Eighth Annual

Karen Zier PhD

Medical Student Research Day

Program and Abstracts

Thursday, May 1, 2025

12:15 - 4:00PM

Icahn School of Medicine at Mount Sinai

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Icahn School of Medicine at Mount Sinai

Eight Annual Karen Zier
Medical Student Research Day
May 1, 2025

Welcome to the 30th Annual Medical Student Research Day (MSRD). The Medical Student Research Office (MSRO) is proud to showcase the medical students' scholarly projects. These projects presented reflect the intellectual curiosity and critical thinking of our students and are a result of their hard work and the dedication of their faculty mentors. We thank the over 100 mentors who have worked with students for the past year. And send a special thank you to the Scholarly Track Advisors for their dedicated support and feedback:

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

The MSRD has been made possible by the unrelenting work by Grace Oluoch and Yakhira Encarnacion-Patterson, senior program administrators for the MSRO.

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

Keith Sigel, MD, PhD
Director, PORTAL

Mary Rojas, PhD
Director, MSRO

PROGRAM

12:15 - 1:15 pm
Session A-
Poster Presentations
Annenberg 12th Floor

Group B - Lunch

1:25 - 2:25 pm
Session B-
Poster Presentations
Annenberg 12th Floor

Group A - Lunch

Welcome 2:35 - 2:50 pm

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

David C. Thomas, MD, MHPE
Dean for Medical Education
Chair, Leni and Peter May Department of Medical Education
Icahn School of Medicine at Mount Sinai

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

Student Platform Presentations and Closing 3:00 - 4:00 pm

Elise M. Solazzo, MS II
Scoping the First Aid Knowledge of U.S. Medical Students
MENTOR: CHRISTOPHER STROTHER, MD

Hailey Yetman, MS II
Health Related Social Risk Factors are Associated with Lower Self-Reported Quality of Life in Patients on Hemodialysis
MENTOR: LILI CHAN, MD

Nina Rodriguez, MD/MSCR Scholarly Year
Evaluating the 2023 European Association of the Liver's Guidelines for Intrahepatic Cholestasis of Pregnancy: Risk Stratification and Outcomes in 4,000+ U.S. Patients
MENTOR: TATYANA KUSHNER, MD

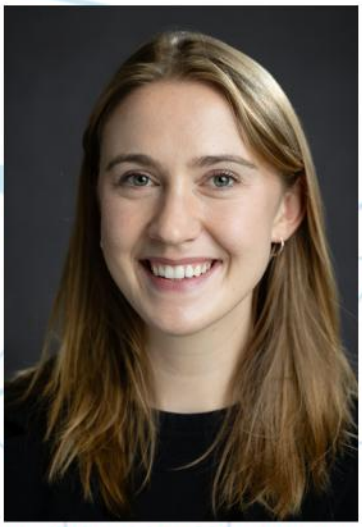
Matthew D Park, PhD, (MD/PhD)
Hematopoietic Aging Promotes Lung Cancer by Fueling IL-1A-Driven Emergency Myelopoiesis
MENTOR: MIRIAM MERAD, MD, PHD

Closing Remarks

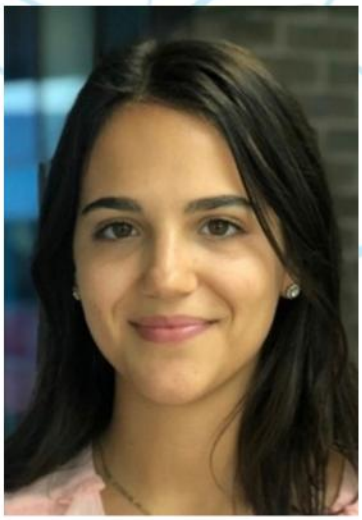
Jenny Lin, MD, MPH
Associate Director, SCHOLaR
Medical Student Research
Icahn School of Medicine at Mount Sinai

STUDENT SPEAKERS

ELISE M. SOLAZZO, MS II
Scoping the First Aid Knowledge of U.S. Medical Students
Abstract #: 109



HAILEY YETMAN, MS II
Health Related Social Risk Factors are Associated with Lower Self-Reported Quality of Life in Patients on Hemodialysis
Abstract #: 119



NINA RODRIGUEZ, MD/MSCR SCHOLARLY YEAR
Evaluating the 2023 European Association of the Liver's Guidelines for Intrahepatic Cholestasis of Pregnancy: Risk Stratification and Outcomes in 4,000+ U.S. Patients
Abstract #: 100

MATTHEW D. PARK, PHD, (MD/PHD)
Hematopoietic Aging Promotes Lung Cancer by Fueling IL-1A-Driven Emergency Myelopoiesis
Abstract #: 89

SECTION 1:

List of Abstracts

Note: Medical students' name is the first author and the last author is the mentor.
Abstracts with astericks (*) are MSTAR abstracts that were presented in MSTAR Research Day on September 17, 2024.

1	**AXIAL CHEST WALL SLOPE IN HEALTHY FEMALES: QUANTIFYING INHERENT SKELETAL ASYMMETRY.** **Erin Abbott**, Anvith Reddy[1], Galen Perdikis[1], G Maxwell[2], Allen Gabriel[3]. [1,2,3]Plastic Surgery. [1]Vanderbilt University Medical Center, Nashville, Tennessee, [2]Maxwell Aesthetics, Nashville, Tennessee, [3]AG Aesthetic Center, Vancouver, Washington.
2*	**MINIMALLY INVASIVE SURGICAL (MIS) EVACUATION FOR INTRACEREBRAL HEMORRHAGE (ICH): FRAILTY MATTERS.** **Ryan Afreen**, Akhil Rao[1], Bahie Ezzat[1], Christopher Kellner[2], Neha Dangayach[3]. [1]Medical Education, [2]Neurosurgery, [3]Neurology. [1,2,3]Icahn School of Medicine at Mount Sinai, New York, New York.
3	**THE INCIDENCE AND IMPACT OF INVASIVE MELANOMA SUBTYPES IN ICELAND 1955-2023.** **Omar Alani**, Areeba Ahmed[1], Eydis Lilja[2], David Hoyt[3], Sierra Thomas[4], Austin J. Piontkowski[5], Jonathan Ungar[5], Arni Kjalar Kristjansson[6], Jon Gunnlaugur Jonasson[7], Nicholas Gulati[5], Jónas Adalsteinsson[5]. [1,2,3,4,5,6,7]Dermatology. [1]Northwestern University, Evanston, Illinois, [2]University of Iceland, Reykjavik, Iceland, [3,4]Unviersity of Utah, Salt Lake City, Utah, [5]Icahn School of Medicine at Mount Sinai, New York, New York, [6]University of Connecticut, Storrs, Connecticut, [7]Landspitali University Hospital of Iceland, Reykjavík, Iceland.
4	**MACHINE LEARNING-BASED SCREENING FOR SHORT-TERM MORTALITY IN ICELANDIC SKIN CANCER PATIENTS: A NATIONWIDE RETROSPECTIVE COHORT ANALYSIS.** **Dany Alkurdi**, Lara Shqair[1], Saniya Tariq[1], Omar Alani[1], Jonas Adalsteinsson[1]. [1]Dermatology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
5	**PALLIATIVE CARE NEEDS FOR PATIENTS WITH ADVANCED HEPATOCELLULAR CARCINOMA WHO REPORT THE HIGHEST AND LOWEST QUALITY OF LIFE.** **Noy Alon**, Deborah watman[1], Crystal Chen[1], Meng Wu[2], Sasha Perez[1], Christopher Woodrell[1]. [1]Geriatrics and Palliative Medicine, [2]Oncological Sciences. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.

6*	**ASSOCIATION BETWEEN RADIOACTIVE IODINE TREATMENT FOR DIFFERENTIATED THYROID CANCER AND SECOND PRIMARY MALIGNANCIES AMONG GERIATRIC PATIENTS.** **Julia An,** Mark Choi[1], Chen Yang[2], Marita Teng[3], Maaike van Gerwen[3]. [1]Engineering and Applied Science, [2]Population Health Science and Policy, [3]Otolaryngology. [1]School of Engineering and Applied Science, University of Pennsylvania, Philadelphia, Pennsylvania, [2,3]Icahn School of Medicine at Mount Sinai, New York, New York.
7	**CLINICODEMOGRAPHIC PREDICTORS OF ENROLLMENT AND OUTCOMES IN EARLY PHASE ONCOLOGY CLINICAL TRIALS IN A DIVERSE URBAN POPULATION.** **Anna Argulian**, Elena Baldwin[1], Ashwin Kulshrestha[2], Deborah Doroshow[3]. [1]Medicine, [2]Medical Education, [3]Oncological Sciences. [1,2,3]Icahn School of Medicine at Mount Sinai, New York, New York.
8	**THE ASSOCIATION BETWEEN PROLONGED LABOR AND QUANTITATIVE BLOOD LOSS DURING POSTPARTUM HEMORRHAGE.** **Daniel Baboolal,** Jiwoo Park[1], Ceyda Oner[2]. [1]Medical Education, [2]Obstetrics, Gynecology, and Reproductive Science. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.
9	**A NATIONWIDE SURVEY TO ASSESS ANTI-SEIZURE MEDICATION PRESCRIBING IN OLDER ADULTS.** **Abdul Bah**, Megan Mackenzie[1], Katie Jung[1], Eric Kwon[2], Brian Johnson[3], Eric Bautista[1], Leah Blank[1]. [1,2]Neurology, [3]Medical Education. [1,3]Icahn School of Medicine at Mount Sinai, New York, New York, [2]High School Student.
10	**DEFINING AND FRAMING SOCIAL NEEDS, IN AN INTAKE FORM FOR THE MAPS PROGRAM, THAT COULD BE ADDRESSED BY COMMUNITY BASED ORGANIZATIONS TO IMPROVE HEALTH CARE OUTCOMES IN PROGRAM PARTICIPANTS.** **Roger Bautista**, Boluwatito Oladeinde[1], Payal Ram[2], Carlos Salama[3]. [1]Medical Education, [2]Global Health and Health System Design, [3]Infectious Diseases. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York, [3]NYC Health + Hospitals/Elmhurst, Elmhurst, New York.

11	**EFFECTS OF IMMUNOSUPPRESSANTS ON ACUTE GVHD TARGET ORGAN DAMAGE.** **Brenden Berrios,** Mariano Prado-Acosta[1], James Ferrara[1]. [1]Oncological Sciences. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
12	**CLINICAL OUTCOMES FOR MINIMALLY INVASIVE IRRIGATING CATHETER APPROACH FOR PATIENTS UNDERGOING EXTRAVENTRICULAR DRAINAGE (EVD).** **Priya Bhanot,** Ryan Afreen[1], Roshini Kalagara[1], Akhil Rao[1], Christopher Kellner[1]. [1]Neurosurgery. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
13	**A QUALITATIVE STUDY EXPLORING THE POST-TREATMENT NEEDS OF YOUNG ADULT CANCER SURVIVORS IN RURAL UNDERSERVED COMMUNITIES.** **Elle Billman,** Lidia Schapira[1], Stephanie Smith[1]. [1]Oncological Sciences. [1]Stanford School of Medicine, Stanford, California.
14	**FRAGILITY ANALYSIS EVALUTATING RANDOMIZED CONTROLLED TRIALS OF OSTEOTOMY FOR OSTEOARTHRITIS ARE FRAGILE: A SYSTEMATIC REVIEW.** **Reginald Brewster,** Jamie Frost[1], Michaela Corvi[2], Avanish Yendluri[1], John Corvi[3], Junho Song[3], Nikan Namiri[3], David Kantrowitz[3], Robert Parisien[3]. [1,2]Medical Education, [3]Orthopaedics. [1,3]Icahn School of Medicine at Mount Sinai, New York, New York, [2]Royal College of Surgeons Ireland, Dublin, Ireland.
15	**VISUALIZATION OF DERMAL PAPILLA SIGNALING PROTEINS THROUGH THE HAIR CYCLE.** **Alexia Brown,** Sangeeta Ghuwalewala[1], Jenny Cao[1], Amelie Rezza[1], Martina Rangl[1], Laura Grisanti[1], Michael Rendl[1]. [1]Developmental and Regenerative Biology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.

*16**	**PREDICTING POSTOPERATIVE DELIRIUM IN GERIATRIC COLECTOMY PATIENTS USING THE MODIFIED 5-FACTOR FRAILTY INDEX.** **Cole Brown,** Alexandra Agathis[1], Jeanne Wu[1], Celia Divino[1]. [1]Surgery. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
17	**VARIANTS OF SERPINA1 INCREASE VERTEBRAL BONE LENGTH IN HUMAN SUBJECTS.** **Ramone Brown,** Janai Augustin[1], Nilsson Holguin[1]. [1]Orthopaedics. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
18	**IMPACT OF HEMODYNAMICALLY SIGNIFICANT PATENT DUCTUS ARTERIOSUS (HSPDA) ON LONG-TERM NEURODEVELOPMENTAL OUTCOMES.** **Jordan Bryan,** Pradeep Mally[1], Margaret Christian[1], Elizabeth Fu[2], Daryn Ezikeuzor[3]. [1,3]Neonatology, [2]Medical Education. [1]NYU Langone, New York, NY, [2]University College London, London, England, [3]Harvard University, Cambridge, Massachusetts.
19	**DISPOSABLE INK: ASSESSING THE UTILITY OF A MOBILE TATTOO REMOVAL UNIT IN TRAUMA PREVENTION.** **Helena Bugacov,** Damon Clark[1], Ann-Gel Palermo[2], Maggie McGing[1], Corey Ambrose[1], Danielle Brabender[1]. [1]Surgery, [2]Medical Education. [1]University of Southern California, Los Angeles, California, [2]Icahn School of Medicine at Mount Sinai, New York, New York.
20	**A REVIEW OF PATIENT DEMOGRAPHICS AND PATIENT-REPORTED OUTCOME MEASURES IN TRIALS USED TO INFORM CLINICAL PRACTICE GUIDELINES FOR PATIENTS WITH HIP OSTEOARTHRITIS.** **Rodnell Busigo Torres,** Luca Valdivia[1], Charu Jain[1], Brocha Stern[2], Calin Moucha[1], Brett Hayden[1]. [1]Orthopaedics, [2]Population Health Science and Policy. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.

