysautonomia (12.9% vs. 6.3%, p=0.076), though not significant. Patients with dysautonomia were more likely to be prescribed BP raising medications (i.e., stimulants, mineralocorticoids; 25.6% vs. 11.3%, p=0.004), while use of antihypertensives was similar. Within the dysautonomia cohort, 31 (13.0%) patients had HTN and/or hyperadrenergic features based on elevated BP, prior diagnosis, or monitoring recommendations. Of these, 17 had treated HTN and 7 were identified by elevated BP reading at time of intake. In 18 patients with detailed review, beta blockers often exacerbated BP and/or symptoms (7, 38.9%). Calcium channel blockers were most frequently effective (8, 44%), followed by ivabradine (3, 17%).

Discussion: These findings suggest that while most patients with hEDS/HSD-related dysautonomia do not exhibit increased overall HTN prevalence, a clinically distinct subgroup demonstrates hypertensive and hyperadrenergic features requiring individualized management. Further studies are needed to define optimal screening and treatment strategies.

ABSTRACT 53

TWISTING INJURIES MORE COMMON LOCALLY: A COMPARATIVE ANALYSIS OF GERIATRIC ANKLE TRAUMA AND AGE-RELATED COMORBIDITIES.

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Older adults are particularly vulnerable to ankle injuries due to age-related declines in flexibility, strength, proprioception, and bone density. Few studies have focused on geriatric populations or compared injury characteristics across care settings. This study compares the National Electronic Injury Surveillance System (NEISS) with a local cohort from Mount Sinai Hospital to examine injury mechanisms, demographics, treatment, and outcomes, aiming to inform age-specific prevention and optimize care.

Methods: “Ankle injury” was defined as any acute traumatic diagnosis involving the ankle, excluding non-traumatic conditions. NEISS data (2021–2024) were queried for patients ≥65 using ankle body part codes and narratives to classify mechanisms. For the local cohort, an IRB-approved retrospective review identified patients ≥65 seen by Dr. Meghan Kelly (Jan 1, 2021–Dec 31, 2024; n=1,855). A rule-based NLP filter identified 131 patients, with 88 confirmed by chart review. Data included demographics, injury characteristics, treatment, comorbidities, and outcomes. Descriptive statistics and comparative analyses (chi-square, Mann–Whitney U) were performed.

Results: The NEISS cohort included 7,009 patients and the local cohort 88. Age (74.9 ± 7.8 vs 75.7 ± 7.6; $p=0.1090$) and sex (majority female; $p=0.5783$) were similar. Racial composition differed ($p<0.0001$), with more White and Black patients nationally and fewer Asian patients. Fractures were most common (45.4% vs 56.8%), followed by sprains/strains (24.3% vs 33.0%). Low-energy falls were more frequent nationally (54.1%), while twisting injuries were more common locally (33.0%; $p<0.0001$). Most national injuries occurred at home (51.8%). Locally, treatment was primarily non-operative immobilization (58.9%), with median presentation at 4 days. Comorbidities included osteoporosis (23.9%), diabetes (18.2%), and balance impairment (18.2%). Most patients lacked prior falls (94.3%) or neuropathy (92.0%).

Conclusion: Key differences exist between national and urban data. Higher rates of twisting injuries locally may reflect environmental factors such as crowded areas, uneven sidewalks, and stair use. The local cohort showed more conservative treatment, delayed presentation, and reliance on general anesthesia, highlighting targets to improve access and surgical risk stratification. Comorbidity patterns, including diabetes, underscore the need for multidisciplinary care.

ABSTRACT 54

SOCIOECONOMIC STATUS AND OUTCOMES FOLLOWING MINIMALLY INVASIVE EVACUATION OF INTRACEREBRAL HEMORRHAGE.

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Intracerebral hemorrhage (ICH) carries high morbidity and mortality, and can vary depending on socioeconomic disparities. The Area Deprivation Index (ADI) is a tool that measures neighborhood disadvantages. This study aims to explore the association between ICH presentation among more and less disadvantaged populations, and evaluate the relationship between ADI and outcomes following minimally invasive surgery (MIS) for ICH evacuation.

Methods: Retrospective chart review included patients admitted to an urban health system who underwent MIS for ICH evacuation between 2016-2023. Baseline characteristics and clinical outcomes were collected. Patient zip codes were matched to their respective ADI scores using the Neighborhood Atlas. Patients were categorized into more and less disadvantaged using the median ADI as the cutoff. Welch's t-tests and two-sample z-tests for equality of proportions were used to compare demographics and outcomes, with a good functional outcome defined as mRS 0–3. Multivariable logistic regression was used to identify independent predictors of poor functional outcome. Significance was defined as $p<0.05$.

Results: 259 patients were included, of which 145 patients were defined as less disadvantaged (56%) and 124 (44%) patients were defined as more disadvantaged. Patients in the less disadvantaged group were older ($p=0.004$). A significantly greater proportion of Hispanic patients were classified as more disadvantaged compared with White patients ($p = 0.005$) and Black patients ($p = 0.028$). Patients in the less disadvantaged group were also more likely to be on antiplatelet medication compared to the more disadvantaged group ($p=0.035$). No significant differences were found in baseline rates of diabetes or hypertension, pre-op ICH volume, or ICH depth. Following MIS evacuation, no significant differences were observed in 90-day mRS scores, surgical rebleed rates, or discharge destination between the more- and less-disadvantaged groups. On multivariable logistic regression, ADI was not independently associated with poor functional outcome. Higher initial NIHSS ($p<0.001$), presence of IVH ($p<0.001$), and deep hematoma location ($p=0.009$) were independently associated with poor outcome.

Conclusion: Differences in initial baseline patient presentation were observed across levels of socioeconomic disadvantage, as measured by the ADI. Despite this, postoperative outcomes did not differ between groups following MIS for ICH evacuation.

ABSTRACT 55

ASSESSING EFFICACY AND PROVIDER UPTAKE OF TARGETED PREP INITIATION ALERTS THROUGH ELECTRONIC MEDICAL RECORDS.

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According to CDC guidelines, individuals diagnosed with an STI in the past 6 months or those with multiple partners and inconsistent condom use are considered at risk and may benefit from PrEP. Yet clinicians often struggle to prioritize PrEP discussions due to limited time, cognitive burden, and misconceptions about eligibility. Best Practice Alerts (BPAs) in electronic health records are an evidence-based quality improvement strategy designed to improve prescription and implementation of life-saving interventions without disrupting workflow. This study aimed to investigate whether BPAs can increase PrEP prescription rates for eligible adults in a large, urban healthcare system.

Methods: In November 2024, the Mount Sinai Health System launched a BPA that recommended initiation of PrEP for all patients with a documented STI in the past 6 months. The BPA was developed through an iterative beta-testing approach with LGBTQ-focused primary care providers and health informaticists. In this implementation study, we assessed performance of the BPA by identifying how many times the BPA was triggered, the extent of provider engagement, and quantity of PrEP prescriptions signed to individuals flagged by the BPA. Data on system-wide PrEP prescriptions before and after launch of the BPA were also assessed to determine if the presence of the alert increased the likelihood of providers considering PrEP initiation.

Results: Between November 2024 to November 2025, the BPA identified 42,851 outpatient clinical encounters with patients considered high-risk for HIV. Patients most eligible for PrEP initiation were most frequently between ages 25-39, female, and self-identified as heterosexual. One year before BPA launch, there were 10,067 followup encounters that met BPA trigger criteria. Of these encounters, 396 (6.38%) resulted in patients being prescribed PrEP subsequently. One year after BPA launch, there were 6,153 followup encounters that met BPA trigger criteria, of which 478 (7.77%) led to subsequent PrEP prescription, which was a statistically significant increase.

Conclusion: BPAs can significantly improve prescription of PrEP to patients at risk of HIV and are feasible in large healthcare systems. Initiatives that focus on further educating providers on indications for PrEP prescription are instrumental to increasing PrEP prescription rates and thereby reducing HIV transmission.

ABSTRACT 56

STRICTURE CLASSIFICATION OF PEDIATRIC ESOPHAGEAL STRICTURES (SCOPES): A NOVEL TOOL TO PREDICT RESPONSE TO ENDOSCOPIC THERAPY.

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Objectives: Esophageal anastomotic stricture is a common complication following esophageal atresia (EA) repair. While multiple endoscopic therapies exist, predicting individual stricture response remains challenging. Existing classification systems focus primarily on luminal diameter and do not account for complex physical characteristics of the stricture. We developed and evaluated a novel endoscopic scoring tool, Stricture Classification of Pediatric Esophageal Strictures (SCOPES), to determine if physical features are predictive of treatment response. In addition to its predictive utility, SCOPES aims to standardize the description of and improve communication of stricture morphology across providers and institutions.

Methods: A retrospective cohort study was conducted on EA patients treated at a tertiary referral center between 2019–2024. Patients with ≥2 endoscopies and documented SCOPES scores were included. The SCOPES tool categorizes strictures based on diameter, length, scar band intrusion, symmetry, and presence of diverticula. Multivariable mixed-effects regression models were used to analyze associations between SCOPES characteristics and the primary outcome of number of therapeutic endoscopies within six months.

Results: 70 patients (238 endoscopies) met inclusion criteria. In multivariable analysis, symmetric strictures and those with highly intrusive scar bands were significantly associated with a greater number of therapeutic endoscopies within six months. Two complications were observed, both managed without long-term sequelae.

Conclusions: The SCOPES classification tool identifies physical stricture features that significantly influence response to endoscopic therapy. Circumferential symmetry and scar tissue protuberance were associated with higher treatment burden, suggesting these characteristics may guide therapeutic decision-making. SCOPES may aid in individualizing endoscopic management of pediatric esophageal strictures and warrants prospective validation.

ABSTRACT 57

EXAMINING THE RELATIONSHIP BETWEEN CUMULATIVE RADIOTHERAPY DOSE TO THE NIPPLE-AREOLAR COMPLEX AND BREAST SENSORISEXUAL FUNCTION.

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Sexual dysfunction is prevalent among breast cancer patients, and preserving sexual health is vital for well-being and quality of life. Breast conserving therapy, which often includes endocrine therapy, has been linked to sexual toxicity, yet the contribution of radiation therapy (RT) dose to the nipple-areolar complex (NAC) to breast sensorisexual dysfunction and sexual toxicity has not been explored. This study examined the relationship between cumulative RT dose and late NAC function during sexual activity using patient-reported outcomes.

Methods: We surveyed adult female and gender-diverse patients who received local whole or partial breast EBRT for breast cancer ≥ 12 months prior, reported breast-involved sexual activity in the last 30 days and completed the Breast Sensorisexual Function (BSF) questionnaire. BSF items allowed participants to rate measures of function and dysfunction on a 5-point Likert scale, and we adapted the BSF to generate two distinct general domains for satisfaction/pleasure and pain/discomfort. Cumulative NAC D95%, D50%, and D2% were extracted as EQD2 (α/β=3). Correlations were evaluated with Spearman's correlation coefficient (Rs) as follows: strong >0.6, moderate 0.4–0.59, weak 0.2–0.39. PROMIS Sexual Function and Satisfaction (PROMIS) scores were individually analyzed and correlated with BSF outcomes.

Results: 41 sexually active participants with a mean age of 61 (SD 11) were included in this analysis. Among the participants, 79% indicated that their breasts held some level of importance in their sexual activity. 70% reported suboptimal (some, little or no) satisfaction with the sensation in their breasts, while 24% of participants reported experiencing discomfort or pain. D2% demonstrated a weak negative correlation with the satisfaction/pleasure domain (Rs = -0.31), while D50% and D95% showed no correlation. D2% and D50% exhibited weak and moderate correlations with pain/discomfort (Rs = 0.32; Rs = 0.45), whereas D95% showed no correlation. In addition, BSF satisfaction/pleasure significantly correlated with global sexual satisfaction and orgasm pleasure in PROMIS.

Conclusions: These preliminary findings suggest higher RT dose to the NAC may be associated with late changes to breast sensorisexual and overall sexual function. This study represents an initial step toward clarifying the impact of RT on sexual function in breast cancer patients to inform clinical care and improve post-treatment quality of life.

ABSTRACT 58

ALCOHOL USE DISORDER IS INDEPENDENTLY ASSOCIATED WITH ADVERSE OUTCOMES FOLLOWING OPERATIVE CRANIOFACIAL FRACTURE REPAIR.

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Purpose: While acute alcohol intoxication is a well-established catalyst for traumatic injury, the influence of chronic alcohol use disorder (AUD) on operative outcomes in craniofacial trauma remains poorly characterized. This study evaluated whether AUD independently affects postoperative outcomes and continuity of care following facial fracture repair.

Methods: A retrospective cohort study was conducted of patients undergoing operative repair of craniofacial fractures at a multi-hospital urban trauma system between 2019 and 2025. Alcohol exposure was assessed in two contexts: 1) acute alcohol use (documented intoxication or blood alcohol concentration >0.08% during index emergency department encounter); and 2) chronic alcohol use (documented diagnosis of AUD). Outcomes included length of stay (LOS), outpatient versus inpatient repair, postoperative complications, reoperation, and follow-up. Multivariable logistic regression and generalized linear models were used to examine associations while adjusting for demographic and clinical covariates.

Results: AUD was present in 11.5% (n=59) of 515 patients undergoing operative craniofacial fracture repair. AUD was associated with male sex (89.8% vs. 73.7%, p=0.025), Medicaid coverage (aOR 6.54 vs private, p<0.001), and mandible fractures (aOR 2.98, p<0.001). In multivariable models, AUD was independently associated with a 69.4% increase in LOS (p=0.004) and increased odds of any complication (aOR 4.31; p=0.002), infection (aOR 4.24; p=0.014), and reoperation (aOR 2.55; p=0.039). Patients with AUD were also less likely to undergo outpatient repair (aOR 0.26; p=0.003) and had reduced odds of follow-up (aOR 0.33; p<0.001).

In contrast, acute alcohol use—also associated with male sex (p=0.038), Medicaid coverage (aOR 1.60 vs private, p=0.049), mandible fractures (aOR 2.33, p<0.001), and younger age (median 36.5 vs. 40.5 years, p=0.033)—was not associated with differences in LOS, complications, or reoperation after adjustment. However, acute alcohol exposure was associated with decreased likelihood of outpatient repair (aOR 0.38, p=0.003) and shorter follow-up duration (adjusted mean 78 vs 132 days, p=0.002).

Conclusions: AUD is a clinically relevant chronic comorbidity in operative craniofacial trauma, independently associated with increased postoperative morbidity, prolonged hospitalization, and reduced continuity of care following facial fracture repair. These effects were not observed with acute alcohol intoxication.

ABSTRACT 59

REDESIGNING EMERGENCY MEDICAL SERVICES UNDER H.R.1 - OPPORTUNITIES FOR INNOVATION.

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Emergency Medical Services (EMS) function as a critical safety net in the U.S. healthcare system, yet they face longstanding financial and operational challenges driven by rising non-urgent 9-1-1 utilization and transport-based reimbursement models. The One Big Beautiful Bill Act (H.R.1, 2025) is projected to reduce federal Medicaid funding (≈$1T/10 years), potentially increasing uncompensated care and straining EMS capacity.

Hypothesis: Layered EMS redesign programs including secondary nurse triage, 9-8-8/9-1-1 behavioral-health diversion, mobile integrated health/community paramedicine (MIH-CP), and reimbursable treatment-in-place/alternative destinations will reduce low-acuity ambulance dispatch/transport and downstream emergency department (ED) use.

Methods: We conducted a structured, hypothesis-driven review of 23 U.S. based peer reviewed studies and key federal evaluations/policy documents published between 2015-2025. Sources were selected based on relevance to EMS financing, dispatch diversion, behavioral-health crisis routing, MIH-CP interventions, and CMS's Emergency Triage, Treat, and Transport (ET3) model. Extracted outcomes included dispatch and transport rates, ED utilization, hospitalization, mortality, and cost-revenue metrics.

Results: National cost data show EMS financial vulnerability (mean cost/transport $2,673 vs mean revenue/transport $1,147). In a randomized trial of nurse-led triage of low-acuity 9-1-1 calls in Washington, DC (n=6,053), dispatch decreased by 41% points (97%→56%), transport decreased by 28% points (73%→45%). Among Medicaid callers, 24-hour nonemergent ED visits decreased by 4.4% points (29.5%→25.1%) and primary-care visits increased by 5.7% points (2.5%→8.2%). A MIH-CP meta-analysis demonstrated lower ED visit risk (risk ratio 0.56; 95% CI 0.42–0.74; $p<0.001$), though heterogeneity was substantial. 988 performance data reported ~98% of contacts resolved without additional emergency services. CMS ET3 treatment-in-place (n=3,161) had a 28% 5-day ED use and 1.6% mortality ; alternative destination transport (n=257) had a 51% 5-day ED follow-up.

Conclusions: Evidence supports EMS redesign as a plausible capacity-preservation strategy. Nevertheless, the degree to which redesign strategies translate into system-wide capacity preservation will depend on infrastructure interoperability and scalable implementation. Continued prospective evaluation is necessary to assess long-term operational and equity outcomes.

ABSTRACT 60

BRIDGING THE GAP; ALIGNMENT OF ACCME-ACCREDITED CME ACTIVITIES WITH ACOG CLINICAL GUIDELINES ON SUBSTANCE USE IN PREGNANT AND POSTPARTUM INDIVIDUALS.

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Substance use disorder (SUD) is highly stigmatized among pregnant and postpartum individuals and many clinicians do not feel equipped to identify and treat this population. Continuing Medical Education (CME) activities, nationally standardized by the Accreditation Council for Continuing Medical Education (ACCME), address gaps in knowledge. Obstetrical CME content should reflect clinical guidance from professional medical societies, like American College of Obstetricians and Gynecologists (ACOG), to ensure dissemination of relevant, evidenced-based education on evolving clinical issues. However, alignment between content in ACOG guidelines and ACCME activities is unclear.

Methods: Titles and descriptions from 453 ACCME activities (January 2021–November 2024) related to substance use and pregnancy were analyzed to develop a topic codebook and calculate code frequencies. ACOG clinical guidance documents were gathered from acog.org/clinical between February 2025 and June 2025. 22 documents were analyzed via literature review to assess coverage of codebook topics, distinguishing between the frequency with which documents mentioned [M] a code (relevant sentences about the topic) or provided guidance [G] (specific clinical recommendations). Code frequency alignment was assessed using a Spearman rank correlation coefficient and Z-tests with a Bonferroni-corrected significance threshold.

Results: Moderate alignment between ACCME activities and ACOG clinical guidance documents was found (ρ=0.575). ACOG guidance more frequently addressed SUD screening ([M] 72.7%, ($p<0.001$) [G] 63.6% ($p<0.001$) vs 29.5%) while ACCME activities focused more on treatment (61.1% vs [M] 45.5% ($p=0.15$), [G] 36.4%, ($p=0.02$)). Breastfeeding was covered more in ACOG guidance ([M] 54.6%, [G] 40.9% vs. 5.3%, ($p<0.001$)). Opioids were the most frequently represented substance in ACCME activities (39.7%), whereas alcohol ([M] 68.2%, [G] 45.5%) and cannabis ([M] 54.6%, [G] 40.9%) led in ACOG guidance. Benzodiazepines were infrequently addressed in both datasets. ACOG guidance mention stimulants, but with limited guidance ([M] 36.36%, [G] 4.55%).

Discussion: Identifying areas of incongruence between ACOG clinical guidance and ACCME activities, highlights potential content gaps and opportunities to strengthen clinician education on maternal SUD. Improving alignment has the potential to optimize CME programming, thereby fostering evidence-based, high standards of care for this population.

ABSTRACT 61

QUANTIFYING RESIDUAL INTRACEREBRAL HEMORRHAGE AFTER MIS ICH EVACUATION: A COMPARATIVE STUDY OF VIZ.AI, ABC/2 AND SEMI-AUTONOMOUS SEGMENTATION.

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Accurate quantification of residual intracerebral hemorrhage (ICH) volume after surgical evacuation is essential for prognostication, post-operative management, and serves as a key outcome measure in clinical trials. Traditional methods like the ABC/2 formula offer rapid estimates but lack precision and are prone to inter-operator variability, particularly when the residual blood after surgical evacuation no longer approximates an ovoid as assumed by the ABC/2 formula. Semi-Autonomous Segmentation (SAS), involving manual delineation of hemorrhage across cross-sections, yields detailed volume measurements but is time-intensive and lacks scalability for routine post-operative use. AI-based tools such as VIZ ICH aim to improve speed, consistency, and integration into clinical workflows.

Objective: To evaluate the accuracy and reliability of VIZ.ai in measuring residual ICH volume post-evacuation, compared with both ABC/2 and SAS methods.

Methods: A pre-study cohort of 21 post-operative CT scans with residual ICH was analyzed. Volumes segmented via SAS, adjudicated by a neuroimaging specialist, served as the ground truth. Residual ICH volumes were also measured using an augmented ABC/2 method, in which each isolated region of residual hemorrhage was measured separately, and the cumulative volume of all regions was used for comparison. VIZ ICH volumes were obtained from the VIZ.ai mobile application.

Results: VIZ ICH volumes were more accurate than ABC/2 in 65% of cases where residual hemorrhage was detected. For small residual volumes (<5 mL), VIZ failed to detect ICH in 4 of 6 cases, reporting 0 mL. The average difference between VIZ and SAS volumes was 2.60 ± 5.61 mL, compared to 2.55 ± 7.42 mL for ABC/2. Strong correlations were observed between SAS and both VIZ (R^2 = 0.932) and ABC/2 (R^2 = 0.919), indicating high agreement with the ground truth.

Conclusion: VIZ ICH frequently provides comparable or superior accuracy to ABC/2 for residual ICH volume estimation. VIZ showed reduced sensitivity for very small residual volumes (<5 mL), potentially affecting early reaccumulation detection. This protocol will be expanded to a larger 200-patient cohort.

ABSTRACT 62

OVER TWENTY YEARS OF A SINGLE-CENTER EXPERIENCE WITH ELECTIVE TRANSCATHETER COIL EMBOLIZATION OF UNRUPTURED SPLENIC ARTERY ANEURYSMS.

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Splenic artery aneurysms (SAA) are the most common visceral artery aneurysms and carry a high risk of life-threatening rupture. While endovascular embolization has largely replaced surgery as the primary treatment, existing literature is often limited by small sample sizes and the inclusion of heterogeneous cases, such as acute ruptures and pseudoaneurysms. Consequently, there is a lack of consensus regarding the optimal long-term endovascular strategy for elective management.