21	**ARE THE HOOS AND KOOS PATIENT-REPORTED OUTCOME MEASURES VALIDATED FOR COMMON NON-ENGLISH LANGUAGES AND ASSOCIATED CULTURES IN THE UNITED STATES? A SYSTEMATIC REVIEW.** **Rodnell Busigo Torres,** Jennifer Yu[1], Brett Hayden[1], Lauren Shapiro[2], Brocha Stern[3]. [1,2]Orthopaedics, [3]Population Health Science and Policy. [1,3]Icahn School of Medicine at Mount Sinai, New York, New York, [2]Department of Orthopaedics, University of California San Francisco, 1500 Owens Street, San Francisco, CA.
22	**ASSESSING FOR TRAUMA IN AN INPATIENT CHILD PSYCHIATRY UNIT USING THE PEDIATRIC ACES AND RELATED LIFE EVENTS SCREENER (PEARLS).** **Julie Byrnes,** Susan Kim[1], Aliza Grossberg[2], Timothy Rice[3]. [1,2,3]Psychiatry. [1]Massachusetts General Hospital, Boston, MA, [2]NYU, NY, NY, [3]Icahn School of Medicine at Mount Sinai, New York, New York.
23	**PREDICTORS OF SHORT-TERM SURGICAL OUTCOMES OF PEDIATRIC THYROIDECTOMY: A RETROSPECTIVE STUDY OF THE FUKUSHIMA HEALTH MANAGEMENT SURVEY COHORT.** **Courtney Chau,** Camilo Hernandez Joya[1], Akihiko Ozaki[2]. [1]Medical Education, [2]Thyroid and Endocrinology. [1]Icahn School of Medicine at Mount Sinai, New York, New York, [2]Fukushima Medical University, Fukushima, Japan.
24	**THE EFFECTS OF INTRAOPERATIVE METHADONE ON TRANSGENDER AND GENDER-DIVERSE PATIENTS RECEIVING VAGINOPLASTY.** **Rong Shen Chen,** Sananda Pai[1], Peter Shamamian[2], Subha Karim[2], Rajveer Purohit[3], Scott Horn[4], Jess Ting[2], Joshua Safer[2].[1]Medical Education, [2]Plastic and Reconstructive Surgery, [3]Urology, [4]Anesthesiology. [1,2,3,4]Icahn School of Medicine at Mount Sinai, New York, New York.
25	**EXPLORING THE PATIENT-DEFINED PRIMARY CARE GOALS OF PEOPLE WHO USE DRUGS IN INPATIENT REHABILITATION: A QUALITATIVE STUDY.** **Sophia Chertock,** Jeffrey Weiss[1]. [1]Medicine. [1]Icahn School of Medicine at Mount Sinai, New York, New York.

26	**LINKING CORTICAL DEMYELINATION TO LANGUAGE IMPAIRMENTS IN EARLY MS.** **Madeline Cheshire,** Qingying Feng[1], Emma Dereskewicz[1], Jonadab Dos Santos Silva[1], Francesco La Rosa[1], Edward Sizer[1], Julia Galasso[1], James Sumowski[1], Erin Beck[1]. [1]Neurology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
27	**DISPARITIES IN EMERGENCY DEPARTMENT UTILIZATION AMONG PATIENTS DIAGNOSED WITH ENDOMETRIAL CANCER.** **Isabel Chess,** Sharonne Holtzman[1], Riva Lechtinger[2], Madison Cox[2], Rebecca Rosenzweig[2], Elianna Kaplowitz[3], Stephanie Blank[1]. [1]Obstetrics, Gynecology, and Reproductive Science, [2]Medical Education, [3]Biostatistics. [1,2,3]Icahn School of Medicine at Mount Sinai, New York, New York.
28	**EFFECT OF PERIOSTEAL ELEVATION ON POST-RHINOPLASTY BRUISING.** **Allison Choe,** Mingyang Gray[1]. [1]Otolaryngology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
29	**RISK FACTORS AND COMPLICATIONS ASSOCIATED WITH PROLONGED LENGTH OF STAY IN PATIENTS UNDERGOING CSF RHINORRHEA ENDOSCOPIC REPAIR.** **Tony Chung,** Shaun Edalati[1], Shiven Sharma[1], Alfred-Marc Iloreta[1], Satish Govindaraj[1].[1]Otolaryngology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
30	**IMPACT OF DOULA CARE ON SOCIAL DETERMINANTS OF HEALTH: DOULAS AS A TOOL TO ADDRESS NON-MEDICAL HEALTHCARE DISPARITIES WITHIN THE HEALTHCARE SYSTEM.** **Donessa Colley,** Kanwal Haq[1], Alva Rodriguez[1], Anabel Rivera[2], Kimberly Mathurin[3], Sheela Maru[1]. [1]Obstetrics, Gynecology, and Reproductive Science, [2,3]Doula Care. [1]Icahn School of Medicine at Mount Sinai, New York, New York, [2]Ancient Song Doula Services New York City, NY, [3]Caribbean Women's Health Association.

31	**DELAY IN CHEMOTHERAPY INITIATION POST OP NEGATIVELY IMPACTS OUTCOMES IN PATIENTS WITH ENDOMETRIAL CANCER.** **Madison Cox,** Sharonne Holtzman[1], Elianna Kaplowitz[2], Isabel Chess[2], Riva Letchinger[2], Rebecca Rosenzweig[2], Stephanie Blank[1]. [1]Obstetrics, Gynecology, and Reproductive Science, [2]Medical Education. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.
32	**KINEMATIC VS. MECHANICAL ALIGNMENT IN TOTAL KNEE ARTHROPLASTY: A STATISTICAL ANALYSIS OF RANDOMIZED CONTROL TRIALS UTILIZING DICHOTOMOUS AND CONTINUOUS FRAGILITY METRICS.** **Adriano Cuadros,** Michaela Corvi[1], Avanish Yendluri[2], Francesca Docters[2], Michael Shatkin[2], John Corvi[2], Suraj Dhanjani[2], Brett Hayden[2], Douglas Unis[2], Robert Parisien[2]. [1,2]Orthopaedics. [1]Royal College of Surgeons in Ireland, 123 St Stephen's Green, Dublin, Ireland, [2]Icahn School of Medicine at Mount Sinai, New York, New York.
*33**	**PATTERNS OF PLATELET DYSFUNCTION IN NEUROTRAUMA PATIENTS BASED ON AGE.** **Mehek Dedhia**, Daniel Cummins[1], Jueria Rahman[1], Zachary Hickman[1]. [1]Neurosurgery. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
*34**	**ASSOCIATIONS BETWEEN SOCIAL SUPPORT AND OUTCOMES IN OLDER ADULTS WITH CANCER UNDERGOING PALLIATIVE RADIATION THERAPY.** **Varun Devraj,** Mayuri Jain[1], Laura Jonsson[1], Amare Osei[1], Erin Moshier[2], Kavita Dharmarajan[1]. [1]Radiation Oncology, [2]Population Health Science and Delivery. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.
35	**A COMPARATIVE ANALYSIS OF SHAVE AND PUNCH BIOPSIES FOR T CELL RECEPTOR SEQUENCING.** **Donald Doanman,** Zachary Belden[1], Brett Baskovich[1]. [1]Pathology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.

36	**TRACKING ANTIDEPRESSANT RESPONSE WITH MOTORIC FEATURES OF PSYCHOMOTOR RETARDATION.** **Helen Downes,** Stephen Heisig[1], Helen Mayberg[1].[1]Neurology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
37	**STRENGTHENING THE HYPERTENSION CARE CASCADE THROUGH A DOOR-TO-DOOR, NON-PHYSICIAN MEDICATION AND PEER COUNSELING INTERVENTION IN RURAL GHANA: THE COMBINE PILOT TRIAL.** **Yehia Elkersh,** Raymond Aborigo[1], Engelbert A Nonterah[2], Irene Kuwolamo[1], Evan Alvarez[3], Carol Horowitz[4], Timothy Awine[5], Allison Squires[6], Benedict Weobong[7], David Heller[4]. [1]Population Health Science and Policy, [2]Surgery, [3]Global Health, [4]Medicine, [5]Epidemiology, [6]Global Consortium of Nursing and Midwifery Studies, [7]School of Global Health. [1,2,5]Navrongo Health Research Centre, Navrongo, Ghana, [3,4]Icahn School of Medicine at Mount Sinai, New York, New York, [6]NYU, [7]York University, Toronto, Canada.
38	**TRANSPARENT ARTIFICAL INTELLIGENCE MODEL PREDICTS AND EXPLAINS PROLONGED ICU STAYS AFTER PEDIATRIC SPINE DEFORMITY SURGERY.** **Suhas Etigunta,** Samuel Cho[1]. [1]Orthopaedics. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
39	**BENIGN PAROXYSMAL POSITIONAL VERTIGO AND CONCOMITANT PERIPHERAL VESTIBULAR DYSFUNCTION.** **Carly Fiest,** Maura Cosetti[1]. [1]Otolaryngology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
40	**THE IMPACT OF TELEPSYCHIATRY SERVICES ON MENTAL HEALTH OUTCOMES POST-COVID-19 AT A STUDENT-RUN FREE MENTAL HEALTH CLINIC.** **Annabelle Freilich,** Tracy Okine[1], Christian Porras[1], Ryan Afreen[1], Pamela Toh[1], Taelor Matos[1], Isabella Ciocca[1], Emma Agudelo[1], Vivek Kanpa[1], Samuel Powell[1], Craig Katz[2]. [1]Medical Education, [2]Psychiatry. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.

41	**THE IMPACT OF SELECTIVE SEROTONIN REUPTAKE INHIBITOR USE ON POSTOPERATIVE COMPLICATIONS IN DEEP INFERIOR EPIGASTRIC PERFORATOR FLAP BREAST RECONSTRUCTION.** **Jamie Frost,** Jacquelyn Roth[1], Carol Wang[2], Reanna Shah[1], Megan Tang[1], Esther Kim[1], Keisha Montalment[1], Bernice Yu[1], Peter Henderson[1]. [1]Plastic and Reconstructive Surgery, [2]Plastic Surgery. [1]Icahn School of Medicine at Mount Sinai, New York, New York, [2]Donald and Barbara Zucker School of Medicine at Hofstra/Northwell Uniondale, New York.
42	**VALIDATING BODY INCONGRUENCE SCORE IN GENDER-AFFIRMING VAGINOPLASTY PATIENTS.** **Ivory Fu,** Janet Coleman-Belin[1], Isabel Corb[2], Shelby Brage[3], Jess Ting[4]. [1,2,3]Medical Education, [4]Plastic and Reconstructive Surgery. [1,4]Icahn School of Medicine at Mount Sinai, New York, New York, [2]Washington University in St. Louis, St. Louis, MO, [3]New York University.
43	**PREDICTING MENTAL HEALTH CARE NEEDS AND UTILIZATION AMONG TORTURE SURVIVORS AT AN NYC-BASED HUMAN RIGHTS CENTER.** **Helen Gordan,** Benjamin McVane[1], Dinali Fernando[1]. [1]Emergency Medicine. [1]Mount Sinai, New York, New York.
44	**DESCRIPTIVE ANALYSIS OF SHORT-TERM SURGICAL OUTCOMES OF PEDIATRIC THYROIDECTOMY: A STUDY OF THE FUKUSHIMA HEALTH MANAGEMENT SURVEY COHORT.** **Camilo Hernandez Joya**, Courtney Chau[1], Akihiko Ozaki[2], Robert Yanagisawa[3], Craig Katz[4]. [1]Medical Education, [2]Thyroid and Endocrinology, [3]Endocrinology, [4]Psychiatry. [1,3,4]Icahn School of Medicine at Mount Sinai, New York, New York, [2]Fukushima Medical University, Fukushima City, Japan.
45	**EPIDEMIOLOGY OF INJURIES IN COMPETITION AND PRACTICE SETTINGS AMONG ADULT US FENCERS.** **Katharine Holmes,** Periklis Giannakis[1], Mary Rojas[2], Jashvant Poeran[3], Alexis Colvin[4]. [1,4]Orthopaedics, [2]Medical Education, [3]Anesthesiology. [1,3]Hospital for Special Surgery, New York, New York, [2,4]Icahn School of Medicine at Mount Sinai, New York, New York.

*46**	**THE ROLE OF NEUTROPHILS IN THE AGING AND HEALING OF THE INTERVERTEBRAL DISC.** **James Hong,** Timothy Jacobsen[1], James Iatridis[1]. [1]Orthopaedics. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
47	**ASSOCIATION OF COMMUNITY DEPRIVATION WITH PROGRESSION OF LIVER FIBROSIS AND STEATOSIS IN CHILDREN WITH MASLD.** **Olivia Hoover,** Cindy Jiang[1], John Bucuvalas[1]. [1]Pediatrics. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
*48**	**DYSREGULATION OF SERUM IMMUNE PROTEINS IN CANCER PATIENTS WITH CUTANEOUS IMMUNE-RELATED ADVERSE EVENTS.** **Benjamin Hu,** Jacob Glickman[1], Camille Powers[1], Yeriel Estrada[1], Emma Guttman-Yassky[1], Nicholas Gulati[1]. [1]Dermatology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
49	**DYNAMIC MODELS FOR PANDEMIC DISEASE MODELING: COVID-19 VACCINATION.** **Sharon Huang,** Girish Nadkarni[1]. [1]Aritificial Intelligence. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
50	**RISK FACTORS FOR DEVELOPMENT OF UVEITIS AND CYSTOID MACULAR EDEMA AFTER CATARACT SURGERY.** **Jihwan Hwang,** Yuzhe Li[1], Sumayya Ahmad[1], Janek Klawe[1], Carl Wilkins[1]. [1]Ophthalmology, [1]Icahn School of Medicine at Mount Sinai, New York, New York.

51	**A COMPASS-31 SURVEY TO MEASURE AUTONOMIC FUNCTION IN PRIMARY OPEN ANGLE GLAUCOMA (POAG) PATIENTS.** **Sujai Jaipalli,** Sabrina Liu[1], Hetince Zhao[1], Nisha Chadha[1], Masako Chen[1], Louis Pasquale[1]. [1]Ophthalmology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
52	**IDENTIFICATION OF DEMOGRAPHIC AND CLINICAL RISK FACTORS FOR BREAST CANCER DEVELOPMENT IN THYROID CANCER SURVIVORS USING MACHINE LEARNING ALGORITHMS.** **Sandra Jardines,** Calista Dominy[1], Denise Lee[2], Vishal Midya[3], Maaike van Gerwen[4]. [1]Pediatrics, [2]Surgery, [3] Environmental Medicine and Public Health, [4]Otolaryngology. [1]Weill Cornel, New York, NY, [2,3,4]Icahn School of Medicine at Mount Sinai, New York, New York.
53	**USABILITY OF A PROJECTION MAPPING SURGICAL NAVIGATION SYSTEM FOR SIMULATED PEDICLE SCREW PLACEMENT.** **Julian Javier,** Lillian Mo[1], Tyree Williams[2], James Hu[3]. [1]Medical Education, [2]Diversity Innovation Hub, [3]Illuminant Surgical. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York, [3]Illuminant Surgical, Culver City, California.
54	**IMAGE-GUIDED DOSIMETRY OF YTTRIUM-90 TRANS-ARTERIAL RADIOEMBOLIZATION FOR HEPATIC CARCINOMA.** **Nathan Ji,** Alex Sher[1], Edward Kim[1]. [1]Interventional Radiology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
55	**COMMUNITY ASSET AND RESOURCE MAPPING OF ADOLESCENT AND YOUTH-FRIENDLY HEALTH SERVICES IN UASIN GISHU COUNTY, KENYA.** **Camila Johanek,** Thiyasha Kodituwakku[1], Celestine Ashimoshi[2], Irene Marete[3], Lonnie Embleton[1]. [1]Arnhold Institute of Global Health, [2,3]Research. [1]Icahn School of Medicine at Mount Sinai, New York, New York, [2]Moi Teaching and Referral Hospital, Eldoret, Kenya, [3]Moi University School of Medicine, Eldoret, Kenya.

56	**CATASTROPHIZING ABOUT ASTHMA SCALE: VALIDITY AND CONVERGENCE WITH THE GAD-7 SCALE AMONG OLDER ADULTS WITH ASTHMA.** **Rubashruti Kanna,** Juan Wisnivesky[1], Alex Federman[1]. [1]Medicine. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
57	**CARDIAC ARRHYTHMIAS AND SUBRETINAL DRUSENOID DEPOSITS IN AGE-RELATED MACULAR DEGENERATION: INSIGHTS FROM A RETROSPECTIVE STUDY AT MOUNT SINAI HOSPITAL.** **Anisha Kasi,** Yang Fei[1], Vikram Agarwal[2], Gareth Lema[1], Richard Rosen[1], R. Theodore Smith[1]. [1]Ophthalmology, [2]Cardiology. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.
58	**NIPPLE SHARING: SYSTEMATIC REVIEW OF TECHNIQUES AND OUTCOMES FOR POST-CANCER BREAST RECONSTRUCTION.** **Esther Kim,** Janet Coleman-Belin[1], Areej Abu El Hawa[2], Peter Henderson[2]. [1]Medical Education, [2]Plastic and Reconstructive Surgery. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.
59	**INTENSIVE VERSUS STANDARD NEOADJUVANT 5-FLUOROURACIL, LEUCOVORIN, OXALIPLATIN, AND DOCETAXEL (FLOT) FOR GASTRIC CANCER: A RETROSPECTIVE ANALYSIS.** **Josh Kim,** Judy Li[1], Allen Yu[1], Spiros Hiotis[1], Umut Sarpel[2], Daniel Labow[1], Benjamin Golas[1], Noah Cohen[1]. [1,2]Surgery. [1]Icahn School of Medicine at Mount Sinai, New York, New York, [2]Harvard Medical Faculty Physicians, Boston, MA.
60	**NERVE INGROWTH AT THE INTERVERTEBRAL DISC PEAKS TWO WEEKS AFTER ANNULUS INJURY, MAY NOT PLAY A ROLE IN CHRONIC PAIN RESPONSE.** **Niklas Koehne,** Irina Heggli[1], Claire Pishko[2], James Iatridis[1]. [1,2]Orthopaedics. [1]Icahn School of Medicine at Mount Sinai, New York, New York, [2]University of Arizona College of Medicine, Tucson, Arizona.

61	**PARADOXICAL IMPROVEMENT IN MALIGNANT PLEURAL MESOTHELIOMA OUTCOMES FOLLOWING DELAYED TREATMENT INITIATION.** **Ashwin Kulshrestha,** Stephanie Tuminello[1]. [1]Thoracic Surgery. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
62	**A COMPREHENSIVE COMPARISON OF SAGITTAL ALIGNMENT PARAMETERS IN ADULT PATIENTS WITH AND WITHOUT SCOLIOSIS USING FULL-BODY X-RAY IMAGING.** **Mark Kurapatti,** Ryan Hoang[1], Abhijeet Grewal[2], Albert Li[3], Alexander Yu[2], Kareem Mohamed[2], Yash Lahoti[2], Akiro Duey[2], Timothy Hoang[2], Joshua Lee[4], Junho Song[4], Samuel Cho[4]. [1,2,3]Medical Education, [4]Orthopaedics. [1]UC Irvine School of Medicine, [2,4]Icahn School of Medicine at Mount Sinai, New York, New York, [3]University of Southern California Keck School of Medicine.
63	**ALTERED HEMODYNAMICS IN POSTPARTUM PREECLAMPSIA PATIENTS WITH OBESITY.** **Katherine Larratt,** Rachel Meislin[1], Daniel Katz[2]. [1]Obstetrics, Gynecology, and Reproductive Science, [2]Anesthesiology. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.
64	**FACTORS ASSOCIATED WITH WOUND COMPLICATIONS FOLLOWING PSARP OR PULL-THROUGH PROCEDURES.** **Christina Lefebvre,** Brian Coakley[1]. [1]Surgery. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
65*	**RALOXIFENE INJECTIONS INCREASE EVOKED PAIN TOLERANCE IN ALL NAÏVE MICE WITH PARTICULAR PROTECTION FROM INJURY-INDUCED PAIN IN OLD MALE MICE.** **Michael Lemonick,** Neharika Bhadouria[1], Joana Almeida[1], Tori Kroon[1], Janai Augustin[1], Rainier Soriano[2], Nilsson Holguin[1]. [1]Orthopaedics, [2]Geriatrics and Palliative Medicine. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.

66	**MUSIC THERAPY FOR SERIOUSLY ILL INFANTS.** **Aaron LeVan,** Stephanie Bernard[1], Andrea Weintraub[1], Joanne Loewy[2], Elizabeth Barone[2], Katherine Guttmann[1]. [1]Pediatrics, [2]Music Therapy. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.
67	**INSIDE OUT VS OUTSIDE IN: ELUCIDATING THE PATHOPHYSIOLOGY OF ATOPIC DERMATITIS IN IMMIGRANT VS NONIMMIGRANT POPULATIONS.** **Daniel Liu,** Emma Guttman-Yassky[1]. [1]Dermatology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
68	**THE STAGGERING RISE IN ELECTRIC BIKING (E-BIKE) INJURIES: A 10-YEAR AGE AND SEX SPECIFIC ANALYSIS OF NATIONAL INJURY DATA.** **Auston Locke,** Niklas Koehne[1], Matthew Ramey[2], Austin Alley[3], Avanish Yendluri[1], Nikan Namiri[4], Junho Song[4], Osemwengie Enabulele[5], Brian Waterman[6], Xinning Li[7], Robert Parisien[4]. [1]Medical Education, [2]Public Health, [3,4,5,6,7]Orthopaedics. [1,4]Icahn School of Medicine at Mount Sinai, New York, New York, [2]Columbia Irving Medical Center, [3]Brown University, [5]Tufts University, [6]Wake Forest University, [2]Public Health [7]Boston University.
69	**NATIONAL TRENDS IN THE USE OF REGIONAL ANESTHESIA IN HYSTERECTOMIES FOR GYNECOLOGIC CANCER.** **Anais Marenco,** Ryan Kahn[1], Patrick McCormick[2]. [1]Surgery, [2]Anesthesiology & Critical Care Medicine. [1,2]Memorial Sloan Kettering Cancer Center, New York, New York.
70	**A MIXED METHODS STUDY OF WOMEN'S ATTITUDES AND KNOWLEDGE AROUND MENTAL HEALTH IN RURAL VADODARA DISTRICT, INDIA AND EVALUATION OF THE IMPACT OF MINDS EDUCATIONAL SESSIONS.** **Anna Martens,** Keerthana Reddy Bydreddy[1], Amul Joshi[2], Craig Katz[3]. [1]Epidemiology Global Health, [2]Mental Health, [3]Psychiatry. [1,3]Icahn School of Medicine at Mount Sinai, New York, New York, [2]MINDS Foundation.

71	**EXPLORING REFERRALS AND RESOURCE ENGAGEMENT WITHIN A FOOD INSECURITY SCREENING PROGRAM AT A PEDIATRIC CLINIC IN EAST HARLEM, NYC.** **Phoebe May,** Likhitha Patlolla[1], Lauren Zajac[2], Jennifer Acevedo[2], Shachi Mistry[3], Chris Gennings[3], Leora Mogilner[2]. [1]Medical Education, [2]Pediatrics, [3]Biostatistics. [1,2,3]Icahn School of Medicine at Mount Sinai, New York, New York.
72	**THE INFLUENCE OF ACCESS TO CARE ON RADIATION THERAPY UTILIZATION AMONG OLDER WOMEN WITH BREAST CANCER.** **Jane MeLampy,** Chen Mu-Hsun[1], Madhu Mazumdar[1], Paula Klein[2], Andrea Marcadis[3], Jennifer Marti[4]. [1]Population Health Science and Policy, [2]Medicine, [3,4]Surgery. [1,2,4]Icahn School of Medicine at Mount Sinai, New York, New York, [3]Memorial Sloan Kettering Cancer Center, New York, New York.
73	**INFLUENCE OF CERVICAL LEVEL FUSED ON SUBSIDENCE OF CAGE AND ALLOGRAPH IN ANTERIOR CERVICAL DISCECTOMY AND FUSION.** **Zachary Milestone,** Akiro Duey[1], Wasil Ahmed[1], Christopher Gonzalez[1], Jiwoo Park[1], Lathan Liou[1], Pierce Ferriter[1], Jonathan Markowitz[1], jun Kim[2], Samuel Cho[2]. [1]Medical Education, [2]Orthopaedics. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.
74	**COMORBIDITY ASSOCIATIONS IN PATIENTS WITH SJÖGREN'S SYNDROME: A CROSS-SECTIONAL STUDY OF THE ALL OF US DATABASE.** **Sreekar Miriyala,** Isabel Silva[1], Saakshi Khattri[1]. [1]Dermatology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
75	**ABORTION OPTIONS FOLLOWING FLORIDA'S 6-WEEK BAN: A WEBSITE CONTENT ANALYSIS OF US ABORTION PROVIDERS.** **Matthew Miyasaka,** Julia Miyasaka[1], Tristan Tran[2], Sarah Gross[3], Adam Jacobs[3]. [1]Statistics, [2]Biology, [3]Obstetrics, Gynecology, and Reproductive Science. [1]Cornell University Ithaca, NY, [2]Cornell College, [3]Icahn School of Medicine at Mount Sinai, New York, New York.

76	**COMMERCIALIZATION STRATEGIES FOR EARLY-STAGE MEDICAL DEVICE STARTUPS: PATHWAYS TO MARKET ENTRY.** **Lillian Mo,** James Hu[1]. [1]Illuminant Surgical. [1]Illuminant Surgical, Culver City, California.
77	**AN ASSESSMENT OF THE UNDERSTANDING AND FEARS OF PATIENTS UNDERGOING UPPER AND LOWER ENDOSCOPIES IN RURAL UGANDA.** **Abhishek Mogili,** Daniel Mukisa[1], Angellica Giibwa[1], Moses Binoga[1], Peter Campbell[2], Arthur Emoru[1], Anna Kalumunna[1], Joseph Okello Damoi[1], Chelsia Melendez[2], Katie Glerum[3], Linda Zhang[4]. [1,3,4]Surgery, [2]Medical Education, [1]Kyabirwa Surgical Center Jinja, Uganda, [2,3,4]Icahn School of Medicine at Mount Sinai, New York, New York.
78*	**IMPACT OF SOCIAL DEPRIVATION AND DUAL ELIGIBILITY ON POSTOPERATIVE OUTCOMES IN PATIENTS 65 AND OLDER UNDERGOING SHOULDER ARTHROPLASTY.** **Kareem Mohamed,** Christoph Schroen[1], Gace Van Hyfte[2], Brocha Stern[2], Paul Cagle[1].[1]Orthopaedics, [2]Population Health Science and Policy. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.
79	**HOW BEST TO TREAT MEDIUM SIZED VESTIBULAR SCHWANNOMAS: RADIOSURGERY VERSUS SURGICAL RESECTION FOR 2 TO 2.5CM TUMORS.** **Emery Monnig,** Alex Devarajan[1], Yehia Elkersh[1], Megan Tang[1], Rui Feng[1], Raj Shrivastava[1]. [1]Neurosurgery. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
80	**IMPLEMENTING VALUE-BASED CARE IN FEDERALLY QUALIFIED HEALTH CENTERS: CHALLENGES, BEST PRACTICES, AND POLICY RECOMMENDATIONS.** **Salwa Najmi,** Cassie Parks[1]. [1]Care Management. [1]Yuvo Health, New York, New York.