Purpose: To review over twenty years of a single-center experience with elective embolization of unruptured splenic artery aneurysms (SAA).

Methods: A retrospective review of unruptured SAA treated endovascularly from October 2002 to January 2026 was performed. Primary technical success (cessation of flow into aneurysm inflow and non-opacification of the sac), secondary technical success (freedom from rupture and sac enlargement), freedom from sac opacification on follow-up, reintervention rate, adverse events, and mortality rates were recorded.

Results: A total of 156 unique aneurysms were treated in 130 patients. The mean age was 54.6 ± 14.0 years, and 86 (66.2%) patients were female. Mean aneurysm size was 2.4 ± 1.1 cm. All SAA were treated with coil embolization; fourteen (9.0%) required an adjunctive embolic. Primary technical success was achieved in all but one (0.8%) patient. Mean follow-up was 4.1 ± 5.0 years. There was 100% secondary technical success and a 95.1% rate of freedom from sac opacification on follow-up. Reintervention was required in four (3.1%) patients, all of whom remained successfully treated. Major splenic infarction occurred in 17 (13.9%) patients, including 12 out of 41 (29.3%) patients with portal hypertension versus five out of 89 (5.6%) without portal hypertension. There were seven (5.4%) mortalities, including one (0.8%) within 30 days, all unrelated to SAA embolization.

Conclusion: Elective coil embolization is a safe and effective treatment for SAA with robust rates of technical success, freedom from sac enlargement, and freedom from rupture.

ABSTRACT 63

BENEFITS AND BURDENS OF STROKE CODES FOR NEUROLOGY TRAINEES: EDUCATIONAL VALUE AND EFFECT ON WELL-BEING.

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Background/Objective: Stroke codes (SC) facilitate timely revascularization therapy, and numbers have increased. As neurologists face high burnout, the impact of SC on trainee education and well-being is not well understood. We assessed differing perceptions of SC between initiators and responders and, among responders, explored the impact of SC on neurology resident education and well-being.

Methods: We performed a real-time, cross-sectional study of providers initiating and responding to SC from 6/14/2025 – 7/18/2025. Initiators and responders answered Likert scale questions (1 = very unlikely/low, 5 = very likely/high) and free response questions about perceptions of stroke likelihood, patient benefit, educational value, and contribution to burnout. We used descriptive statistics to analyze responses by cohort, reporting mean Likert responses and comparing with unpaired Mann-Whitney U tests. We assessed correlations between perceived well-being, educational value, and busyness using Pearson's Correlation Coefficient and performed thematic analysis of free responses.

Results: Fifty-four SC were called: only 9.4% (n=5) received revascularization (60% thrombectomy, 40% thrombolysis). Thirty-two initiators (59.3%) and 54 responders (100%) participated. Of responders, 90.7% were neurology residents.

Initiators perceived significantly higher patient benefit (4.0 ± 1.1 vs. 3.3 ± 1.2; $p<0.03$) and stroke likelihood (3.1 ± 1.0 vs. 2.5 ± 1.6; $p<0.03$). Among initiators, perceived benefits included aligning resources, expediting care, and helping the patient/team. Among responders, perceived benefits included rapidly identifying/treating stroke and providing reassurance when not a stroke. Responder frustrations included limited clinical history and presentation outside the treatment window. Educational value was significantly greater for revascularization cases among responders (3.6 ± 0.9, n=5 vs. 2.5 ± 1.2, n=37; $p<0.03$). Effect on well-being was correlated with educational value ($r(52)=0.64$, $p < .01$) but not perceived busyness.

Conclusions: SC initiators perceive higher stroke likelihood and patient benefit than responders, and educational value among trainees is highest in rare cases when patients receive revascularization therapy. Discordant perceptions between initiators and responders presents an opportunity for education and improvement of SC processes. Trainee involvement in SC with high probability of revascularization treatment may maximize educational value.

ABSTRACT 64

ACCELERATING ACCESS, PRESERVING EQUITY: WAITLIST TIMES AFTER NORMOTHERMIC MACHINE PERFUSION ADOPTION IN LIVER TRANSPLANTATION.

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Liver transplantation remains constrained by organ scarcity and inequities in access. Normothermic machine perfusion (NMP) can expand utilization of donation after circulatory death (DCD) and extended-criteria livers, potentially shortening time to transplant. We evaluated whether programmatic NMP adoption reduced waitlist time and whether changes differed across socioeconomic and demographic groups.

Methods: We performed a retrospective, single-center, era comparison of liver transplantation before and after programmatic adoption of NMP, defining the pre-NMP era as January 2020–June 2022 and the NMP era as July 2022–December 2024. We excluded pediatric livers, split grafts, and combined heart-liver and lung-liver transplants. The primary outcome was time from listing to transplant (days). Unadjusted comparisons used Wilcoxon tests with Hodges–Lehmann (HL) median shifts and Cliff's delta. Adjusted effects were estimated with log-linked regression controlling for age, sex, BMI, primary diagnosis, reoperation, multiorgan transplant, and MELD. Equity analyses stratified by Social Vulnerability Index (SVI), race, ethnicity, primary language, and insurance.

Results: Among 787 adults (pre-NMP n=409; NMP era n=378, median waitlist time decreased from 61 to 38 days (p=0.070). After adjusting for clinical covariates, the NMP era was associated with a 36% shorter time to transplant (95% CI −49.2% to −19.2%; p<0.001). Donor mix shifted toward DCD (15% to 27%, p<0.001) and average MELD decreased from 31 to 27 (p<0.001). Within strata of SVI, race, ethnicity, language, and insurance, we compared waitlist time between eras. In adjusted log-linked regression models testing for an Era x SVI interaction, the era-associated decrease in median waitlist time was statistically similar across all SVI quartiles (p=0.933)

Conclusions: Programmatic NMP adoption was associated with substantially shorter waitlist time without evidence of worsening disparities across socioeconomic or demographic strata. Increased DCD utilization and lower MELD at transplant suggests that NMP expanded access to grafts and may have enabled earlier transplantation. Our next steps involve investigating graft outcomes in this cohort to verify that reduced waitlist times have not compromised patient safety.

ABSTRACT 65

DOES A PATIENT'S RELATIONSHIP TO THEIR PRIMARY CONTACT INFLUENCE OUTCOMES AFTER TRAUMATIC HIP FRACTURE SURGERY?

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Patients with a family member listed as a primary contact have demonstrated improved outcomes after elective total joint arthroplasty, yet it remains unclear whether a similar association exists in trauma care. We aimed to evaluate whether a patient's relationship to their primary contact is associated with postoperative outcomes after traumatic hip fracture surgery.

Methods: A retrospective review was conducted on traumatic hip fractures from 2010-2023 in a multihospital academic health system. Patients were stratified by procedure type into open reduction and internal fixation (ORIF) and arthroplasty (total or hemiarthroplasty) cohorts. Within each cohort, patients were categorized based on relationship to their listed primary contact: family (spouse, first- or second-degree relative) or non-family (friend, neighbor, or other). Baseline patient characteristics were compared using nonparametric and categorical tests as appropriate. Univariable analyses assessed length of stay, discharge destination, emergency department (ED) visits, readmissions, reoperations, and revisions. Multivariable regression was performed separately by cohort, adjusting for covariates that differed between groups (BMI for ORIF; ASA for arthroplasty).

Results: There were 1,091 patients included (748 ORIF, 343 arthroplasty). In the ORIF cohort, the only baseline difference between groups was BMI (p=0.002). Patients with non-family primary contacts were more likely to be discharged to a nonhome setting on univariable analysis (p=0.026), which remained significant after BMI adjustment (aOR 1.96 [1.17-3.49], p=0.016). No other outcomes differed between groups.

In the arthroplasty cohort, ASA classification was the only baseline difference between groups (p=0.043). There were no significant differences in postoperative outcomes according to primary contact relationship on univariable or multivariable analysis. Nonsignificant trends toward higher 30-day ED visits (p=0.081), 2-year reoperation (p=0.067), and 2-year revision (p=0.072) were observed for patients with non-family primary contacts.

Conclusion: Among hip fractures treated with ORIF, a non-family primary contact was independently associated with increased odds of nonhome discharge. The arthroplasty cohort recorded no significant associations, however directional trends may reflect limited power. These findings highlight the relevance of primary contact relationships and social support in nonelective surgical recovery.

ABSTRACT 66

RACIAL & ETHNIC DISPARITIES IN ANALGESIC PRESCRIBING FOR OLDER ADULTS WITH CANCER BEFORE AND AFTER THE 2016 CDC GUIDELINE.

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Opioids are essential for cancer pain management, yet systemic inequities may exacerbate undertreatment among racially and ethnically minoritized populations. In 2016, the CDC released opioid prescribing guidelines that may have reduced access to opioids for people with cancer and shifted prescribing toward less-effective gabapentinoids, but effects across diverse groups are unknown. This study aims to measure opioid and gabapentinoid prescribing among multiple racial and ethnic groups of older adults with advanced cancer and assess whether the guideline differentially affected these trends.

Methods: Using 100% Medicare claims data (2012-2021), we measured opioid (typical opioids, tramadol, buprenorphine) and gabapentinoid (gabapentin, pregabalin) prescribing among adults aged ≥65 years with advanced cancer, before and after the 2016 CDC guideline, stratified by race and ethnicity. Difference-in-differences models estimated relative changes by race and ethnicity, adjusted for Medicaid dual eligibility.

Results: Among 3,216,867 older adults with advanced cancer (mean age 75.3 years; 51.8% female), 80.3% identified as White, 9.0% Black, 5.6% Hispanic, 2.8% Asian, 0.3% (n=10,651) Native American, and 1.8% Other. Before the guideline implementation, opioid prescribing ranged from 66.3% (Native American) to 45.1% (Asian). Following the guideline, all groups showed declines in opioid prescribing (-8.6 to -10.8 percentage points [pp]). Gabapentinoid use also increased across all groups (+2.5 to +6.0 pp; highest in Black [+6.0 pp] and Native American [+4.4 pp] participants). In adjusted analyses, Black vs. White participants had slightly higher odds of receiving an opioid post-guideline (OR 1.02; 95%CI 1.01-1.04); other groups showed no differential changes. For gabapentinoids, Black, Hispanic, and Asian participants had marginally greater increases than White participants (all ORs 1.1; $p<0.01$).

Conclusion: In this first national study to assess opioid and gabapentinoid prescribing across diverse racial and ethnic groups of older adults with advanced cancer, we found that opioid use declined while gabapentinoid use increased after the CDC guideline. Although prescribing patterns differed modestly across groups, the magnitude of these changes is unlikely to be clinically meaningful. Further research is needed to identify the underlying drivers of persistent inequities in cancer pain treatment and to ensure that evolving prescribing policies help to address them.

ABSTRACT 67

HIGH SATISFACTION, DIFFERENT PRIORITIES: PATIENT VALUATION OF LABOR EPIDURAL ANALGESIA OUTCOMES.

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Maternal satisfaction with labor epidural analgesia (LEA) is multifactorial; prior studies have studied satisfaction on homogeneous, higher-income populations, leaving gaps in understanding how maternal satisfaction and priorities related to LEA may differ across a diverse population.