81	**EXAMINING PROVIDER LEVEL DIFFERENCES IN LABOR LENGTH AMONGST AN NTSV COHORT.** **Hajer Naveed,** Nicola Tavella[1], Katherine Larratt[1], Christina Lefebvre[1], Gabriele Baptiste[1], Donessa Colley[1], Desmond Sutton[1], Angela Bianco[1], Toni Stern[1], Joanne Stone[1]. [1]Obstetrics, Gynecology, and Reproductive Science. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
82	**DO LEG-FOCUSED EXERCISES IMPROVE ARM AND HAND FUNCTION FOR INDIVIDUALS WITH NEUROLOGICAL DISORDERS? A SCOPING REVIEW.** **Katrina Nietsch,** Lauren Kinne[1], Gloria Willson[2], Noam Harel[3], Lynda Murray[3]. [1]Spinal Cord Damage Research Center, [2]Levy Library, [3]Neurology. [1]James J. Peters VA Medical Center, Bronx, New York, [2,3]Icahn School of Medicine at Mount Sinai, New York, New York.
83	**STRICTURE CLASSIFICATION OF PEDIATRIC ESOPHAGEAL STRICTURES (SCOPES): THE USE OF A NOVEL STRICTURE CLASSIFICATION SYSTEM TO PREDICT RESPONSE TO ENDOSCOPIC THERAPY.** **Brandon Oby,** Steven Staffa[1], Peter Ngo[2], Denis Chang[2], Michael Manfredi[2], Jessica Yasuda[2]. [1]Anesthesiology, [2]Pediatric Gastroenterology. [1,2]Boston Children's Hospital, Boston, Massachusetts.
84	**EXAMINING THE RELATIONSHIP BETWEEN CUMULATIVE RADIOTHERAPY DOSE TO THE NIPPLE-AREOLAR COMPLEX AND BREAST SENSORISEXUAL FUNCTION.** **Amarachi Okorom,** Thodori Kapouranis[1], Victoria Olsen[2], Andre Williams[2], Sheryl Green[2], Jezelle Lynch[2], Daniel Dickstein[2], Deborah Marshall[2]. [1]Population Health Science and Policy, [2]Radiation Oncology. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.
85	**DESIGNING AN INCLUSIVE ENROLLMENT PROCESS FOR AN IMMIGRANT COMMUNITY HEALTH PROGRAM.** **Boluwatito Oladeinde,** Roger Bautista[1], Payal Ram[2], Carlos Salama[2]. [1]Medical Education, [2]Global Health and Health System Design, [3]Infectious Diseases. [1,2,3]Icahn School of Medicine at Mount Sinai, New York, New York.

86	**A QUALITATIVE ANALYSIS OF THE BARRIERS TO AND FACILITATORS OF ACCESSING IMMUNOTHERAPY FOR TRIPLE NEGATIVE BREAST CANCER FROM THE PERSPECTIVE OF SURGICAL ONCOLOGISTS.** **Melissa Olivar-Villanueva,** Yara Abbo[1], Adriana Espinosa[2], Tiffany Traina[1], Bert Petersen[3], Francesca Gany[1], Devika Jutagir[1]. [1]Psychiatry and Behavioral Sciences, [2]Psychology, [3]Breast Surgery. [1]Memorial Sloan Kettering Cancer Center, New York, New York, [2]The City College of New York, New York, NY, [3]St. Barnabas Hospital, New York, New York.
87	**CREATING A SAFER AND MORE INCLUSIVE MOUNT SINAI FOR PEOPLE WHO USE DRUGS.** **Cameron Ormiston,** Michael Herscher[1], Linda Wang[1]. [1]Medicine. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
88	**PREDICTION AND EFFECT OF ELEVATED INTRAOPERATIVE MEAN PULMONARY ARTERIAL PRESSURE DURING LIVER TRANSPLANT.** **Sananda Pai,** Saher Siddiqui[1], Ryan Wang[2]. [1]Medical Education, [2]Anesthesiology. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.
89	**HEMATOPOIETIC AGING PROMOTES LUNG CANCER BY FUELING IL-1A-DRIVEN EMERGENCY MYELOPOIESIS.** **Matthew Park,** Miriam Merad[1]. [1]Immunology and Immunotherapy. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
90	**EXAMINING ATTITUDES TOWARDS IMPLEMENTING ULTRASOUND EDUCATION ACROSS TRAINING STAGE AND SPECIALTY.** **Nicole Parkas,** Jamie Frost[1], Bethany Dubois[1], Nicola Tavella[2], Richard Stern[3], Reena Karani[4], Chelsea Debolt[2]. [1]Medica Education, [2]Obstetrics, Gynecology, and Reproductive Science, [3]Radiology, [4]Geriatrics and Palliative Medicine. [1,2,3,4]Icahn School of Medicine at Mount Sinai, New York, New York.

91	**CROSS SECTIONAL ANALYSIS OF HIDRADENITIS SUPPURATIVA PATIENTS IDENTIFIES INCREASED RISK OF CARDIOVASCULAR DISEASE WITH RISK REDUCTION WITH BIOLOGIC THERAPY.** **Dev Patel,** Kristina Navrazhina[1], Daniel Liu[1], Megan Lau[1], Joseph Largen[1], Kevin Paul[1], Mahaa Ayub[2], James Krueger[1], Emma Guttman-Yassky[1]. [1,2]Dermatology. [1]Icahn School of Medicine at Mount Sinai, New York, New York, [2]Thomas Jefferson University, Philadelphia, Pennsylvania.
92	**IMAGING BIAS IN CONGENITAL HEART DISEASE: SEGMENTAL LOCALIZATION ANALYSIS OF DISCREPANCIES BETWEEN CARDIAC CT AND CMR.** **Nikhil Patel,** Son Duong[1].[1]Pediatric Cardiology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
93	**MAPPING ENVIRONMENTAL EXPOSURES IN NEW YORK CITY.** **Likhitha Patlolla,** Kholiswa Tsotetsi[1], Alison Lee[2].[1]Infectious Disease, [2]Pulmonary, Critical Care and Sleep Medicine. [1]Rutgers University - New Jersey Medical School, Newark, New Jersey, [2]Icahn School of Medicine at Mount Sinai, New York, New York.
94	**DEMOGRAPHIC ANALYSIS OF HOSPITAL AT HOME.** **Madeline Penn,** Tuyet-Trinh Truong[1]. [1]Medicine. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
95	**EVALUATING THE EFFECTIVENESS AND STRUCTURE OF THE LIVING WITH LOSS SERIES: A PROGRAM EVALUATION.** **Joan Perez,** Mary Rojas[1]. [1]Medical Education. [1]Icahn School of Medicine at Mount Sinai, New York, New York.

96	**MAPPING GLUT2 AND PDX1 REGULATION IN PANCREATIC BETA CELLS BY HARMINE RESPONSIVE ELEMENTS.** **Aidan Pillard,** Peng Wang[1], Esra Karakose[1], Andrew Stewart[1]. [1]Medicine. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
97	**CD4+, CD8+ TCR-GD+ CUTANEOUS T-CELL LYMPHOMAS SHOW DISTINCT BIOMARKER PROFILES IN SINGLE-CELL ANALYSES.** **Lauren Port,** Sumanth Chennareddy[1], Emry R. Cohenour[2], Shannon Meledathu[3], Malini P Naidu[4] Patrick Brunner[5]. [1,3]Medical Education, [2,4,5]Dermatology. [1,2,3]Icahn School of Medicine at Mount Sinai, New York, New York.
98	**CHARACTERIZATION OF CEREBRAL ATROPHY IN PATIENTS UNDERGOING MINIMALLY INVASIVE ICH EVACUATION.** **Akhil Rao,** Christopher Kellner[1]. [1]Neurosurgery. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
99	**CONTINUOUS TIME NEURAL ORDINARY DIFFERENTIAL EQUATION PREDICTS RNFL PROGRESSION IN PRIMARY OPEN ANGLE GLAUCOMA PATIENTS.** **Nicholas Riina,** Brent Siesky[1], Alice Verticchio[1], Giovanna Guidoboni[2], Riccardo Sacco[1], Alon Harris[1]. [1]Ophthalmology, [2]Mathematics. [1]Icahn School of Medicine at Mount Sinai, New York, New York, [2]University of Maine.
100	**EVALUATING THE 2023 EUROPEAN ASSOCIATION OF THE LIVER'S GUIDELINES FOR INTRAHEPATIC CHOLESTASIS OF PREGNANCY: RISK STRATIFICATION AND OUTCOMES IN 4,000+ U.S. PATIENTS.** **Nina Rodriguez,** Cecilia Katzenstein[1], Rhoda Sperling[2], Keith Sigel[3], Tatyana Kushner[4]. [1]Medical Education, [2]Obstetrics, Gynecology, and Reproductive Science, [3]Medicine, [4]Gastroenterology and Hepatology. [1,2,3]Icahn School of Medicine at Mount Sinai, New York, New York, [4]Weill Cornell Medicine, New York, New York.

101	**EVALUATING HOSPITAL STAFF PERCEPTIONS OF COMMUNITY-BASED DOULA CARE: A MIXED-METHODS STUDY ON BIRTH OUTCOMES AND PROGRAM INTEGRATION.** **Rebecca Rosenzweig,** Alva Rodriguez[1], Caroline Cooke[2], Naphtali Calliste[3], Sheela Maru[4]. [1]Global Health & Health System Design, [2]Population Health Science and Policy, [3]Maternal Home Program, [4]Obstetrics, Gynecology, and Reproductive Science. [1]Arnhold Institute for Global Health, [2,3]NYC Health + Hospitals, [4]Icahn School of Medicine at Mount Sinai, New York, New York.
102	**ASSOCIATIONS BETWEEN PREHABILITATION AND POSTOPERATIVE HEALTHCARE UTILIZATION FOR TOTAL HIP OR TOTAL KNEE ARTHROPLASTY IN MEDICARE BENEFICIARIES.** **Graham Sabo,** Brocha Stern[1], Uma Balachandran[2], Rachelle Agranoff[3], Brett Hayden[1], Jashvant Poeran[1], Calin Moucha[1]. [1]Orthopaedics, [2]Medical Education, [3]Rehabilitation Medicine. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York, [3]The Mount Sinai Hospital.
103	**PATIENT CHARACTERISTICS ASSOCIATED WITH SPINAL CORD STIMULATOR SUCCESS.** **Lev Sandler,** Amir Taree[1], Chinwe Nwaneshiudu[1]. [1]Anesthesiology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
104	**THE IMPACT OF AN IMMEDIATE DIEP FLAP COMBINED WITH A SYMMETRIZING PROCEDURE ON COMPLICATION RATES, REVISION PROCEDURES AND TOTAL LENGTH OF RECONSTRUCTION.** **Reanna Shah,** Ethan Fung[1], Keisha Montalmant[1], Bernice Yu[1], Peter Henderson[1]. [1]Plastic and Reconstructive Surgery. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
105	**DIETARY INTAKE OF VITAMIN C AND PRESENCE OF *H. PYLORI*: A POOLED ANALYSIS WITHIN THE STOMACH CANCER POOLING (STOP) PROJECT.** **Veer Shah,** Karan Shah[1], Darshi Shah[2], Michele Sassano[3], Paolo Boffetta[4]. [1]Bioengineering, [2]Medical Education, [3]Medical and Surgical Sciences, [4]Global Oncology. [1]University of Pennsylvania, Philadelphia, Pennsylvania, [2]Renaissance School of Medicine at Stony Brook University, Stony Brook, New York, [3]University of Bologna, Bologna, Italy, [4]Icahn School of Medicine at Mount Sinai, New York, New York.

106	**EXPLORING THE PRELIMINARY EFFECTIVENESS OF A CASH TRANSFER TO STREET-CONNECTED YOUNG WOMEN TO INCREASE HOUSING STABILITY IN WESTERN KENYA.** **Lucy Shang,** Ashley Chory[1], Reuben Kiptui[1], Sheila Kirwa[1], Becky Genberg[2], Lonnie Embleton[1]. [1]Arnhold Institute for Global Health, [2]Epidemiology. [1]Icahn School of Medicine at Mount Sinai, New York, New York, [2]Bloomberg School of Public Health, Division of Infectious Diseases Epidemiology, Baltimore, Maryland.
107	**LAND ELEVATION AND THYROID CANCER IN U.S. METROPOLITAN STATISTICAL AREAS.** **Shiven Sharma,** Mathilda Monaghan[1], Maaike van Gerwen[1]. [1]Otolaryngology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
108	**INFLAMMATION AND CONTRAST-ASSOCIATED ACUTE KIDNEY INJURY IN PATIENTS UNDERGOING PERCUTANEOUS CORONARY INTERVENTION.** **Mark Shneyderman,** George Dangas[1]. [1]Cardiology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
109	**SCOPING THE FIRST AID KNOWLEDGE OF U.S. MEDICAL STUDENTS.** **Elise Solazzo,** Christopher Strother[1]. [1]Emergency Medicine. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
*110**	**SYSTEMIC RISK FACTORS FOR INFECTIOUS KERATITIS.** **Arvind Sommi,** Sumayya Ahmad[1]. [1]Ophthalmology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.

111	**PREDICTIVE VALUE OF CIRCULATING TUMOR HPV DNA KINETICS IN INDUCTION THERAPY FOR HEAD AND NECK SQUAMOUS CELL CARCINOMA.** **Megan Tang,** Max Dougherty[1], Leslie Worona[1], Emily Ramos[1], Marshall Posner[1], Scott Roof[2], Richard Bakst[3], Kunal Sindhu[3], Krzysztof Misiukiewicz[1]. [1]Oncological Sciences, [2]Otolaryngology, [3]Radiation Oncology. [1,2,3]Icahn School of Medicine at Mount Sinai, New York, New York.
112	**THE CORRELATION OF REFLECTANCE CONFOCAL MICROSCOPY WITH DERMOSCOPIC PATTERNS IN PATHOLOGICALLY CONFIRMED SPITZ NEVI: A DESCRIPTIVE STUDY OF 41 LESIONS.** **Marianne Tissot Rodriguez,** Francesca Farnetani[1], Silvana Ciardo[1], Jonida Bardhushi[1], Alessandra Acciardi[1], Antonio Alma[1], Jónas Adalsteinsson[2], Nicholas Gulati[2]. [1,2]Dermatology. [1]University of Modena and Reggio Emilia, Modena, Italy, [2]Icahn School of Medicine at Mount Sinai, New York, New York.
113	**ESTABLISHING ENVIRONMENTAL SUSTAINABILITY IN A RESOURCE-LIMITED SETTING: THE INNOVATIVE DESIGN OF KYABIRWA SURGICAL CENTER, AN AMBULATORY SURGERY FACILITY IN RURAL, EASTERN UGANDA.** **Grace Travers,** Saul Kibirango[1], Anna Kalumuna[1], Winfred Nannozi[1], Ronard Tusiime[1], Joseph Damoi[1], Angellica Giibwa[1], Reetwan Bandyopadhyay[2], George George[3], Michael Marin[1], Linda Zhang[1]. [1,2]Surgery, [3]Architecture. [1,2]Kyabirwa Surgical Center, Jinja, Uganda, [2]Icahn School of Medicine at Mount Sinai, New York, New York, [3]GKG Architecture, New York, New York.
114	**TRENDS IN HEALTH CARE ACCESS AND OUTCOME FOR PATIENTS WITH GLIOBLASTOMA OVER A DECADE.** **Ruben Vega Perez,** Nina Bickell[1], Lynne Richardson[2], Isabelle Germano[3]. [1]Population Health Science and Policy, [2]Emergency Medicine, [3]Neurosurgery. [1,2,3]Icahn School of Medicine at Mount Sinai, New York, New York.
115	**DISEASE PROGRESSION OF MASH-HCC FOLLOWING MANNOSE SUPPLEMENTATION.** **Camila Vicioso,** Charles DeRossi[1], Bruno Cogliati[2], Scott Friedman[2], Jaime Chu[1]. [1]Pediatrics, [2]Medicine. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.

116	**GUN VIOLENCE AND THE VOICES OF THE YOUTH ON COMMUNITY SAFETY IN THE TIME OF COVID-19 IN EAST HARLEM, NY: A YOUTH PARTICIPATORY ACTION RESEARCH CROSS-SECTIONAL STUDY.** **Jacqueline Wallace**, Rachel Chernet[1], Margaret Formika[1], Olusola Adeonigbagbe[2], Roseanne Flores[3], Robert Marchesani[4], Danielle Goldberg[5], Pamela Wridt[6], Danielle Laraque-Arena[7]. [1,2,5,6]Population Health Science and Policy, [3]Psychiatry, [4]Student Counseling, [7]Preventive Medicine. [1]SUNY Upstate Medical University, Syracuse, New York, [2,3]Hunter College CUNY, New York, New York, [4]Counseling In Schools Based at the Heritage School, New York, New York, [5]UNICEF USA, New York, New York, [6]Conscious Data Inc., Brooklyn, New York, [7]New York Academy of Medicine, New York, New York, Mailman School of Public Health and Vagelos College of Physicians and Surgeons, Columbia University, New York, New York.
117	**HEMOGLOBIN DECREMENTS ARE ASSOCIATED WITH ISCHEMIC LESIONS AND POOR FUNCTIONAL OUTCOMES IN PATIENTS WITH INTRACEREBRAL HEMORRHAGE.** **Emma White,** Christina Rossitto[1], Zachary Weiner[1], J Mocco[1], Christopher Kellner[1], Fernanda Carvalho Poyraz[1]. [1]Neurosurgery. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
118	**NOVEL PER- AND POLYFLUOROALKYL SUBSTANCES ASSOCIATED WITH THYROID CANCER.** **Jessica Yang,** Haibin Guan[1], Maaike van Gerwen[2], Biban Gill[1], Lauren Petrick[1]. [1]Environmental Medicine and Climate Sciences, [2]Otolaryngology. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.
119	**HEALTH RELATED SOCIAL RISK FACTORS ARE ASSOCIATED WITH LOWER SELF-REPORTED QUALITY OF LIFE IN PATIENTS ON HEMODIALYSIS.** **Hailey Yetman,** Lili Chan[1]. [1]Nephrology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
120	**EVALUATING ORTHOPEDIC DISEASE RISK IN ELDERLY POPULATIONS THROUGH SLEEP PATTERNS: INSIGHTS FROM WEARABLE DATA IN THE ALL OF US RESEARCH PROGRAM.** **Jennifer Yu,** Brett Hayden[1]. [1]Orthopaedics. [1]Icahn School of Medicine at Mount Sinai, New York, New York.

121	**PROSTATE CANCER CHARACTERISTICS AND OUTCOMES FOR MEDICARE RECIPEINTS WITH AND WITHOUT HIV.** **Ryan Yu,** Keith Sigel[1]. [1]Medicine. [1]Icahn School of Medicine at Mount Sinai, New York, New York.
122	**CO-DESIGNING A DIGITAL PATIENT EMPOWERMENT TOOL TO IMPROVE ENDOMETRIOSIS AND FIBROIDS CARE: INSIGHTS FROM PATIENTS AND PHYSICIANS.** **Helena Zeleke,** Michelle Ng[1]. [1]Product Design. [1]Neuemoon Health, New York, NY.
*123**	**MEASUREMENT OF GLOBAL SAGITTAL ALIGNMENT PARAMETERS IN PATIENTS WITH SPINE FUSION USING EOS FULL-BODY X-RAYS.** **Alexander Yu,** Samuel Cho[1]. [1]Orthopaedics. [1]Icahn School of Medicine at Mount Sinai, New York, New York.

SECTION 2:

Abstracts

Note: Abstracts with astericks (*) are MSTAR abstracts that were presented in MSTAR Research Day on September 17, 2024.

ABSTRACT 1

AXIAL CHEST WALL SLOPE IN HEALTHY FEMALES: QUANTIFYING INHERENT SKELETAL ASYMMETRY.

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Background: Breast asymmetry is an established concern in both aesthetic and reconstructive surgery, with a primary focus on soft tissue differences. Embryologically, the heart forms early in fetal development, requiring the left chest wall to extend farther during endochondral ossification of the ribs. Therefore, we hypothesize that asymmetry in the adult chest can be attributed to inherent skeletal differences. This study aims to quantify this chest wall asymmetry, proposing that the right chest has a steeper slope in the axial plane.

Methods: A total of 50 female patients 18-45 years old with a BMI of 20-25 were randomly selected from a large database. Patients were excluded if they had a history of scoliosis, pectus carinatum or excavatum, congenital deformities, chest wall or rib trauma, or breast cancer, reconstruction, or implants. Image processing of CT scans was performed using Simpleware™ software (Version 2024.06; Synopsys, Inc., Sunnyvale, USA). The left and right chest wall were segmented at the level where the fourth rib inserts into the sternum, excluding any overlying musculature. The centerline coordinates were transformed to a common cartesian plane with the median sternum set to (0,0). Chi –Squared analysis was used to compare the mean y-value at standardized x-values with a significance level set to 0.05.

Results: The right and left chest walls have significantly different slopes over their respective course (n=50, p = <0.001). From the origin of the sternum moving laterally, the curves differed significantly from 1 to 5 cm, with the mean left chest curve being more positive over a greater distance. There was a difference of 0.46mm at 1cm (p=0.048), 1.55mm at 2cm (p < 0.001), 1.95 mm at 3cm (p = 0.001), 1.84 mm at 4cm (p = 0.017), and 1.98 mm at 5cm (p=0.036). Once the cardiac silhouette ends within the left chest, around 5cm from the sternum, the curves from 6 to 10cm were not significantly different.

Discussion: In this cohort of healthy females, the right rib cage has a significantly steeper slope in the axial. We posit that the presence of the heart and subsequent rib ossification during embryological development may explain this difference as the slopes were statistically significant until the left lateral border of the heart. In both aesthetic and reconstructive surgery, an understanding of these inherent skeletal asymmetries will allow surgeons to appropriately adjust their practice and patient expectations.

ABSTRACT 2*

MINIMALLY INVASIVE SURGICAL (MIS) EVACUATION FOR INTRACEREBRAL HEMORRHAGE (ICH): FRAILTY MATTERS.

Ryan Afreen, Akhil Rao[1], Bahie Ezzat[1], Christopher Kellner[2], Neha Dangayach[3].
[1]Medical Education, [2]Neurosurgery, [3]Neurology. [1,2,3]Icahn School of Medicine at Mount Sinai, New York, New York.

Introduction: Frailty may contribute to variability in clinical outcomes of patients with intracerebral hemorrhage (ICH). The Modified Frailty Index (mFI-11) assesses functional status and is a reliable predictor of adverse outcomes in geriatric patients. While frailty is a well-recognized construct in geriatrics, the role of frailty in younger populations and in ICH patients is understudied. Furthermore, minimally invasive surgical (MIS) evacuation is a new promising treatment for ICH. This study aims to evaluate the role of frailty in ICH patients undergoing minimally invasive surgery (MIS) and compare outcomes between high-risk and low-risk frailty groups, hypothesizing that the mFI-11 could predict functional outcomes in both young and older patients.

Methods: In this IRB approved study, retrospective chart review was conducted to include all ICH patients who were admitted to an ICH focused hospital in a large urban health system and underwent MIS for ICH evacuation between 2016 and 2021. Baseline characteristics, operative details, and clinical outcome were collected, and frailty scores (0-1) was calculated using the mFI-11 index. Patients were classified with high-risk frailty if the frailty score ≥ 0.27. Univariate analysis was performed using Welch Two Sample t-test, Pearson's Chi-squared test, and Fisher's exact test ($p < 0.05$).

Results: Of the 226 patients, 108 geriatric patients had a mean age of 75.4, while the mean age of non-geriatric population was 51.2. Among the geriatric population, 64.08% experienced a lobar ICH, 67.59% had a premorbid mRS of 0, 77.19% had hypertension (HTN), and 42.06% were classified as high-risk frailty, and 39.60% were discharged to acute rehab. Among the 84 patients who were categorized under high-risk frailty, 53.57% were geriatric, 30.12% were females, 65.48% had diabetes mellitus, 41.67% experienced congestive heart failure, 96.43% had HTN, 36.90% experienced transient ischemic attack or cerebrovascular accident, and 19.05% experienced myocardial infarction, with an mFI-11 score of 36.40. Comparing outcomes in high-risk frailty patients versus low-risk frailty patients, 46.1% v 56.1% were discharged to acute rehab ($p=0.028$) and patient mortality was 3.8% versus 7.3% ($p=0.028$), respectively.

Conclusion: Frailty as measured by the mFI-11 can serve as an important predictor of outcomes among ICH patients undergoing MIS.

ABSTRACT 3

THE INCIDENCE AND IMPACT OF INVASIVE MELANOMA SUBTYPES IN ICELAND 1955-2023.

Omar Alani, Areeba Ahmed[1], Eydis Lilja[2], David Hoyt[3], Sierra Thomas[4], Austin J. Piontkowski[5], Jonathan Ungar[5], Arni Kjalar Kristjansson[6], Jon Gunnlaugur Jonasson[7], Nicholas Gulati[5], Jónas Adalsteinsson[5].

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Introduction: Melanoma is an aggressive skin cancer with rising global incidence. While trends in invasive subtypes have been explored in some regions, no nationwide studies have documented them. This study examines incidence trends of most common subtypes in Iceland from 1955 to 2023, which include superficial spreading melanoma (SSM), nodular melanoma (NM), acral lentiginous melanoma (ALM), and lentigo maligna melanoma (LMM). Iceland's high latitude results in minimal UV exposure, making it an optimal setting for studying these trends, along with the Icelandic Cancer Registry (ICR) which offers comprehensive follow-up data, including pathologically confirmed melanoma cases.

Methods: Data from Icelandic Cancer Registry (ICR) were used to identify initial diagnoses, subtypes were classified using ICD-O-3 Morphology Codes, based on pathology subtype assigned at initial diagnosis by a pathologist, ensuring histologic confirmation. Sex-age-standardized incidence rates per 100,000 person-years were calculated, and Joinpoint regression analysis determined trends and annual percent changes (APC).

Results: 747 invasive melanomas were in men (41%) and 1,075 in women (59%). SSM incidence peaked at 6.15 in men (2007-2011) and 9.36 in women (1999-2003), followed by a decline. NM peaked at 1.53 in men (2001-2005) and 1.77 in women (1991-1995), with a recent increase in men (2016-2023, APC 12.03%). LMM peaked at 1.11 (2002-2004) and ALM at 0.63 (1986-1990). Breslow thickness for SSM had median of 0.80 mm (men) and 0.60 mm (women) ($p<0.001$), while for NM the medians were 2.65 mm (men) and 2.60 mm (women).

Conclusions: This study found that SSM rose significantly among women, driven potentially by sunbed use; NM showed increasing rates among men; LMM remained stable, and ALM exhibited low but stable rates. Iceland’s melanoma trends largely mirror global patterns, yet it shows a higher ratio of SSM to LMM and a rising incidence of NM in men compared to regions like the US and Europe. Given the distinct biological and prognostic differences among melanoma subtypes, accurate subtyping is crucial for guiding effective prevention and management.

ABSTRACT 4

MACHINE LEARNING-BASED SCREENING FOR SHORT-TERM MORTALITY IN ICELANDIC SKIN CANCER PATIENTS: A NATIONWIDE RETROSPECTIVE COHORT ANALYSIS.

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Background: Early detection and risk stratification remain key challenges in skin cancer mortality. Recent advances in machine learning (ML) have led to success in predicting cancer mortality, including melanoma and Merkel cell carcinoma. Our research aims to similarly develop a model to screen for 5-year mortality in Icelandic patients with skin cancer.

Objective: To develop a machine learning model that predicts 5-year mortality in Icelandic skin cancer patients using nationwide registry data, and to assess how patient demographics, tumor characteristics, and family history influence mortality risk stratification to improve early detection and clinical decision-making.

Methods: The Icelandic Cancer Registry, a nationwide comprehensive database with no loss to follow-up given its design, was used to identify all patients with cutaneous malignancies according to ICD-O-3 codes (n=18300, 1949-2023). An XGBoost-based ML model was developed to predict 5-year mortality in our cohort. The dataset included patient demographics, tumor characteristics, and family history. Preprocessing involved imputation, normalization, and one-hot encoding. A 50:50 class-weighted approach for class imbalance, 4:1 train-test ratio, hyperparameter tuning using grid search, and 5-fold cross-validation were utilized.

Results & Discussion: The ML model achieved an overall accuracy of 98.4% with a ROC-AUC of 0.984. For the majority class (low-risk cases), the precision, recall, and F1 scores were 99.9%, 98.5%, and 99.2%, respectively. Performance for the mortality class yielded a precision of 26.4%, recall of 82.6%, and F1-score of 40%. The balanced accuracy was 90.6%, and specificity reached 98.6%. Feature importance analysis identified Breslow thickness as the most significant predictor, followed by tumor subtype and staging variables. Loss curves showed the absence of overfitting for strong generalization across datasets

The ML model showed excellent discriminatory ability in predicting mortality. To maintain a high recall, lower precision was justified by the low-harm clinical action of recommending increased screening for flagged patients. With minimal cost or risk, the screening tool could utilize health record data to save lives with earlier interventions for high-risk cases and ensure fewer patients with skin cancer go undetected.