Objectives: The primary and secondary objective was to evaluate differences in patient satisfaction with LEA and patient preferences related to LEA, respectively, across socioeconomic and demographic groups. We hypothesized that overall satisfaction and anesthesia-related preferences would be similar across demographic and socioeconomic groups.

Methods: This is a cross-sectional, single-site survey study among postpartum patients who underwent vaginal delivery. Participants rated their satisfaction with LEA on a 0–100 scale. and allocated a hypothetical $100 across 10 anesthesia-related outcomes, with higher $ amounts reflecting greater relative importance. Socioeconomic data were also collected.

Variables of interest were dichotomized, including race/ethnicity (White non-Hispanic vs. non-White/Hispanic), annual income (> vs. ≤ $52k), education (less than a baccalaureate vs. baccalaureate or greater), insurance status (Medicaid vs. commercial), marital status, and nationality (U.S. vs. foreign-born).

Statistical analyses included descriptive statistics and independent Welch's *t*-tests to compare satisfaction scores and preference valuations, with statistical significance set at $p < 0.05$.

Results: Of 397 patients approached, 101 met inclusion criteria. The cohort was socioeconomically diverse: 54.5% non-White and/or Hispanic, 35.6% with income ≤$52,000, 29.7% unmarried, 32.7% Medicaid-insured, 43.6% with less than a bachelor's degree, and 26.7% foreign-born.

Overall satisfaction with LEA was high (92.8 ± 12.94) and did not significantly differ by race/ethnicity ($p = 0.923$), income ($p = 0.395$), education ($p = 0.707$), insurance ($p = 0.803$), marital status ($p = 0.402$), or nationality ($p = 0.051$). Avoidance of labor pain was the highest valued outcome (mean value $39.80 ± 25.9). Notably, valuation of labor pain avoidance differed significantly by race/ethnicity ($p = 0.004$).

Conclusion: Satisfaction with LEA was high and did not differ significantly across study groups. However, preferences regarding anesthesia-related outcomes varied, with White, non-Hispanic patients assigning significantly greater value to labor pain control compared with non-White and/or Hispanic patients.

ABSTRACT 68

RADIATION THERAPY AND DURVALUMAB IN CHOLANGIOCARCINOMA: SURVIVAL OUTCOMES.

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Objective: For patients with unresectable intrahepatic cholangiocarcinoma (IHC), ablative radiation (RT) may provide meaningful long-term survival for non-progressors after systemic therapy. The benefit of this approach, particularly in the era of durvalumab, is unclear. This study explores long-term outcomes of patients treated with ablative RT for IHC.

Methods: This single-institution retrospective study included patients with IHC treated with ablative RT (2015-2025). OS and progression-free survival (PFS) were estimated using Kaplan-Meier methods from RT initiation and diagnosis. PFS was defined as time from RT initiation to first intra- or extra-hepatic progression or death. Subgroups were compared using log-rank testing by RT technique, chemotherapy exposure, durvalumab use, metastatic status at RT initiation, and time from diagnosis to RT.

Results: A total of 38 patients met inclusion criteria with median follow-up of 35 months (range, 2-113 months). Median age was 66 years; 55% were female. At RT initiation, 61% had non-metastatic disease and 87% received chemotherapy before RT (median 6.5 cycles). SBRT was delivered in 21% and fractionated RT in 79%. Median radiation dose was 60 Gy (range, 10-75 Gy). Median tumor size at RT was 5.9 cm (range, 1.8-16.6 cm).

Median OS and PFS were 23.0 and 8.0 months from RT initiation, and 32.0 and 16.0 months from diagnosis, respectively. Durvalumab (29%) was not associated with improved OS (NR vs 23.0 months; p=0.234) or PFS (8.0 vs 8.0 months; p=0.802).

SBRT was associated with improved OS from diagnosis compared with fractionated RT (NR vs 27.0 months; p=0.025), though not from RT initiation (NR vs 23.0 months; p=0.067). Median time from diagnosis to RT was 6.5 months. RT more than 6.5 months after diagnosis was associated with improved OS from diagnosis (50.0 vs 19.0 months; p=0.009), but not from RT initiation (p=0.053). Chemotherapy exposure and metastatic status at RT initiation were not significantly associated with OS or PFS.

Conclusion: In this cohort, median OS approached two years from RT initiation. Durvalumab was not significantly associated with improved OS. SBRT and longer time from diagnosis to RT were associated with improved survival from diagnosis, likely reflecting treatment selection and differences in baseline disease severity. Further prospective evaluation of RT technique and integration with immunotherapy in the management of cholangiocarcinoma is warranted.

ABSTRACT 69

TRENDS IN END-OF-LIFE IMMUNOTHERAPY USE IN METASTATIC HEAD AND NECK SQUAMOUS CELL CARCINOMA: A NATIONAL CANCER DATABASE ANALYSIS.

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Aggressive systemic cancer treatment near the end of life (EOL) is a marker of low-quality care. While EOL chemotherapy use has declined, EOL immunotherapy administration has escalated in the era of immune checkpoint inhibitors (ICIs). Given recent ICI approvals for metastatic head and neck squamous cell carcinoma (mHNSCC)- an indication with unique prognostic heterogeneity- we conducted a retrospective cohort study examining temporal trends and factors associated with EOL immunotherapy initiation in mHNSCC.

Methods: The National Cancer Database was used to identify patients diagnosed with mHNSCC between 2016-2022 who received first-course immunotherapy. EOL-initiated immunotherapy was defined as initiation within 1 month of death, with sensitivity analyses at 2- and 3-month thresholds. Temporal trends were evaluated using χ^2 testing. Multivariable logistic regression was used to identify factors associated with EOL immunotherapy initiation, with *a priori* covariates including diagnosis year, age, sex, race, setting, insurance type, median income, facility type, anatomic site, metastasis burden, Charlson-Deyo comorbidity index (CCI), and surgery, radiotherapy, and chemotherapy status.

Results: Among 8806 patients, 29.3% received immunotherapy, rising from 17.7% in 2016 to 40.9% in 2022 following first-line ICI approvals. In 2021, EOL-initiated immunotherapy occurred among 6.7%, 13.0%, and 16.4% of treated patients at 1-, 2-, and 3-month EOL thresholds, with upward trends after 2019. Predictors of one-month EOL initiation included female sex (OR 2.09, 95% CI 1.33–3.27), disadvantaged insurance status (Medicaid/other governmental OR 2.27, 95% CI 1.18–4.35; uninsured/unknown OR 5.09, 95% CI 2.33–11.12), high metastatic burden (≥3 sites OR 8.77, 95% CI 2.94–26.12), and surgical treatment (OR 2.12, 95% CI 1.19–3.79). Protective factors included academic setting (OR 0.60, 95% CI 0.40–0.90), oropharyngeal primary site (OR 0.54, 95% CI 0.32–0.92), and concurrent radiotherapy (OR 0.53, 95% CI 0.35–0.79) or chemotherapy (OR 0.48, 95% CI 0.31–0.73). Sensitivity analyses highlighted comorbidity impact (2-month EOL, CCI≥3 OR 1.83, 95% CI 1.05–3.19).

Conclusions: EOL-initiated immunotherapy occurs in a small but notable proportion of mHNSCC patients and is associated with clinical and demographic vulnerability. As ICI use expands, optimizing patient selection, EOL guidelines, and system-level practices will be crucial for judicious immunotherapy use in terminal settings.

ABSTRACT 70

EVALUATING EMBRYO EUPLOIDY AMONG PATIENTS DIAGNOSED WITH INFLAMMATORY BOWEL DISEASE UNDERGOING IN VITRO FERTILIZATION.

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Objective: Inflammatory bowel disease (IBD), including Crohn's disease and ulcerative colitis, commonly manifests in patients during their reproductive years. Treating IBD through surgical intervention can negatively influence fertility and assisted reproductive technology (ART) outcomes. Complications from IBD could impede implantation, though little is known about the influence of IBD on ploidy.

Methods: This retrospective cohort study assessed euploidy rates in cycles of in vitro fertilization (IVF) patients with a history of IBD undergoing controlled ovarian hyperstimulation (COH) who completed preimplantation genetic testing for aneuploidy (PGT-A) at a single academic fertility center between 2011-2022. Patients were excluded if they had a history of endometriosis, severe male factor infertility, chemotherapy or radiation, or balanced translocations. Patients with IBD undergoing PGT-A were compared with patients without IBD undergoing PGT-A. Cohorts were matched by age, body mass index (BMI), and anti-Müllerian hormone (AMH) levels. The primary outcome was euploidy. Secondary outcomes evaluated the number of oocytes retrieved, fertilization rate, blastulation rate, and aneuploidy. Comparative statistics were performed using chi-square and Kruskal-Wallis. A multivariate logistic regression analysis adjusting for age, BMI, AMH, antral follicle count, days of stimulation, and sperm source evaluated the association between IBD and previously mentioned rates. All p-values were two-sided and <0.05 was significant.

Results: The study evaluated 43 IBD patient cycles and 129 control cycles. IBD patients had significantly more oocytes retrieved ($p=0.03$), mature oocytes ($p=0.02$), fertilized oocytes ($p=0.01$), and blastocysts ($p=0.02$) when compared to controls. The number of euploid and aneuploid blastocysts were comparable. Maturation, fertilization, blastulation, euploidy, and aneuploidy rates were also comparable. In a multivariate analysis, IBD patients did not have lower odds of euploidy nor did they have increased odds of aneuploidy. IBD was not associated with lower odds of oocyte maturation, fertilization, or blastulation.

Conclusion: Compared with patients without IBD, patients with IBD undergoing COH with PGT-A had equal odds of euploidy. Patients with IBD had significantly more oocytes retrieved, mature oocytes, fertilized oocytes, and blastocysts compared to controls. Thus, patients with IBD do not have worse COH outcomes than patients without IBD.

ABSTRACT 71

SEX-BASED DIFFERENCES IN LUNG CANCER SURVIVAL: A COMPETING RISKS MODEL USING THE PROSTATE, LUNG, COLORECTAL, AND OVARIAN CANCER SCREENING (PLCO) TRIAL.

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Although females with NSCLC consistently show better survival than males, prior analyses relied on Cox models, which overestimate cause-specific mortality when competing risks are substantial, and incompletely adjusted for smoking, histology, stage, comorbidities, and treatment.

Objective: Assess whether sex-based differences in lung cancer-specific mortality (LCSM) in NSCLC persist after adjusting for key confounders, using a rigorous competing risk regression accounting for substantial competing causes of death (non-cancer mortality), commonly seen in elderly.

Methods: Using Prostate, Lung, Colorectal, and Ovarian (PLCO) Cancer Screening Trial (multi-center, prospective US cohort, n=~155,000, aged 55-74; 1993–2001), patients with histologically confirmed primary NSCLC as their first malignancy were included. Fine and Gray competing risk regression evaluated LCSM, adjusting for age, race/ethnicity, marital status, smoking, comorbidities, tumor characteristics, and treatment. Sex interactions with smoking, histology, and stage were tested. Missing data were handled by multiple imputation (SAS 9.4).

Results/Discussion: Among 2,793 patients (59% male, 41% female), 2,006 (72%) died of lung cancer and 531 (19%) from other causes. Women were more likely to be never-smokers (14% vs. 5%), have adenocarcinoma (55% vs. 42%), and have lower cardiovascular disease (heart failure: 7% vs 18%, $p<0.0001$). Unadjusted analysis showed lower LCSM in females (HR: 0.81, 95% CI: 0.74-0.88), and after comprehensive adjustments of key confounders and competing causes of death, female sex remained independently associated with reduced LCSM (HR: 0.85, 95% CI: 0.74-0.98), yielding more precise estimates than prior Cox-based analyses. Sex-by-stage IV interaction approached significance ($p=0.06$), and was hypothesis-generating, so should not be interpreted as absence of a sex effect in advanced disease. Attenuation from unadjusted HR shows survival advantage is only partially explained by known confounders with residual differences potentially reflecting biological or treatment-response factors like hormonal signaling, higher EGFR mutations, or differential tobacco susceptibility. Hence, sex should be considered as a prognostic factor in NSCLC risk stratification and clinical trial designs. Although PLCO trial pre-dates targeted therapies, its findings remain relevant as EGFR-targeted and other immunotherapies disproportionately benefit females.

ABSTRACT 72

ASSESSING BARRIERS AND FACILITATORS TO ADDICTION AND HARM REDUCTION SERVICES: A SINGLE SITE QUALITATIVE STUDY.

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International models of inpatient harm reduction care exist on a wide spectrum, ranging from utilizing harm reduction philosophy to inpatient overdose prevention centers. Mount Sinai currently lacks a standardized inpatient harm reduction model, with resources concentrated on the outpatient setting.

Objective: The goal of this study is to investigate the harm reduction practices utilized by Mount Sinai inpatient physicians, nurses, and social workers. This study will then analyze the barriers and facilitators to integrate inpatient harm reduction techniques for people who used drugs (PWUDs).

Methods: This qualitative study used focus groups of three types of healthcare providers to assess the barriers and facilitators to using harm reduction care for PWUDs admitted to the hospital. We developed a semi-structured interview guide incorporating questions specific to each profession and examples of harm reduction services provided elsewhere. We held three focus groups (social workers, nurses, and physicians) using a convenience sample to recruit providers via email. Focus groups were held on Zoom, audio recorded and transcribed using Zoom software. Transcripts from each focus group were coded manually by one person using Atlas.ti Code Manager and then grouped into themes with representative quotes highlighted.

Results/Discussion: Focus groups included two social workers, four nurses, and two resident physicians. Universal barriers to harm reduction integration discussed in each group were lack of training and education on harm reduction, lack of standardized care, health system challenges, stigma, and lack of resources. Uniquely, social workers were more affected by lack of continuity of care, while nurses and physicians were concerned by the lack of harm reduction policies and inpatient resources. Facilitators that were consistent among all groups include provider-patient relationship building, access to medications for opioid used disorder, interdisciplinary teamwork, and outpatient resources. Though nurses reported current punitive security measures as a facilitator, physicians and social workers noted that these policies place stigma on PWUDs and damage therapeutic relationships. From these results, it can be concluded that the identified six key barriers and four key facilitators serve as potential areas of improvement to assist in lowering the threshold towards implementing inpatient harm reduction care.

ABSTRACT 73

A DESCRIPTIVE ANALYSIS OF INDIVIDUALS WITH HEPATOBILIARY CANCER REFERRED FOR PALLIATIVE CARE.

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Liver cancer is a leading cause of cancer mortality, with rising U.S. incidence driven by metabolic dysfunction-associated steatohepatitis (MASH). Although prognosis remains poor, improved treatments have extended survival, increasing the need to optimize patient and caregiver quality of life. Patients face high symptom burden, uncertainty, and unmet informational needs, often worsened by comorbid liver disease such as ascites. While outpatient palliative care may provide support, data on its use in hepatobiliary cancers are limited. This study characterized patients referred to outpatient palliative care across Mount Sinai Health System (MSHS) to guide more targeted care.

Methods: This retrospective cohort study included patients with hepatobiliary cancers (ICD-10: C22.0, C22.1, C22.8) referred to outpatient palliative care from January 1, 2022, to May 31, 2025. Data from initial consultations were obtained from the MSHS Palliative Care Registry, including demographics, pain scores (0–10), Edmonton Symptom Assessment System (ESAS) scores, comorbidities, and liver disease etiologies. Manual chart review validated data. Descriptive analyses were performed in R (4.5.1). Age-based comparisons used Wilcoxon rank-sum and chi-squared tests ($p<0.05$).

Results: Among 153 patients (median age 67), common symptoms included inactivity (88%), anorexia (69%), abdominal pain (66%), and constipation (63%). The median pain score was five and the median number of symptoms rated as moderate-to-severe was three. Cirrhosis was present in 50%, ascites in 46%, varices in 24%, and hepatic encephalopathy in 7%. Hepatitis C was more common in older patients and hepatitis B in younger patients ($p=0.003$; $p=0.0004$). Symptom burden, pain severity, and hepatic comorbidities did not differ by age.

Conclusion: Our findings demonstrate that patients with liver cancer referred to outpatient palliative care were highly symptomatic at the time of referral. Ascites, which is known to worsen patient and family caregiver quality of life, was also highly prevalent. Therefore, development of ascites may represent an important clinical marker for palliative care referral. Future studies will need to evaluate (1) targeted palliative needs assessments to interventional radiology or paracentesis clinics which see a high concentration of people with ascites and (2) screening for both patient and caregiver needs at this point in the disease trajectory.

ABSTRACT 74

MUSCULOSKELETAL INJURIES IN BHANGRA DANCERS: RISK FACTORS AND DANCE PRACTICES.

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Bhangra, a traditional Punjabi folk dance, has evolved into a competitive sport in North America, the UK, and India. Characterized by repetitive jumping, twisting, and weight-bearing movements, Bhangra may predispose dancers to musculoskeletal (MSK) injuries. This study aimed to quantify the prevalence and types of Bhangra-related musculoskeletal (MSK) injuries.

Methods: A cross-sectional survey was distributed to Bhangra dancers across the US and Canada using social media, collegiate Bhangra networks, and Punjabi cultural organizations. Respondents were classified as competitive dancers if they participated in the national Bhangra competition circuit and recreational dancers if they danced socially. Comparison was made between internal subgroups (competitive vs recreational). Chi-squared testing was used because the dataset consisted primarily of categorical frequency data rather than continuous measures.

Results: A total of 395 participants completed the survey. Most respondents were 18–24 years old (78.2%), followed by 25–34 (19.2%). The sample included 231 female dancers (58.5%) and 162 male dancers (41.0%). Competitive dancers were significantly more likely to sustain injuries ($\chi2=16.6$, $p<0.001$) and report Bhangra-related joint pain ($\chi2=47.8$, $p<0.001$). Higher intensity ($\chi2=15.4$, $p<0.001$) and greater frequency of practice ($\chi2=9.8$, $p=0.002$) were also associated with increased injury risk. Dancers reporting longer practice hours experienced pain in ankles ($\chi2=19.9$, $p<0.001$), lower back ($\chi2=22.6$, $p<0.001$), and shoulders ($\chi2=20.6$, $p<0.001$).

Conclusion: Bhangra dancers face a significant risk of musculoskeletal injury, particularly with higher-intensity and competitive participation, with the ankle, lower back, and shoulder joints most commonly affected. Beyond injury counts, this study provides the first evidence to guide clinicians in recognizing characteristic injury patterns in Bhangra participants. They also underscore factors that may influence culturally-tailored preventative care: training volume, intensity, footwear, and warm-up practices. Given the growing popularity of Bhangra in North America and worldwide, addressing these risks is critical not only for improving dancer health and performance, but also for supporting safety of a cultural tradition that serves as a vital source of community and physical activity. Further research would consist of biomechanical studies of the impact of twisting and jumping movements on musculoskeletal health.

ABSTRACT 75

PREDICTORS OF LENGTH OF STAY AND TOTAL ADMISSION COSTS FOR OPERATIVE REDUCTION OF DEVELOPMENTAL DYSPLASIA OF THE HIP: A NATIONWIDE ANALYSIS FROM 2016-2022.

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While developmental dysplasia of the hip (DDH) is increasingly managed nonoperatively, operative reduction remains necessary for severe or later presentations. Nationwide predictors of inpatient postoperative outcomes using socioeconomic and hospital characteristcs are currently undefined.

Objective: To identify associated variables with longer length of stay (LOS) or increased total admission costs after operative reduction for DDH.

Methods: The Healthcare Cost and Utilization Project (HCUP) Kids' Inpatient Database (KID) was assessed for patients with DDH that underwent operative hip reduction, excluding neuromuscular cases. Simultaneous-entry multivariable logistic regression was performed with patient and hospital characteristics to determine predictors of longer LOS and increased total admission costs, defined as the top quartile. It was hypothesized that age, region, insurance type, hospital type, and hospital size would be associated with variation in resource utilization following operative reduction for DDH.

Results/Discussion: From 2016-2022, 80.0% (1,434) of patients were female (age 4.5 ± 5.2 years) with cost of admission $66,739.22 ± $60,508.62 and length of stay 2.6 ± 5.9 days. Longer LOS was associated with age in years (OR = 1.19, 95% CI = 1.16-1.22, $p < 0.01$), Medicaid as primary payer (OR = 1.55, 95% CI = 1.10-2.18, $p = 0.01$), Midwest hospitals (OR = 0.38, 95% CI = 0.19-0.73, $p < 0.01$), urban non-teaching/rural hospitals (OR = 3.17, 95% CI = 1.32-7.63, $p = 0.01$), children's hospitals (OR = 0.06, 95% CI = 0.01-0.66, $p = 0.02$), and number of beds (OR = 1.57, 95% CI = 1.08-2.27, $p = 0.02$). Increased admission costs were associated with admission year (OR = 1.15, 95% CI = 1.09-1.21, $p < 0.01$), age in years (OR = 1.14, 95% CI = 1.11-1.16, $p < 0.01$), Midwest hospitals (OR = 0.40, 95% CI = 0.22-0.75, $p < 0.01$), South hospitals (OR = 1.86, 95% CI = 1.12-3.09, $p = 0.02$), and West hospitals (OR = 2.17, 95% CI = 1.26-3.76, $p < 0.01$). Age and hospital characteristics were associated with inpatient resource utilization following operative reduction for DDH. Regional variation exists, with Midwest hospitals demonstrating improved outcomes and non-teaching hospitals associated with longer LOS. These findings emphasize disparities and regional variations in system-level outcomes that may inform future management of patients with DDH after operative reduction.

ABSTRACT 76

BONE HEALTH DRIVES POSTOPERATIVE MORBIDITY IN THE ERA OF AN AGING CRANIOFACIAL POPULATION.

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As the craniofacial trauma population ages, chronological age is increasingly used as a proxy for surgical risk. However, whether age independently predicts postoperative morbidity after craniofacial fracture repair, or instead reflects underlying biologic vulnerability, remains unclear. We evaluated whether geriatric status independently predicts postoperative complications after operative craniofacial fracture repair and, within a geriatric subcohort, whether bone health factors drive morbidity.

Methods: A retrospective cohort study was performed across four urban trauma centers from 2019-2025. Adults undergoing operative craniofacial fracture repair were included; nonoperative injuries and closed reductions were excluded. Patients were stratified as geriatric (≥60 years) or non-geriatric (<60 years). The primary outcome was any postoperative complication, including infection, wound complication, visual deficit, nonunion, reoperation, or readmission. Propensity score matching was performed using fracture location, coronary artery disease, diabetes, and smoking history. Within the geriatric cohort, Firth penalized multivariable logistic regression evaluated predictors of postoperative complications.