ABSTRACT 5

PALLIATIVE CARE NEEDS FOR PATIENTS WITH ADVANCED HEPATOCELLULAR CARCINOMA WHO REPORT THE HIGHEST AND LOWEST QUALITY OF LIFE.

Noy Alon, Deborah watman[1], Crystal Chen[1], Meng Wu[2], Sasha Perez[1], Christopher Woodrell[1]. [1]Geriatrics and Palliative Medicine, [2]Oncological Sciences. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.

Background: Hepatocellular carcinoma (HCC) has a high mortality. Patients present with complex care coordination as treatment plans must not only manage the carcinoma, but also chronic liver conditions that are often concurrent. Palliative care, defined as specialized interdisciplinary care focusing on improving the quality of life for people with serious illness and their families, has been shown to benefit other oncological populations and potentially address the challenges faced by HCC patients. However, palliative care is understudied in HCC. Thus, there is little known about how palliative care can be applied most appropriately to the care of these patients.

Objective: Our research objective aimed to understand the disease course of patients with HCC reporting various quality of life scores to better identify how palliative care can be implemented into the care of these patients.

Methods: We conducted a cross-sectional, multi-method study. Both patients and informal caregivers were recruited and completed study procedures at baseline and one month follow-up. Quantitative data included the Functional Assessment of Cancer Therapy – Hepatobiliary (FACT-HEP) scale. Qualitative data included semi-structured interviews of patients and/or caregivers. All patients were currently receiving systemic therapy for advanced HCC. FACT-HEP scores were used to dichotomize participants: low quality of life was defined as a FACT-HEP score below the median and high quality of life was defined as a FACT-HEP score above the median. Interviews were analyzed using Constructivist Grounded Theory.

Results: 22 patients (Mean age= 66.5) and 9 caregivers completed the study. FACT-HEP scores averaged 129.2 (SD= 27.7) at baseline and 135.2 (31.9) at follow-up suggesting an overall high quality of life. 16 interviews were analyzed. When comparing the narratives of patients with high versus low quality of life, five themes were identified: (1) a long road, (2) uncertainty about future, (3) uncertainty from healthcare system, (4) reverence of healthcare teams, and (5) sufficient social support.

Conclusions: Our results suggest that interventions focused on care coordination and communication, such as palliative care, can potentially alleviate some of the challenges of those with severe presentations. Future research elucidating elements of efficacious palliative care for those with advanced HCC is warranted.

ABSTRACT 6*

ASSOCIATION BETWEEN RADIOACTIVE IODINE TREATMENT FOR DIFFERENTIATED THYROID CANCER AND SECOND PRIMARY MALIGNANCIES AMONG GERIATRIC PATIENTS.

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Background: Radioactive iodine (RAI) is commonly given after thyroidectomy to treat high-risk differentiated thyroid cancer (DTC) but is less frequently prescribed for geriatric patients for unclear reasons. While RAI has been linked to increased second primary malignancy (SPM) risk in the general population, this has not been studied in the geriatric population. We aimed to assess whether RAI is associated with an increased SPM risk in the geriatric population.

Methods: We identified 9,971 adults aged 65 and older diagnosed with non-metastatic DTC from eight SEER Registries (1975-2021) and stratified them into two groups by RAI receipt. Surveillance for hematological and solid SPMs began two and five years after DTC diagnosis, respectively, to account for the latency period of radiation carcinogenesis. Surveillance ended at SPM diagnosis, death, last follow-up, or December 31st, 2021, whichever occurred first. The observed and expected number of SPMs by site were used to calculate relative risks (RRs), 95% confidence intervals (CI), and the excess number of SPMs attributable to RAI using Poisson regression models using SEER*Stat and SAS (Statistical Analysis System, V9.4, Cary, NC).

Results: The overall risk of solid SPMs was increased (RR=1.88, 95% CI 1.59-2.21) while the risk of hematological SPMs was not elevated among RAI-treated geriatric patients (RR=1.35, 95% CI 0.97-1.87). Risks were significantly increased for stomach (RR=4.06, 95% CI 1.05-15.81), esophagus (RR=11.42, 95% CI 1.40-93.3), non-epithelial skin cancers (RR=10.52, 95% CI 1.09-88.77), and acute myeloid leukemia (RR=3.26, 95% CI 1.15-9.24). We estimated that 2.23 excess stomach, 2.53 esophageal, 2.31 non-epithelial skin cancers, and 3.30 acute myeloid leukemia cases per 10,000 person-years were attributable to RAI.

Conclusions: We found increased risks of acute myeloid leukemia, stomach, esophageal, and non-epithelial skin cancers following RAI in the geriatric population. However, as the risks of 30 other cancers were not elevated in geriatric patients, SPM risk should not deter RAI use in patients for whom it is clinically warranted. Notably, our previous work showed that adults aged 45-64 had significantly increased risks of prostate cancer, salivary gland cancer, and nodal non-Hodgkin lymphoma, highlighting the importance of age-specific monitoring and screening for SPMs after RAI.

ABSTRACT 7

CLINICODEMOGRAPHIC PREDICTORS OF ENROLLMENT AND OUTCOMES IN EARLY PHASE ONCOLOGY CLINICAL TRIALS IN A DIVERSE URBAN POPULATION.

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Background: Early phase clinical trials (EPCTs) evaluate the safety, toxicity, pharmacokinetics, and preliminary efficacy of novel anticancer agents. However, the underrepresentation of minoritized racial and ethnic groups hinders the generalizability of EPCTs and reflects limited access to potentially effective novel therapies. This study aims to evaluate the clinical and sociodemographic factors associated with EPCT enrollment in a diverse, urban population to inform data-driven interventions that promote equitable trial access.

Methods: A retrospective chart review of solid tumor patient (pt) referrals to the Mt. Sinai Early Phase Trials Unit between July 2018 and October 2023 was conducted. Data collected included socio-clinicodemographic factors and outcomes of referred pts who either enrolled onto a trial (T) or did not (NT). Logistic regression was used to determine predictors of T enrollment. Univariable Cox proportional hazards models were conducted to analyze factors associated with overall survival (OS) and time on T.

Results: Of 499 referrals, 27.1% (n=135) enrolled in a trial, with a median time on T of 2.14 months (95% CI: 2.07–2.79) and median OS from first dose of study therapy of 10.5 months (95% CI: 8.28-14.3). T patients had a median age of 61 and a median of 3 lines of prior therapy (range: 0-10). Histologies most frequently represented were colorectal (24.4%), gynecological (18.5%) and breast cancers (10.4%). The racial composition of T pts was 53.0% white, 14.9% Black, and 12.7% Asian. 18.6% identified as Hispanic and 14.1% did not speak English. On univariate analysis, non-white race (p=0.027), hepatopancreaticobiliary cancer (p=0.009), and ECOG performance status (PS) (p<0.001) were associated with decreased likelihood of enrolling on trial among all pts referred. In multivariate analysis, only ECOG PS remained significant (p <0.001). Ethnicity, non-English language, insurance type, median family income, and distance to treatment center were not associated with T enrollment, time on T, or OS.

Conclusion: This study demonstrates that it is feasible to enroll a diverse urban pt population onto EPCTs despite well-documented barriers to participation associated with social determinants of health. Moreover, earlier exploration of EPCTs as therapeutic options before PS deterioration affects eligibility is crucial for improving T access and expanding opportunities for underrepresented populations.

ABSTRACT 8

THE ASSOCIATION BETWEEN PROLONGED LABOR AND QUANTITATIVE BLOOD LOSS DURING POSTPARTUM HEMORRHAGE.

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Background: Maternal hemorrhage is defined as blood loss of 1,000 mL or more and is the leading cause of maternal mortality worldwide. The 4 most common etiologies of post-partum hemorrhage are uterine atony, trauma, retained placenta, and dysfunctions of coagulation. Prolonged labor is a known risk factor for postpartum hemorrhage.

Objective: To examine the association between length of labor and quantitative blood loss (QBL) in postpartum hemorrhage. Variables include duration of the second stage of labor and QBL.

Methods: This was a retrospective, institutional cohort study of patients with post-partum hemorrhage, defined at having QBL >1000 mL. The start of the second stage was defined as the time of the progress note documenting full >10 cm cervical dilation. The end of the second stage of labor was defined as the time of delivery. Prolonged labor was defined as a duration of second stage greater than 120 minutes. Patients with prolonged labor were compared with patients without prolonged labor. A 2-sample t-test was used to see if there was a significant difference in QBL between the two groups. Power analysis determined that a sample size of 51 would be required to detect a difference of 400 ml EBL.

Results/Discussion: In total, 93 patients were included in this study. There were 64 patients without prolonged labor and 29 patients with prolonged labor. The mean QBL of patients without prolonged labor was 1368.98 ± 475.88 mL whereas it was 1247.17 ± 296.91 mL in patients with prolonged labor. The difference in mean QBL was not statistically significant (P-value = .208).

Conclusion: Prolonged labor was not associated with increased QBL in patients with postpartum hemorrhage.

ABSTRACT 9

A NATIONWIDE SURVEY TO ASSESS ANTI-SEIZURE MEDICATION PRESCRIBING IN OLDER ADULTS.

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Older adults are vulnerable to the side effects of anti-seizure medications (ASMs), including sedation and cognitive impairment. Despite this, no clear guidelines exist for prescribing ASMs to older adults, particularly those with neurodegenerative or cognitive disorders. Understanding factors influencing physician decision-making in ASM prescribing is essential for optimizing patient care.

This nationwide survey examines physician prescribing behaviors for ASMs in older adults, focusing on physician knowledge, emotions, patient needs, marketing influences, and healthcare system factors. It also evaluates physician understanding of epilepsy in older adults and their diagnostic and treatment approaches. Physicians were randomly selected from a national registry, including Neurology, Internal Medicine, Emergency Medicine, Geriatrics, Family Medicine, and General Practice. Eligible participants prescribed ASMs under Medicare Part D in 2021. The survey was distributed via mail and online. Of 4,856 randomly selected physicians, 1,170 had prescribed an ASM to at least one Medicare Part D participant. Emergency Medicine had the lowest prescribing rate, with 4% (74/1,776), while Neurology had the highest at 53% (200/376). A t-test, using Neurology as the reference, showed Geriatrics was the only specialty where the null hypothesis was not rejected ($z = 0.36$); all other specialties had statistically significant differences (z-scores > 1.96). Ongoing analyses will examine prescribing behaviors, knowledge, attitudes, and practice patterns by specialty, region, and experience. Sociodemographic data will also be analyzed. This study provides insight into ASM prescribing in older adults, particularly those with cognitive impairments. Preliminary data suggest neurologists and geriatricians are the most frequent prescribers, making them key targets for interventions to improve prescribing practices. Understanding specialty-specific trends will inform strategies to enhance ASM prescribing and patient safety.

ABSTRACT 10

DEFINING AND FRAMING SOCIAL NEEDS, IN AN INTAKE FORM FOR THE MAPS PROGRAM, THAT COULD BE ADDRESSED BY COMMUNITY BASED ORGANIZATIONS TO IMPROVE HEALTH CARE OUTCOMES IN PROGRAM PARTICIPANTS.

Roger Bautista, Boluwatito Oladeinde[1], Payal Ram[2], Carlos Salama[3].
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Background: NYC Health + Hospitals/Elmhurst (Elmhurst) serves an area of nearly one million individuals, including a large number of undocumented immigrants from Latin America. Several barriers to accessing health care lead undocumented immigrants to be more likely to use ED services for non-emergent health issues. Through the MAPS program (Migrant Access to Primary Care & Social Support) Elmhurst is now collaborating with two community-based organizations (CBOs), Make the Road NY and Voces Latinas, to bridge the gap between hospitals and CBOs, which currently work independently. The CBOs have deep ties with immigrant communities in Queens and share a holistic approach to support by offering services that encompass several domains. The MAPS program aims to address the health and social needs of recently migrated, undocumented, uninsured patients in NYC in order to lower their ED readmission rates and improve health outcomes.

Objective: Design the program's intake form such that participants are only asked for information about social needs that could be actively addressed by CBOs, and frame questions such that outcomes can be measured at the end of the program.

Approach: First, we researched what social needs are most prominent in our demographic of interest and how different hospital systems measure the level of need. We visited each of the CBOs and learned about the resources they offer. Through a series of extensive conversations with the MAPS team and conducting preliminary research, we decided what social needs we could address and would lead to improved health outcomes. Those were included in the intake form. In addition, in order to show the efficacy of the MAPS program for applying for future funding or promoting similar programs across the nation, we framed these needs in a way that would provide measurable outcomes for future retrospective research.

Reflections: An obstacle we faced in the creation of the intake form was writing the questions using language that could be understood by a wider audience, avoiding the use of medical jargon for example. Through collaboration with the MAPS team we were able to work through this obstacle to create a comprehensive form.

Conclusion/Next Steps: Over the next year, the MAPS team will follow participants' ED utilization and health outcomes (e.g. HbA1C, PHQ-9) to conduct retrospective studies to analyze the program's effectiveness.

ABSTRACT 11

EFFECTS OF IMMUNOSUPPRESSANTS ON ACUTE GVHD TARGET ORGAN DAMAGE.

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[1]Oncological Sciences. [1]Icahn School of Medicine at Mount Sinai, New York, New York.

Background: Acute leukemia patients treated with allogeneic hematopoietic stem cell transplantation can develop graft-versus-host disease (GvHD), in which donor T cells release inflammatory cytokines TNFα and IFNγ to damage healthy, non-cancerous tissue. A new class of GvHD drug suppresses donor T-cell function by inhibiting its JAK-STAT intracellular signaling cascade. This cascade also mediates TNFα/IFNγ damage during GvHD. However, the ability of JAK inhibitors to protect host cells from GvHD-mediated damage remains unknown.

Methods: The intestinal environment was modeled with ileal and colonic organoids established from murine intestinal stem cells (ISCs). Organoids were treated with a solution of (1) TNFα/IFNγ and ruxolitinib (rux), a balanced JAK1/2 inhibitor; (2) TNFα/IFNγ and itacitinib (ita), a JAK1 inhibitor; or (3) TNFα/IFNγ and methylprednisolone (MP), the current standard of GvHD care. After 48 hours, organoid ATP production ("viability") was measured using the CellTiter-Glo Assay. Following identical treatment conditions, the proportion of ISCs (%ISCs) comprising ileal organoids was measured with flow cytometry. Ileal and colonic organoids were also treated with a solution of murine GvHD serum and drug, followed by viability measurement 48 hours later. Analyses were completed with t-tests ($\alpha=0.05$) comparing the average viability or %ISCs of organoids treated with TNFα/IFNγ and drug together to that of organoids treated with only TNFα/IFNγ.