Results: A total of 526 patients were included, including 70 geriatric patients. On unadjusted analysis, geriatric patients had higher rates of coronary artery disease (19.7% vs 1.5%; p<0.001) and diabetes (15.5% vs 4.6%; p=0.002), but similar complication rates (15.5% vs 10.2%; p=0.26). Propensity matching yielded 56 geriatric and 56 non-geriatric patients with excellent covariate balance. In the matched cohort, complication rates remained similar (13.0% vs 14.5%; p=0.83), and geriatric status was not independently associated with complications (OR 0.88, 95% CI 0.27-2.75; p=0.83). Among geriatric patients, vitamin D deficiency independently predicted postoperative complications (OR 5.62, 95% CI 1.09-32.27; p=0.040), while low bone mass showed a nonsignificant trend (OR 3.38, 95% CI 0.84-13.67; p=0.084).

Conclusion: Age alone did not independently predict postoperative morbidity after operative craniofacial fracture repair. In contrast, vitamin D deficiency emerged as an independent predictor of complications among older adults, supporting a shift from age-based assumptions toward biologically informed risk stratification. Bone health may represent a clinically actionable target for perioperative optimization in this growing trauma population.

ABSTRACT 77

SATISFACTION AND ANESTHESTIC CARE IN CESAREAN DELIVERIES: A CROSS-SECTIONAL SINGLE SITE SURVEY.

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Objective: To contextualize the factors associated with patient satisfaction with anesthetic care during cesarean delivery (CD).

Methods: This study was a cross-sectional single site survey. We surveyed 100 patients who underwent a CD who were proficient in either English or Spanish, on postpartum day 1 to capture their immediate experiences with their care. In the survey the following outcomes were assessed: pain during labor, itching, leg weakness, pain after delivery, shivering, anxiety, sleepiness, nausea, vomiting, and excess pain medication). Each factor was ranked on a scale from 1(least important) -10 (most important) and allotted a weighted monetary value (totaling $100). To contextualize these findings, self-reported demographic data and clinical data were also collected.

Results: 100 patients who underwent a CD at MSH (53 planned and 47 unplanned) participated in this study. The average age and parity of our patients was 34 years old (range 22-47) and 1.63 (range 1-4), respectively. Overall satisfaction was 89.9% (38%-100%). Patients who had an unplanned CD were less satisfied than those that had a planned CD (85.94% and 93.38%; $p<0.016$). Among the 10 outcomes surveyed, pain during surgery was ranked as most important and patients used most of their budget on this outcome (average score=2.19/10, average dollar amount=$31.31/$100). Sleepiness during surgery was the lowest priority (average score=7.71/10, average dollar amount $4.76/$100).

Conclusion: Patients were more likely to report being dissatisfied with their care in the setting of an unplanned CD; avoidance of pain was consistently ranked as a top priority for patients.

ABSTRACT 78

IMPLEMENTATION OF MEDICINE PROTOCOL FOR INPATIENT MRI WITH MINIMAL SEDATION.

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Minimal sedation with benzodiazepines (BZD) is often used to obtain MRIs for hospitalized patients when they are unable to tolerate the examination due to clinical factors, such as claustrophobia and anxiety. Lack of clear protocols may contribute to suboptimal dosing. This QI project was implemented in response to a safety event in which a patient undergoing MRI was over-sedated from multiple BZD doses. We aimed to examine the safety outcomes associated with the implementation of an electronic medical record (EMR)-based protocol for MRI scans requiring minimal sedation.

What were the safety and completion outcomes following implementation of an EMR-based minimal sedation protocol?

Methods: An interdisciplinary workgroup of clinical experts created a clinical pathway to guide BZD-based minimal sedation for inpatients at Mount Sinai Hospital. Safety measures included guidance on BZD dosing based on age, limiting BZD administration to a maximum of two consecutive doses, requiring a clinical assessment and vital sign check following BZD administration, and providing indications when to consult an anesthesiologist. Retrospective chart abstraction was performed on cases with orderset activation. Outcome measures included MRI completion and balance measures included safety events (oversedation, hemodynamic instability, ICU transfer, rapid response team calls, and death). This protocol was reviewed and approved by MSHS Medication Safety Committee.

Results: The orderset was activated 45 times for 43 patients between Mar to Oct 2025. 15 cases were excluded due to usage for non-MRI indications, patient refusal, or MRI no longer needed or aborted due to clinical instability. The MRI was completed in 27 (90%) of the 30 cases in which BZDs were administered and MRI attempted. In most cases (80%), 1 dose was sufficient to achieve adequate sedation. Usage occurred in scans with an average of 68 minutes and maximum of 216 minutes, and average patient age was 60 years (range 21-92). There were zero instances of safety events.

Conclusions: Protocol implementation was associated with safe outcomes in the patient cohort, and MRI completion was achievable under the protocol. Usage for a wide range of ages, scan durations, and non-MRI indications likely indicates its adaptability to clinical contexts. In terms of limitations, comparative data is necessary to determine overall effectiveness, and limited sample size was a constraint in detecting rare adverse outcomes.

ABSTRACT 79

SKIN CANCER AMONG US VETERANS: PREVALENCE, RISK FACTORS, AND PROTECTIVE BEHAVIORS, 2000-2018.

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Veterans experience higher rates of skin cancer than non-veterans, yet the reasons remain unclear. We compared skin cancer history, protective practices, and risk behaviors between U.S. veterans and non-veterans using 2000-2018 National Health Interview Survey data (response rates 53.0-74.3%). Analyses incorporated survey weights to generate nationally representative estimates. Group differences were tested with Rao-Scott Chi-Square tests, and multivariable logistic regression adjusted for demographics, health behaviors, and phototype. All reported data was significant (P<.001).

Among 58,257 veterans and 513,350 non-veterans, veterans reported higher prevalence of any skin cancer (weighted prevalence: 7.2% vs. 2.4%), melanoma (1.5% vs. 0.5%), non-melanoma skin cancer (4.1% vs. 1.4%), and unspecified skin cancer (1.9% vs. 0.6%). For all skin cancers, the gap in prevalence between veterans and non-veterans widened over time. Adjusted odds ratios confirmed significantly increased risk across all cancer types.

In sun-exposed settings, veterans were more likely to frequently practice at least one sun-protective behavior (OR;95%CI: 1.69;1.57-1.81), including wearing long-sleeved shirts (1.46;1.38-1.54), ankle-length clothing (1.92;1.81-2.03), hats (1.85;1.77-1.93), or caps (2.62;2.48-2.76). Additionally, they were more likely to have completed a total-body skin exam (TBSE) in the past year (1.83;1.74-1.93). Conversely, veterans used sunscreen less (0.65;0.62-0.68) and were less likely to apply SPF ≥15 (0.69;0.66-0.72). Veterans also reported lower rates of indoor tanning (0.40;0.31-0.50) and sunburns (0.71;0.68-0.75). Adjusted models showed similar patterns: ≥1 sun-protective behavior (aOR;95%CI: 1.37;1.27-1.49), ankle-length clothing (1.21;1.13-1.30), hats (1.12;1.06-1.19), caps (1.24;1.16-1.32), and recent TBSEs (1.26;1.17-1.35).

These findings suggest that while veterans adopt clothing-based photoprotection and medical screening practices, limited sunscreen use remains a gap. Targeted prevention strategies are needed to reduce skin cancer burden in this population.

ABSTRACT 80

COMPLICATIONS OF LUMBAR SPINE EPIDURAL STEROID INJECTIONS: INCIDENCE AND RISK FACTORS.

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Objectives: Lumbar epidural steroid injections (LESIs) are frequently used to manage symptoms and pain stemming from degenerative conditions of the lumbar spine. This study aimed to determine the incidence and risk factors of complications after LESI.

Methods: The Merative MarketScan Commercial and Medical Supplemental databases were queried for LESIs in 18+ patients. LESIs were distinguished based on the approach: interlaminar or transforaminal. Complications were categorized into overall, procedural, and medical. Generalized estimating equations logistic regression with repeated measures, clustered by patient identifier, were used to identify factors associated with complications at 7, 30, and 90 days after the LESI.

Results: The study cohort consisted of 362,976 patients who underwent a total of 722,366 LESIs from 2014 to 2021. Complication rates after LESIs were 2.5% within 7 days, 8.8% within 30 days, and 18.4% within 90 days. 45.0% of LESIs utilized the interlaminar approach, while the transforaminal approach was used in 54.0% of LESIs. The patient factors independently associated with the greatest odds of complications included older age [85+ versus 18-34, 7 day OR: 1.32 (1.20, 1.45); $p<0.001$], heart failure [7 day OR: 1.95 (1.84, 2.06); $p<0.001$], renal dysfunction [7 day OR: 1.51 (1.41, 1.63); $p<0.001$], neurological deficits [7 day OR: 1.37 (1.31, 1.44); $p<0.001$], and anticoagulant prescriptions [7 day OR: 3.28 (3.10, 3.48); $p<0.001$].

Conclusions: LESIs were associated with a rare but non-negligible risk of complications, which continued to occur after a 30-day period. Several patient factors were associated with the risk of post-procedure complications.

ABSTRACT 81

THE ROLE OF MAGNETIC RESONANCE IMAGING IN THE EVALUATION OF DISEASE PROGRESSION IN EOSINOPHILIC FASCIITIS: A RETROSPECTIVE COHORT STUDY.

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Eosinophilic fasciitis (EF) is a rare sclerosing disorder clinically characterized by painful skin induration, limb swelling, and peripheral eosinophilia and classically involving underlying fascia. The gold standard for the diagnosis of EF is a full-thickness wedge biopsy; however, more recent studies have shown the non-inferiority of magnetic resonance imaging (MRI) in EF detection. Standard EF treatment includes high-dose steroids, which are used as first-line therapy for managing acute flares and relapses. Despite their effectiveness, prolonged steroid use results in adverse systemic effects. Therefore, an objective measure of disease progress in EF is essential to avoid unnecessary steroid exposure. No study to date has evaluated the utility of MRI in evaluating EF disease progression. We performed a retrospective review of all patients with EF who presented to our institutions between 1/1/2000 and 7/1/2025. Out of 127 patients who were identified as having EF, 52 patients underwent a diagnostic MRI which established a baseline; eighteen of these patients had additional MRI imaging to evaluate progress and were identified as subjects for our study. The most common reasons for undergoing MRI imaging were symptom flares (12/18, 66.7%), routine maintenance (4/18, 22.2%), and re-evaluation of refractory EF (2/18, 11.1%)—with steroid dose hinging on MRI results. Median time for a follow-up MRI was 27.5 months, with a range of 101.9 months. Six of 18 patients were male. The median age was 59.7 years. We found that steroid dose escalation was curbed in 15 patients (83%) since MRI revealed either no active fasciitis or diminished fascial inflammation and therefore, physicians more confidently and safely could continue tapering steroids and/or maintain stable regimens. Our study indicates early evidence that the routine use of MRI throughout EF treatment can help guide treatment management, preventing prolonged steroid exposure.

ABSTRACT 82

ETHNOGRAPHIC INSIGHTS ON GI ILLNESSES FROM TRADITIONAL HEALERS IN MORELOS, MEXICO.

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Gastrointestinal (GI) disorders in Latine communities often go underdiagnosed due to systemic disparities and culturally discordant care. Many continue seeking traditional healers. This study examines how traditional healers in Morelos conceptualize and treat GI illness to inform more culturally responsive and integrative approaches within allopathic medicine.

Methods: An ethnographic study was conducted in Morelos, Mexico, with ten traditional healers (4 curanderas, 4 terapeutas, 2 integrative practitioners) recruited through community networks. Semi-structured Spanish-language interviews were documented through field notes and analytic memos, then inductively coded and thematically analyzed through constant comparison.

Results: Across interviews, healers described GI illnesses as manifestations of a single underlying imbalance within both the digestive and emotional systems rather than distinct physiological diseases. Treatment was “rebalancing” both systems through four interconnected modalities. (1) Herbal medicine—teas and tinctures of estafiate (Artemisia mexicana), pasiflora (Passiflora caerulea), caña fístula (Cassia fistula), hoja de guayaba (Psidium guajava), and epazote (Dysphania ambrosioides) (2) Manual therapies—abdominal massage and ventosas (cupping); (3) Energetic and spiritual interventions—limpias (spiritual cleanses), prayer, and biomagnetism; and (4) Lifestyle and dietary counseling. Across all interviews, healers stressed honesty, compassion, and referral to biomedical care when appropriate.

Conclusion: Traditional healers in Morelos conceptualize gastrointestinal illness as the embodied convergence of physical, emotional, and spiritual imbalance, with complementarity to biomedicine. Their attention to relationships, emotional wellbeing, and shared meaning challenges the tendency in Western medicine to separate the body from the mind and spirit and to overlook other healing systems that remain deeply valued and widely practiced today. These findings encourage allopathic clinicians to explore the emotional and cultural dimensions of digestive illnesses, ask patients about traditional remedies, and understand healing as both relational and contextual. Doing so will give a better understanding of patient experiences, foster culturally responsive dialogue, and provide care that is more comprehensive, compassionate, and effective.

ABSTRACT 83

ASSESSING THE NEED FOR AND IMPACT OF IMPLEMENTING UROLOGY EDUCATION INTO PEDIATRIC RESIDENCY TRAINING.

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Urological disorders are common in children. Additionally, many require swift treatment in order to severe complications. However, studies have demonstrated that pediatric residents receive limited urology education. Therefore, increasing the amount of urology education that pediatric trainees receive may lead to better outcomes for patients. The major goal for this project is to initiate urology education sessions for pediatric residents and assess the quality/usefulness of the given education.

Research Question: Increasing exposure to urology through educational sessions would likely improve the quality and robustness of pediatric residency training. This project will assess the questions: What is the utility of teaching urology topics to pediatric residents? Should this type of education be implemented into residency programs?

Methods: The study was conducted by delivering didactic educational sessions during academic half days for pediatric residents, with administration pre- and post-session survey. This survey included assessment of prior knowledge level as well as assessment of the quality of the education sessions (questions graded with a Likert scale). Each question was scored from 1 to 5, with 1 being poor knowledge/not comfortable and 5 being excellent knowledge/extremely comfortable. These surveys were administered to the pediatric residents that attended the presentations. A paired t-test was used to compare pre- and post-test scores.

Results/Discussion: 2 educational sessions have been delivered as part of this project. In June 2024, 10 pediatric residents received a session on kidney stones and acute testicular pathologies. There was an average increase of 1.2 points for each question following the presentation. All respondents agreed that the topics presented were relevant to their training. Another session on the pediatric genital exam was held in June 2025. 11 pediatric/FM residents and 4 medical students were in attendance. Data showed an average increase of 0.8 points for each question following the presentation. 100% of respondents ranked the need for additional hands-on training as 4 (somewhat agree) or 5 (strongly agree). Similar score increase patterns were observed in both residents and medical students. Results were not statistically significant, but demonstrated the need for increased urology education within pediatric residency.

ABSTRACT 84

RISK FACTORS ASSOCIATED WITH HOSPITALIZATION FOR MALARIA: RESULTS OF A CROSS-SECTIONAL, HOUSEHOLD SURVEY IN RURAL WESTERN UGANDA.

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Malaria is a leading cause of hospitalization and death among children in sub-Saharan Africa. Potential drivers of malaria-related morbidity and mortality include underutilization of preventative interventions, care-seeking delays, and inappropriate treatment, along with environmental factors such as heavy seasonal flooding driven by climate change. Herein, we describe risk factors associated with an outcome of pediatric admission for malaria hospitalization in the prior year based on data collected as part of a cluster randomized trial conducted in flood-prone villages in rural western Uganda (NCT06870344).

Methods: Household surveys were conducted in all households across 144 village clusters. A total of 3,523 households completed the baseline survey. Variables of interest including home construction, water source, bed net access and use, malaria rapid diagnostic test (mRDT) status, and care-seeking characteristics were compared between households reporting a child hospitalized for malaria in the past year and those without hospitalization. Statistical analyses used chi-square and Fisher's exact tests.

Results: 920 of 3,523 (26%) of households reported a child hospitalized with malaria in the last year. Households with a hospitalization were more likely to report flooding in the past year (41% v. 32%; $p<0.001$), as well as have unimproved wall construction (53% v. 48%; $p=0.0061$) and water sources (31% v. 23%; $p<0.001$). While long-lasting insecticidal net (LLIN) ownership and usage among children were comparable between groups, nets used by children in hospitalization households were more likely to have holes (75% v. 62%; $p<0.001$). Households with a hospitalization also had a higher prevalence of mRDT-positive children (8.8% v. 5.2%; $p<0.001$).

Interpretation: Recent flooding and poor household infrastructure are associated with more pediatric malaria hospitalizations, underscoring environmental and infrastructure vulnerabilities. Damaged LLINs are also associated with increased hospitalization despite similar ownership and usage across groups, suggesting net quality importance. Lastly, elevated mRDT positivity found in hospitalization households suggests ongoing malaria burden. This analysis is limited by self-reported hospitalization data and cross-sectional design. These findings support geographically targeted prevention efforts and a focus on improved infrastructure and net quality to reduce malaria burden in high-risk flooding communities.

ABSTRACT 85

A COMPARISON OF LARGE LANGUAGE MODELS' (LLMS) CLINICAL JUDGMENT IN THE TREATMENT OF VESTIBULAR SCHWANNOMA.

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Large Language Models (LLMs) such as ChatGPT, Gemini, Claude, Grok, and OpenEvidence are popular tools for utilizing Artificial Intelligence (AI). These tools show great promise to aid physicians treating complex conditions such as vestibular schwannoma (VS) by providing information and recommendations. The challenging nature of VS treatment necessitates that physicians understand each model's performance to use the highest quality information in clinical decisions. This study compared LLMs' clinical judgment in VS treatment, enhancing knowledge of AI capabilities and providing a framework to compare LLM responses to complex clinical questions.

Methods: Thirty questions from the CNS guidelines on VS treatment were selected. After either a simple or complex initial prompt for answer formatting, each question was given to ChatGPT-5, Gemini 3, Claude Sonnet 4, Grok 4, and OpenEvidence. For each answer, a confidence score from [0-100] was also obtained. OpenEvidence's inflexibility in response formatting prevented complex prompt answers and confidence scores from being obtained. Responses were then graded by a reviewer blinded to LLM choice for accurate reproduction of the CNS guidelines, and for the amount of extra information provided.

Results: Differences in accuracy of the same model with the simple vs. complex prompt failed to reach significance. However, accuracy scores within each prompt group were different. For the simple prompt, Grok 4 achieved the highest accuracy followed closely by Gemini 3, then OpenEvidence, Sonnet 4, and GPT-5 (74.8%, 73.4%, 65.8%, 52.2%, 47.6%, p=.029). For the complex prompt accuracy, Grok 4 then Gemini 3 led, followed by Sonnet 4 then GPT-5 (79.2%, 70.6%, 52.7%, 47.6%, p=.011). Grok 4 (1.00->1.53, p=.016) and Gemini 3 (1.00->1.50, p=.0067) provided more extra information using the complex prompt compared to the simple prompt. Finally, the complex prompt increased GPT-5 confidence scores from 84.5 to 91.6 (p<.0001).

Conclusions: This study compared popular AI tools' clinical reliability in VS treatment, offering physicians a greater ability to discern LLM performance. Although Grok 4 and Gemini 3 demonstrated the highest accuracy, rapid developments in AI and LLMs require continued research to understand current model performance. The framework of accuracy, extra information, and confidence to assess LLM responses represents a valuable contribution to efforts integrating AI tools into clinical workflows.

ABSTRACT 86

IMPACT OF SOCIAL SUPPORT ON SHORT-TERM HEALTHCARE VISITS IN OLDER ADULTS DIAGNOSED WITH ISCHEMIC OCULAR CONDITIONS.

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Older adults with cardiovascular disease are at risk for ischemic ocular conditions (e.g. central retinal artery occlusion [CRAO], central retinal vein occlusion [CRVO], or ischemic optic neuropathy [ION]) that can lead to vision loss and reduced quality of life. Social determinants of health (SDOH), such as social support, affect healthcare access and outcomes in older adults, but their impact within 30 days of diagnosis is unclear.

Methods: A retrospective cohort analysis was conducted with the public NIH All of Us Research database. Participants (*n* = 199) were ≥ 65 years old with CRAO, CRVO, or ION, with complete demographic data and responses to the Modified Medical Outcomes Study Social Support Survey (mMOS-SS), an 8-item validated tool for social support. A 30-day healthcare visit was defined as any emergency department (ED), inpatient, or outpatient visit within 30 days of diagnosis. The earliest visit was analyzed. Social support was assessed via mMOS-SS item scores (0-4) and a scaled score (0-100). Univariate logistic regression was performed for demographic, clinical, and social support variables. Multivariate logistic regression was performed with social support as the primary predictor, adjusted for covariates. Analyses were performed in R (v4.3.1).

Results: The cohort was predominantly White (88.9%, *n* = 177), male (60.8%, *n* = 121), college-educated (62.3%, *n* = 124), and aged 65–74 (65.8%, *n* = 131). Within the cohort, 19.1% (*n* = 38) had CRAO, 42.7% (*n* = 85) had CRVO, and 38.7% (*n* = 77) had ION. Most participants had a 30-day visit after diagnosis (67.8%, *n* = 135), primarily outpatient (85.9%, *n* = 116). In the unadjusted model, females had lower odds of a 30-day visit than males (*OR* = 0.50, 95% CI 0.28–0.90, *p* = .021). The adjusted model showed no association between overall social support score and 30-day visit. However, having someone to help if confined to bed (*OR* = 0.751, 95% CI 0.565–0.997, *p* = .048) or with personal problems (*OR* = 0.758, 95% CI 0.576–0.997, *p* = .048) was associated with lower odds of a 30-day visit.

Discussion: In this sample of older adults with ischemic ocular conditions, 30-day visits were common and mostly outpatient. The adjusted model showed no association between overall social support score and having a 30-day visit, but participants with certain aspects of social support had lower odds of having a 30-day visit. This may reflect the inclusion of emergent and scheduled visits or limited sample size.

ABSTRACT 87

ANALYSIS OF CONTRIBUTING FACTORS TO AUTONOMIC DYSFUNCTION IN PEOPLE WITH HIV.