Results: Both rux and ita preserved murine ileal and colonic organoid viability when cultured with TNFα/IFNγ ($p<0.001$). Both drugs also preserved the %ISCs of ileal organoids ($p<0.001$). Rux and ita preserved ileal and organoid viability when cultured with GvHD serum ($p<0.001$). However, MP did not protect ileal or colonic organoids and actually reduced the viability ($p<0.01$) and %ISCs ($p<0.001$) of ileal organoids cultured without cytokines.

Conclusion: JAK inhibitors rux & ita protected murine ileal and colonic organoids from GvHD-mediated damage. Conversely, MP, the first-line treatment of GvHD, had no protective effect and actually damaged murine ileal organoids in a non-GVHD environment. As JAK inhibitors effectively immunosuppress donor T-cells *and* protect healthy target organs from GvHD-mediated damage, they may be a more appropriate first-line therapy for GvHD.

ABSTRACT 12

CLINICAL OUTCOMES FOR MINIMALLY INVASIVE IRRIGATING CATHETER APPROACH FOR PATIENTS UNDERGOING EXTRAVENTRICULAR DRAINAGE (EVD).

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Background: Traditional extraventricular drainage (EVD) uses gravity to aid fluid release from the brain but risks catheter clogging or infection. The IRRAflow system uses a controlled fluid exchange system and self-irrigating design to control intracranial pressure and minimize these risks. IRRAflow has had mixed results in recent studies, so more research is needed to establish its efficacy and safety against the traditional EVD.

Objective: To evaluate clinical outcomes such as EVD duration, complication rate, functional outcome (mRS scores), and mortality rate associated with IRRAFlow EVD treatment of ICH, IVH, and SAH to promote resolution.

Methods: A single-institution, prospective cohort study analyzed EVD patients between December 2021 and September 2023. Patients who were treated with the IRRAFlow device were evaluated for clinical outcomes. Non-parametric statistics were applied for skewed data. Baseline descriptive and multivariable analyses were performed using R version 4.3.3.

Results: Of the 289 EVD patients, 32 (11%) were treated with IRRAFlow devices. Median EVD duration was 7.5 (IQR:3-9) days, with 3 (10%) requiring EVD replacement. 17 patients (53%) experienced complications, 24% of which were classified as serious adverse events (grade of 3-5). Complications included infection in 3 patients (9%), tract hemorrhage in 2 (6.5%), new ICH in 2 (6.5%), and clotting requiring flushing in 1 (3.2%). 4 patients (13%) had 30-day mortality. Median mRS scores at discharge, 30, 60, and 90 days were 3 (IQR:3-5), 3 (IQR:2-5), 2.5 (IQR:2-3), and 2 (IQR:2-4) days, respectively. Multivariable logistic regression analyzed the relationship between EVD duration, age, and 30-day mortality, but no significant association was found between duration (β=0.0206, SE=0.085, z=0.242, p=0.809) nor age (β=-0.0041, SE=0.039, z=-0.105, p=0.917) and mortality. A Type III ANOVA assessed predictors of total hospital stay, finding that race was significantly associated ($F(4,18)=4.05$, p=0.016), but age (p=0.262) and EVD duration (p=0.418) were not.

Conclusion: IRRAflow-treated patients had a median EVD duration of 7.5 days, with a 10% replacement rate and 53% complication rate. 24% of complications were serious adverse events. Multivariable analyses found no significant associations between EVD duration or age and 30-day mortality. Race was a significant predictor of total hospital stay. Further research is needed to evaluate the IRRAflow device against traditional EVD.

ABSTRACT 13

A QUALITATIVE STUDY EXPLORING THE POST-TREATMENT NEEDS OF YOUNG ADULT CANCER SURVIVORS IN RURAL UNDERSERVED COMMUNITIES.

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Background: Cancer centers have increasingly emphasized their "community outreach and engagement" (COE) efforts since 2016 when the NCI mandated that cancer centers integrate COE activities. While COE programs at cancer centers have made progress in increasing access to treatment and clinical trials, experts call for deeper community engagement and collaborations between cancer centers and surrounding marginalized communities to build trusting relationships over time. For cancer survivors who received treatment at an NCI designated cancer center but live in outlying areas, little is known about their experience with survivorship care in the years after their treatment. The objective of this study was to identify post-treatment needs, concerns, barriers, and facilitators of survivorship care among young adult cancer survivors who received treatment at an academic comprehensive cancer center while living in rural, underserved communities in California.

Methods: This study used a cross-sectional design with a one-time semi-structured interview. Eligible participants were: (i) diagnosed with any cancer between age 15-39, (ii) greater than or equal to two years post-diagnosis,(iii) greater than or equal to 18 years of age at time of interview, (iv) fluent in English or Spanish, (v) lived in one of three rural counties during cancer treatment (San Joaquin, Stanislaus, Merced counties) and (vi) received some or all cancer treatment at a Stanford Comprehensive Cancer Center. Study data were analyzed using an iterative, team-based, applied thematic analysis approach.

Results: 15 survivors (11 female, 4 male) participated. Five overarching themes emerged from participant interviews: (i) lived experiences during the peri-diagnostic period and survivorship drive mistrust of local care and continued dependence on the academic institution's cancer care team, (ii) discovering the hard work of survivorship, (iii) challenges with clinician communication, (iv) longing for connection, community, and information about late effects during cancer treatment and survivorship, and (v) missed opportunities for support contribute to lasting unmet mental health needs.

Discussion: Current models of survivorship care meeting the NCI's COE standards do not meet the needs of survivors from a rural underserved region in California. Policy changes to overcome barriers related to healthcare access and delivery are needed to address unmet needs.

ABSTRACT 14

FRAGILITY ANALYSIS EVALUTATING RANDOMIZED CONTROLLED TRIALS OF OSTEOTOMY FOR OSTEOARTHRITIS ARE FRAGILE: A SYSTEMATIC REVIEW.

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Background: High tibial osteotomy (HTO) is a procedure meant to address knee malalignment and delay a total knee arthroplasty in patients with osteoarthritis. In this study we used the fragility index (FI), reverse fragility index (rFI), and fragility quotient (FQ) to determine the robustness of outcomes reported in RCTs assessing management of osteoarthritis with HTO. FI, rFI, and FQ were introduced to convey the vulnerability of a given reported outcome to the reversal of statistical significance.

Methods: PubMed, Embase, and MEDLINE were queried for RCTs on treatment of osteoarthritis with HTO. We screened for RCTs with two arms assessing surgical management of osteoarthritis with tibial osteotomy. The FI and rFI are defined as the number of outcome reversals required to alter statistical significance for significant and non-significant outcomes, respectively. The FQ was determined by dividing the FI by the sample size of each study. Subgroup analysis was performed based on the outcome category.

Results: The median FI for the 158 total outcomes was 4 with an associated median FQ of 0.083. For 20 statistically significant outcomes, the median FI was 3 with an associated median FQ of 0.053. For 138 nonsignificant outcomes the median rFI was 4 (IQR 3-6) with a median rFQ of 0.083 (IQR 0.05-0.120). There were 6 studies comparing outcomes in open wedge vs closed wedge tibial osteotomies. The median FI for these studies was 5 (IQR 3-6) and the median FQ was 0.065. The most fragile outcome category was limb length discrepancy, with a median FI of 1.5 and FQ of 0.025 and the most stable outcome category was re-operation/intervention with a median FI of 9.5 and FQ of 0.149.

Conclusion: We found that some of the outcome measures evaluated were fragile meaning that the reversal of minimal outcomes would be enough to alter outcome significance. While median FI and FQ reported should not alone, change clinical recommendations of OA management through HTO, they give physicians a greater insight into the effect size a study and help to adequately represent uncertainty in RCTs to physicians. This can help to prevent type I errors where null hypotheses are rejected despite being true for a study outcome. This kind of error can lead to unsubstantiated claims being made that lead to one intervention being recommended over another, when in actuality there is not convincing evidence to support it.

ABSTRACT 15

VISUALIZATION OF DERMAL PAPILLA SIGNALING PROTEINS THROUGH THE HAIR CYCLE.

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Background: Hair follicles have three cyclical phases, anagen (growth), catagen (regression), and telogen (rest), propelled by signals from the dermal papilla (DP), which signal stem cells (SCs) and germ cells. In mice, this cycle proceeds in a wave along the back. Previous studies focus on time points where the entire back represents a single phase. However, all phases exist concurrently postnatal day 22 (P22) given the brief first telogen phase, allowing real-time capture of signaling transitions.

Methods: By sampling K14H2BGFP; Crabp1-GFP; Lef1-RFP P22 murine back skin, we capture the activated state of molecular transitions with high resolution bulk RNA sequencing isolating DP, bulge and germ stem cells. We highlight four DP molecular signals of interest: Slc12a1, Fgf7, Corin and Draxin. To visualize phase-specific expression, murine back skins are sectioned from P18 (catagen), P21 (telogen), and P27 (late anagen). Each DP target is assigned one mouse at all three ages. The markers are stained with red fluorescence in-situ hybridization (FISH), and confocal images were qualitatively analyzed for localization and comparative intensity between ages/phases.

Results: All four markers at each age localized to the DP. Fgf7, Corin, and Draxin had their lowest fluorescence in catagen, ranging from faint to undetectable. Their intensity increased in telogen, showing small, sparse dots, and peaked in late anagen with large, numerous probe dots too abundant to quantify. In contrast, Slc12a1 has the opposite pattern exhibiting its strongest fluorescence during catagen and telogen, with comparable expression, followed by a drop with no detectable fluorescence at late anagen.

Discussion: FISH localization confirms we isolated true DP-specific signals. The increased intensity of Fgf7, Corin, and Draxin in late anagen suggests they may be critical for the telogen-to-anagen transition. Conversely, Slc12a1 may play an inhibitory role in follicle growth, requiring downregulation for anagen progression. Our findings validate our method for isolating transitional molecular signals by cell population and provide insight into the roles of potential targets for future studies in the telogen-to-anagen transition.

ABSTRACT 16*

PREDICTING POSTOPERATIVE DELIRIUM IN GERIATRIC COLECTOMY PATIENTS USING THE MODIFIED 5-FACTOR FRAILTY INDEX.

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Background: Frailty is a significant determinant of postoperative outcomes in geriatric patients. The Modified 5-Factor Frailty Index (mFI-5) is a validated tool to assess frailty and predict complications. This study examines the predictive value of the mFI-5 for postoperative delirium in geriatric patients undergoing colectomy.

Methods: A retrospective cohort study was conducted using American College of Surgeons National Surgical Quality Improvement Program 2021–2022 data for patients ≥75 years old undergoing a colectomy procedure. Frailty was categorized into non-frail (mFI=0), intermediate frailty (mFI=1), and high frailty (mFI≥2). Postoperative delirium and other outcomes, including mortality and discharge status, were analyzed. Univariate and multivariate logistic regressions were performed, and predictive validity was assessed using receiver operating characteristic area under the curve (AUC).

Results: A total of 16,770 patients were analyzed, with a frailty distribution of 22.4% (n=3,767) as non-frail, 45.2% (n=7,595) with intermediate frailty, and 32.4% (n=5,408) with high frailty. Postoperative delirium occurred in 13.3% of the cohort, with incidence increasing proportionally with frailty scores. The adjusted model demonstrated that frailty was independently associated with delirium risk (mFI=1: OR 1.16, CI 1.00–1.35; mFI≥2: OR 1.38, CI 1.18–1.61), with a predictive validity of AUC=0.73. Higher frailty scores were associated with significantly worse outcomes. Mortality rose from 12.4% in the non-frail group to 51.8% in the high frailty group ($p<0.01$)[AA1] [AA2] . Dementia/cognitive impairment was the strongest predictor (OR 3.8[AA3] 1, $p<0.01$). Patients who developed delirium exhibited higher rates of urinary tract infections (5.4% vs. 2.9%, $p<0.01$), pneumonia (16.1% vs. 4.0%, $p<0.01$), acute kidney injury (4.0% vs. 0.7%, $p<0.01$), bleeding (12.5% vs. 6.5%, $p<0.01$), and sepsis (8.4% vs. 4.9%, $p<0.01$).

Conclusions: The mFI-5 effectively predicts delirium in geriatric colectomy patients and identifies high-risk populations for targeted interventions. Routine frailty screening and perioperative optimization are recommended to improve outcomes and reduce postoperative complications in this vulnerable population.

ABSTRACT 17

VARIANTS OF SERPINA1 INCREASE VERTEBRAL BONE LENGTH IN HUMAN SUBJECTS.

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Deficiency of alpha-1 antitrypsin (AAT), resulting from genetic variants in the SERPINA1 gene, exacerbates chronic obstructive pulmonary disease (COPD) through the excessive degradation of elastin. Additionally, AAT deficiency has been correlated with an increased incidence of back pain and a heightened risk of vertebral fractures, although the underlying mechanisms remain poorly understood. There are currently no established treatment guidelines for managing spinal conditions in patients with SERPINA1 variants, as the impact of AAT deficiency on spinal structure has not been fully characterized. AAT, as an inhibitor of neutrophil and macrophage-derived elastase, plays a critical role in maintaining the integrity of connective tissues. Using both in vitro and in vivo animal models, we demonstrate that AAT deficiency compromises the mechanical strength of intervertebral discs (IVDs) and vertebral bone structure. These structural changes are associated with an increased risk of low back pain and skeletal fractures, particularly as individuals age.

A more comprehensive understanding of the pathophysiological mechanisms by which SERPINA1 mutations affect vertebral integrity is essential for informing potential treatment strategies for individuals with AAT deficiency. We hypothesized that variants of SERPINA1 would lead to alterations in spinal curvature by inducing structural changes to both the IVD and vertebral bone. To explore this, we analyzed a clinical database comprising 2,168 thoracic CT scans from a de-identified cohort, including 1,077 women and 1,091 men. Additionally, 384 patient slides were included in the analysis, with the vertebral body length being traced and quantitatively assessed. The data revealed a discernible trend of vertebral bone and disc degeneration across different SERPINA1 sub-variants. Notably, individuals with MM and MS variants exhibited shorter vertebral bone lengths compared to those with ZZ and ZS variants. This finding suggests not only a loss of mineralization but also an abnormal elongation of bone, which increases mechanical stress on the vertebrae and alters the fracture moment, thereby contributing to an elevated risk of vertebral fractures.