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By disrupting neuronal networks such as the vagus nerve, HIV infection can result in peripheral neurological complications even after treatment with combination antiretroviral therapy. One such complication that commonly manifests in people with HIV is HIV-associated autonomic neuropathy (HIV-AN), a condition wherein autonomic reflexes are dysregulated. These reflexes can be quantified in a unified autonomic neuropathy score known as the Composite Autonomic Scoring Scale (CASS). Paradoxically, some PWH may present with a subclinical CASS score, yet still report symptoms such as orthostatic intolerance, tachycardia, and gastrointestinal disturbances. The etiology of dysregulation of autonomic reflexes in these patients remains unknown.

Research Objective: This study aims to elucidate the clinical factors and patient-reported experiences that may contribute to the dysregulation of autonomic reflexes in patients with HIV with intact autonomic nervous structures, defined as a subclinical CASS score. We hypothesize that clinical factors indicating dysfunction in other organ systems may be responsible for abnormal autonomic reflexes in the absence of HIV-AN.

Methods: 129 patient records were assessed between August 2020 and June 2025 from the EVA study at Mount Sinai Hospital, a prospective single-site study of adult patients with HIV living throughout New York City who experience autonomic dysfunction. I investigate data from questionnaires, medical records, and physiological tests to determine associations between autonomic dysfunction and (1) other clinical abnormalities and (2) patient-reported outcomes. Statistical tests performed include descriptive analysis, tests of correlation such as Spearman's rho, and logistic regression. Dysautonomia is operationalized as abnormal reflexes, such as baroreflex sensitivity.

Results/Discussion: Heart rate variability, operationalized as the Root Mean Square of Successive Differences (RMSSD), was associated with self-reported gastrointestinal symptoms such as lower abdominal pain (Spearman's rho = -0.23, $p = 0.009$), bloating (rho = -0.21, $p = 0.018$), and nausea/vomiting (rho = -0.22, $p = 0.015$). These results imply a potential gut-brain axis in the disease process of HIV-associated dysautonomia; further research is needed to investigate the possibility of a link between gastrointestinal dysfunction and cardiac manifestations of autonomic dysfunction in patients with HIV.

ABSTRACT 88

OPTIMIZING MRNA-LNP CANCER VACCINES WITH MIRNA TARGETING TECHNOLOGY.

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mRNA-LNP vaccines offer a flexible and potent platform for cancer immunotherapy by enabling precise antigen design. However, off-target expression, particularly in hepatocytes, can compromise both efficacy and safety. MicroRNA-responsive targeting (miRT) leverages tissue-specific microRNAs such as miR-122 to restrict antigen expression in non-target tissues like the liver, potentially enhancing vaccine specificity and therapeutic benefit.

Research Question: Can incorporating microRNA-responsive targeting (miRT-122) into mRNA-LNP vaccination enhance antitumoral immune responses? We hypothesized that miRT-122 mRNA-LNPs induce stronger and more targeted immune activation compared to untargeted mRNA-LNPs, leading to reduced tumor burden.

Methods: As an *in vivo* proof of concept study, we investigated the efficacy of miR-122-regulated mRNA-LNP vaccines in the A20 murine B-cell lymphoma model. BALB/c mice (n=5 per group) were injected with GFP-expressing A20 tumor cells and vaccinated intravenously with either miR-122-targeted GFP mRNA-LNPs (122T.GFP), untargeted GFP mRNA-LNPs (WT.GFP), mCherry mRNA-LNPs, or PBS. Vaccines were administered on days 0, 4, 7, 11, and 15. Tumor weights were measured on day 20. Anti-tumoral immune responses, including GFP-specific $CD8^+$ T cells, were characterized by flow cytometry.

Results: One-way ANOVA revealed a significant difference in tumor weights among groups ($F(3,15) = 14.55$, $p = 0.0001$, $R2 = 0.74$). Compared to PBS controls (mean = 2.57 g), tumor weights were significantly reduced in WT.GFP (mean = 0.52 g, $p = 0.0004$), 122T.GFP (mean = 0.28 g, $p = 0.0001$), and mCherry (mean = 0.91 g, $p = 0.0048$) groups. Notably, 122T.GFP-treated mice exhibited significantly smaller tumors than WT.GFP-treated mice ($p = 0.0084$, unpaired *t*-test), indicating that miR-122 targeting improves vaccine efficacy beyond untargeted delivery.

Conclusions/Future Plans: These findings establish miR-122-based targeting as a viable strategy to enhance the specificity and efficacy of mRNA-LNP cancer vaccines *in vivo*. Future work will focus on elucidating immune mechanisms and refining tissue-specific control to support clinical translation.

ABSTRACT 89

THE IMPACT OF BILIATRESONE AND MANNOSE ON HEPATIC STELLATE CELL STRESS AND ACTIVATION.

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Biliary atresia (BA) is a neonatal cholangiopathy marked by progressive bile duct injury, inflammation, and fibrosis. While cholangiocyte injury is a well-established driver of BA, the role of oxidative stress in hepatic stellate cell (HSC) activation and fibrogenesis remains underexplored. Biliatresone (BT), a plant-derived isoflavone, is used to model BA-related injury and is known to deplete glutathione and promote oxidative stress in zebrafish and murine cholangiocytes. Mannose has previously been shown to reduce stellate cell activation in multiple models of liver fibrosis, but its potential therapeutic role in biliary atresia has not been tested.

Objective: To investigate whether biliatresone induces oxidative stress and pro-fibrotic gene expression in hepatic stellate cells, and whether these effects are attenuated by mannose.

Methods: LX-2 human hepatic stellate cells were treated with biliatresone (0.5-2.0 uM) for 24 hours with or without mannose supplementation (1 or 5 mM). Oxidative stress was assessed using the CellROX assay. N-acetylcysteine (NAC), a known ROS scavenger, was used as a positive control. Gene expression of fibrogenic and matrix remodeling markers (*MMP10, MMP7, COL1A1, CTGF, TIMP2, PDGFRB, MPI*) was measured by qPCR. Conditioned media from BT-treated H69 cholangiocytes was also tested for paracrine effects on LX-2s.

Results: BT-treated LX-2s showed increased oxidative stress, with a near-significant main effect of treatment (two-way ANOVA, $p = 0.053$; n=3). Antioxidant additives significantly reduced CellROX fluorescence independent of treatment ($p = 0.001$), with both NAC and 5 mM mannose significantly decreasing ROS relative to no additive ($p < 0.05$). No treatment × additive interaction was observed, indicating consistent rescue effects across BT doses. At the transcriptional level, BT significantly induced matrix remodeling genes in LX-2 cells. *MMP10* expression was robustly increased in BT treated cells compared to DMSO (one-way ANOVA, $p < 0.0001$; n=6), and *MMP7* expression also differed significantly across treatment groups ($p = 0.0386$) driven by the highest BT dose. Conditioned media from BT-treated H69 cells did not induce significant transcriptional changes in LX-2s under current conditions.

Conclusions: These findings suggest that HSCs may contribute to BA fibrogenesis independent of epithelial paracrine signaling and highlight the potential of mannose as a modulator of redox-sensitive stellate cell activation.

ABSTRACT 90

STRENGTH TRAINING AND INJURY PREVENTION IN US FENCERS.

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Fencing is a combat sport in which two opponents attempt to score hits on their opponent using one of three weapons: foil, epee, or saber. Competitive athletes training for fencing will incur high training volume in both duration and intensity, increasing risk for overuse injury. Strength training is a common component of training for sports performance, and is commonly used in endurance sports to aid in injury prevention (Vincent et al., 2012). This study explored how strength training impacts injury incidence across different parts of the body as well as how it affects the rate of different mechanisms of injury.

Methods: A dataset of 491 fencers associated with USA Fencing was screened. 290 individual entries/athletes were included after removing duplicate and incomplete entries. Non-overuse or traumatic connective tissue injury patterns were excluded. Univariate logistic regression was performed to compare lifters versus non-lifters and injury likelihood. Multinomial logistic regression was performed to assess predictive value of demographic and training data on injury likelihood.

Results: 306 entries were included in the analysis (N = 306). Univariate logistic regression of lifters (n=151) versus non-lifters (n=156) demonstrated that strength training athletes were 3.4x more likely to get injured. Multinomial logistic regression, using age, BMI, sleep, injury location, strength training, and total weekly training hours, suggested that age was a significant predictor of injury at the elbow, knee, and shoulder ($p < 0.01$ for all), but strength training was not a significant predictor at any joint ($p > 0.05$ for all). Total time training was a significant predictor of muscle pull/tear and tendonitis ($p < 0.01$, $p = 0.017$, respectively), but strength training was not a significant predictor for either ($p > 0.05$ for all).

Conclusion: In this analysis, lifting was not shown to have a protective effect on joint injury for any joint, and was not shown to decrease rates of injury for the included mechanisms of injury. While other research has shown the benefit of strength training on tendon health and remodeling, and joint stability, our analysis was unable to illustrate an effect, perhaps as a result of the limited sample size of uninjured athletes and self-reported nature of athletes injuries and training. Future studies utilizing prospective data collection and validated questionnaires may be able to more accurately control for these confounding factors.

ABSTRACT 91

PERIOPERATIVE POTASSIUM CHANGES FOLLOWING SINGLE-UNIT IRRADIATED RED BLOOD CELL TRANSFUSIONS IN SURGICAL PATIENTS.

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Perioperative blood transfusions are essential for maintaining hemodynamic stability and oxygen delivery but carry a risk of transfusion-associated hyperkalemia. This risk is amplified by potassium leakage from stored red blood cells, a process further accelerated by gamma irradiation, now universally required to prevent transfusion-associated graft-versus-host disease. While irradiation improves transfusion safety, its impact on potassium homeostasis in surgical patients remains understudied.

Objective: This study investigates perioperative potassium shifts in patients receiving single-unit irradiated RBC transfusions to characterize the incidence and magnitude of post-transfusion hyperkalemia.

Methods: A retrospective cohort analysis was conducted at Mount Sinai Main Hospital with IRB approval through the Department of Anesthesiology. Adult surgical patients who received a single unit of irradiated RBCs intraoperatively were included. Pre- and post-transfusion serum potassium values were compared. Patient demographics, procedure types, preoperative creatinine levels, and transfusion characteristics were collected.

Results: A total of 670 transfusion encounters (n=643; median age 62.5 years, 52% female) were analyzed across multiple surgical subspecialties. Mean pre-transfusion potassium was 4.03 ± 0.63 mEq/L, rising to 4.34 ± 0.71 mEq/L post-transfusion (mean increase: 0.30 ± 0.55 mEq/L). Potassium elevation ≥0.5 mEq/L occurred in 31.3% of encounters. Post-transfusion hyperkalemia was observed in 4.9% of encounters at a threshold of >5.5 mEq/L and in 2.2% at >6.0 mEq/L. Data on unit storage duration, irradiation-to-transfusion interval, and transfusion rate were not consistently available in this cohort.

Conclusion: Even a single unit of irradiated RBCs is associated with modest but measurable increases in serum potassium among perioperative patients. While most elevations were clinically insignificant, a subset developed hyperkalemia exceeding 5.5 mEq/L, supporting the need for careful monitoring in high-risk populations. These findings showcase the importance of optimizing transfusion protocols, potentially through limiting post-irradiation storage duration, utilizing potassium-reducing strategies, or tailoring transfusion practices to patient risk profiles. Larger-scale studies are warranted to evaluate cumulative effects in multi-unit transfusions.

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Provider Group-Level Differences in Lengths of Labor among NTSV pregnancies
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