These findings underscore the need for further investigation into the role of AAT deficiency in spinal pathology, as well as the potential clinical implications for managing patients with SERPINA1 mutations.

ABSTRACT 18

IMPACT OF HEMODYNAMICALLY SIGNIFICANT PATENT DUCTUS ARTERIOSUS (HSPDA) ON LONG-TERM NEURODEVELOPMENTAL OUTCOMES.

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Background: The ductus arteriosus is a vital fetal vessel that typically closes spontaneously in term infants but can remain open in preterm infants, resulting in a patent ductus arteriosus (PDA). A hemodynamically significant PDA (hsPDA) occurs when blood shunting is elevated, causing pulmonary overcirculation and systemic steal. These outcomes are associated with acute and chronic organ injury, contributing to poor neurodevelopmental outcomes. This study aimed to determine the incidence of hsPDA and compare neurodevelopmental outcomes of preterm infants with and without hsPDA.

Objective: To evaluate whether hsPDA increases the risk of adverse neurodevelopmental outcomes, including delays in cognitive, motor, and language skills.

Methods: A retrospective chart review was conducted on neonates born at ≤28 weeks gestational age at NYU Hassenfeld Children's Hospital (January 2018–July 2023). Exclusion criteria included congenital heart disease, genetic syndromes, or death within three days of life. Demographic (gestational age, birth weight, sex) and clinical data (echocardiogram findings, respiratory management) were analyzed. Statistical tests included Chi-square/Fisher's Exact for categorical variables, T-test/Mann-Whitney U for continuous variables, and multivariable linear regression with the 6-month Bayley motor composite score as the dependent variable. Independent predictors were identified through univariate analysis and known associations.

Results: Of 155 infants, 34.8% (n=54) had hsPDA requiring treatment, while 65.2% (n=101) did not. Cognitive scores did not differ significantly. A small difference in 6-month language scores was noted between treatment (101.5) and no-treatment (103) groups (p=0.04). Motor scores were significantly lower in treated infants at 6 months (107.5 vs. 112, p=0.004), 12 months (101.5 vs. 109, p=0.009), and 18 months (100.5 vs. 109, p=0.02). In a multivariable model (p=0.014), DART therapy was the only independent predictor of the 6-month motor score (p=0.02), with treated infants scoring 10.5 points lower (95% CI: -1.6 to -19.4). PDA status itself was not a significant predictor.

Conclusion: Our findings show that infants with hsPDA requiring treatment had lower Bayley language and motor scores than those who did not. They also had higher rates of BPD, NEC, sepsis, ROP, and mortality. These findings underscore the severity of hsPDA and its association with poor neurodevelopmental outcomes, highlighting the need for further research.

ABSTRACT 19

DISPOSABLE INK: ASSESSING THE UTILITY OF A MOBILE TATTOO REMOVAL UNIT IN TRAUMA PREVENTION.

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Background: Tattoos can serve as meaningful self-expression but may also signify gang affiliation or exploitation, increasing the risk of violent victimization. In East Los Angeles, where tattoos can be associated with community violence, tattoo removal offers a primary prevention strategy to reduce trauma. The Disposable Ink program, run through the Los Angeles General Medical Center, provides free tattoo removal in exchange for community service. While this addresses potential financial barriers that might otherwise prevent participation, physical accessibility remains a significant challenge. This study explores the feasibility and potential benefits of a mobile tattoo removal unit to improve safety and accessibility for at-risk individuals.

Methods: This prospective, single-center descriptive survey study used paper surveys available in English and Spanish. The surveys collected basic demographic information and logistic factors related to tattoo removal participation, including transportation methods, commute times, perceived barriers to care, and opinions on the potential benefits of a mobile tattoo removal unit.

Results: A total of 74 participants from 34 zip codes completed the survey. Most participants reported not needing transportation assistance (56, 76.6%) and primarily used cars or buses to reach the tattoo removal center (50, 67.7% vs. 13, 17.6%). Despite this, most participants (67, 90.5%) believed a mobile tattoo removal unit would benefit their community, citing safety (19, 34.5%), distance to the center (12, 23.6%), and transportation difficulties (12, 21.7%) as key reasons. Median commute time was 26.6 minutes (IQR 20–30), and the median travel distance was 10 miles (IQR 10–20). Safety concerns were most common among East Los Angeles residents, where the current tattoo removal center is located.

Conclusion: The findings highlight a strong demand for a mobile tattoo removal unit, particularly among current participants citing safety concerns and transportation challenges. By improving accessibility and addressing these barriers, a mobile unit could enhance participation in tattoo removal programs and contribute to trauma prevention efforts in at-risk communities, particularly in East Los Angeles and other similarly affected neighborhoods.

ABSTRACT 20

A REVIEW OF PATIENT DEMOGRAPHICS AND PATIENT-REPORTED OUTCOME MEASURES IN TRIALS USED TO INFORM CLINICAL PRACTICE GUIDELINES FOR PATIENTS WITH HIP OSTEOARTHRITIS.

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Background: Clinical practice guidelines (CPGs) are vital for ensuring high-quality standardized care, yet patient demographics and outcome measures used to formulate CPGs may not be representative of the diversity of the general population. Given that sociocultural factors significantly impact musculoskeletal outcomes, it is essential to assess their representation in clinical research.

Research Question: To what extent are linguistic, racial, and ethnic demographics reported in the randomized controlled trials (RCTs) informing the hip osteoarthritis CPG, and how often are culturally and linguistically adapted patient-reported outcome measures (PROMs) utilized in these trials?

Methods: RCTs cited in the 2023 American Academy of Orthopaedic Surgeons CPG for hip osteoarthritis and related clinical trial registrations were reviewed. Extracted data included trial inclusion and exclusion criteria, study location, patient language proficiency, racial and ethnic demographics, and the use of translated or culturally adapted PROMs. Descriptive statistics summarized the findings.

Results: Among 74 studies from 23 countries, only 13 studies (17.6%) reported patient preferred language, increasing to 14 (19%) when including registration data. Race and ethnicity were reported in just 4 studies (5%), rising to 5 (7%) with registration details. Overall, 54 studies (73%) failed to report any language or racial/ethnic data. Of the 61 (82%) studies utilizing PROMs, 14 (23%) included translated versions, and only 9 (15%) employed culturally adapted PROMs.

Conclusion: This analysis reveals critical gaps in the reporting of linguistic, racial, and ethnic demographics in trials informing a hip osteoarthritis CPG. These factors are vital, as sociocultural differences can have a significant effect on outcomes and PROM validity. The limited use of translated and culturally adapted PROMs is particularly concerning, given the potential for cultural differences to impact scores. With studies spanning 23 countries, these findings emphasize the need for more inclusive practices in trials to enhance the representatives of recommendations in CPGs to drive equitable care.

ABSTRACT 21

ARE THE HOOS AND KOOS PATIENT-REPORTED OUTCOME MEASURES VALIDATED FOR COMMON NON-ENGLISH LANGUAGES AND ASSOCIATED CULTURES IN THE UNITED STATES? A SYSTEMATIC REVIEW.

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Background: Versions of the Hip disability/Knee injury and Osteoarthritis Outcome Score (HOOS/KOOS) measures are widely used. However, inadequate translation and validation can lead to inaccurate information for non-English-speaking patients, exacerbating disparities.

Objective: This systematic review aimed to assess the translation quality and measurement properties (e.g., validity, reliability) of non-English versions of the HOOS and KOOS in non-English-speaking populations.

Methods: We systematically reviewed peer-reviewed articles on linguistic or cultural adaptation and/or psychometric validation of HOOS or KOOS versions in adult knee or hip patients, focusing on the top five non-English languages spoken in the U.S. (Spanish, Chinese, Tagalog, Vietnamese, Arabic). Methodological quality and measurement properties were evaluated using COSMIN tools.

Results: Eighteen articles were included: HOOS (1 Chinese), KOOS (2 Arabic, 7 Chinese, 2 Spanish, 1 Tagalog), KOOS-12 (1 Spanish), KOOS for Joint Replacement (JR; 1 Spanish), and KOOS-Patellofemoral (PF; 2 Arabic, 1 Spanish). Of 15 studies describing translation, 6 received a rating of at least adequate on ≥80% of translation criteria. Four studies specifically described cross-cultural adaptation, and none quantitatively assessed cross-cultural validity (i.e., measurement invariance) across language or culture. Only Spanish KOOS-12 had high-quality evidence of sufficient structural validity and internal consistency. There was very low-quality to moderate-quality evidence of sufficient reliability for most measures and limited information about measurement error. There was sufficient construct validity for Spanish KOOS JR (high-quality evidence) and Spanish KOOS-PF (low-quality evidence) but moderate-quality to high-quality evidence of insufficient construct validity for several measures. There was high-quality evidence of sufficient responsiveness for Chinese KOOS, moderate-quality evidence for Spanish KOOS and KOOS-12, and low-quality evidence for Chinese HOOS and Spanish KOOS-PF.

Conclusion: Substantial gaps were found in available HOOS and KOOS translations, and limitations were noted in the translation quality and measurement properties of the existing measures. Until high-quality validated translations are available, cautious use is necessary to prevent data misinterpretation that can exacerbate disparities.

ABSTRACT 22

ASSESSING FOR TRAUMA IN AN INPATIENT CHILD PSYCHIATRY UNIT USING THE PEDIATRIC ACES AND RELATED LIFE EVENTS SCREENER (PEARLS).

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Purpose: This study aims to analyzes the prevalence of adverse childhood experiences among youth admitted to an inpatient psychiatric unit through administration of the Pediatric ACES and Related Life-Events Screener (PEARLS) to consenting guardians of patients, and to characterize the population in terms of PEARLS score and clinical history/outcome.

Hypothesis: We expect to demonstrate a high prevalence of ACEs among this population and a significant association between adverse childhood events and severe psychiatric morbidity (e.g. length of stay).

Methods: This Institutional Review Board-approved study uses a cohort design. The subjects consisted of patients aged 5 to 17 admitted to an urban pediatric psychiatric unit and their guardians. The 17-question PEARLS questionnaire was given to consenting guardians of admitted patients. Questionnaire data was analyzed to determine the prevalence of ACEs and regression analysis was performed to analyze demographic information, psychiatric history, medical history, and length of stay.

Results: Nineteen participants were included in this study, who had on average two prior hospitalizations and 0.6 prior suicide attempts. Among these 19 participants, 15 had a PEARLS score higher than their ACE score. The higher PEARLS score was positively correlated with a greater number of medical comorbidities ($p<0.05$). The most commonly reported items that are unique to the PEARLS questionnaire were items 12, 11, and 13, respectively–the child experiencing discrimination, seeing/being victim of violence, and housing-related stressors.

Conclusion: Since most participants had a PEARLS score higher than their ACE score, the PEARLS questionnaire may capture aspects of a pediatric patient's trauma history that otherwise go unnoticed. In line with literature highlighting the connection between trauma and worsened physical health, the patients whose PEARLS scores were higher than their ACE scores had a greater number of medical comorbidities. Given the important information ascertained by the PEARLS, further study of the questionnaire should be considered. This study is limited by its small sample size and the administration of the questionnaire to guardians, who may have been wary of fully answering the questions.

ABSTRACT 23

PREDICTORS OF SHORT-TERM SURGICAL OUTCOMES OF PEDIATRIC THYROIDECTOMY: A RETROSPECTIVE STUDY OF THE FUKUSHIMA HEALTH MANAGEMENT SURVEY COHORT.

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Background: The Fukushima Health Management Survey (FMHS), established after the 2011 Fukushima Daiichi nuclear disaster, implemented thyroid cancer screening of residents under 18 years old. While standard pediatric thyroid cancer treatment is based on Chernobyl, FHMS cases exhibit less aggressive features, resembling sporadic cancer. Therefore, the adult approach guided surgical resection in FMHS cases, providing a unique cohort to inform pediatric thyroidectomy standards. This research explores factors mediating surgical outcomes of pediatric thyroidectomy in the FMHS cohort to contextualize the role of thyroidectomy range.

Methods: Medical records of 220 pediatric thyroid cancer patients, identified by FHMS and treated at Fukushima Medical University Hospital from 2012 to 2021, were retrospectively reviewed. All patients underwent central lymph node dissection. Patients without contralateral lymph node metastasis, intra-thyroidal dissemination, and metastasis underwent unilateral lobectomy (UL). Others underwent total thyroidectomy (TT). Linear regression analyses determined covariates associated with operation time, time to surgical drain removal, and post-operative length of stay. Poisson regression determined covariates associated with the number of complications.

Results: Of 220 patients, 135 (61.4%) were female with a median age of 13 years at time of the disaster and 18 years at time of surgery. Most (90.5%) of patients underwent UL.
Operation time was associated with recurrent laryngeal nerve injury (beta=27.5; 95%CI=11.3-43.7), operation blood loss (beta=0.2; 95%CI=0.1-0.3), lymph node removal range (beta=42.1, 95%CI=32.8-51.3) and thyroidectomy range (UL beta=0.14; 95%CI=0.05-0.35). Postoperative LOS was associated with operation time (beta=0.005; 95%CI=0.001-0.009) and tumor size (beta=0.02; 95%CI=0.004-0.04). Poisson regression modeling of the number of complications revealed associations with age (IRR=1.13; 95%CI=1.01-1.27), thyroidectomy range (UL IRR=0.14; 95%CI=0.05-0.35), and tumor invasion (IRR=5.10; 95%CI=1.61-13.8).

Conclusion: The results show that UL in pediatric patients minimize operation time and complications, compared to TT. This must be weighed against the risk of recurrence introduced by conservative resection. However, in pediatric patients, preserving thyroid function and minimizing supplementation is of utmost importance. Future research should pursue longer follow up to assess recurrence and permanent complications in this cohort.

ABSTRACT 24

THE EFFECTS OF INTRAOPERATIVE METHADONE ON TRANSGENDER AND GENDER-DIVERSE PATIENTS RECEIVING VAGINOPLASTY.

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Purpose: Reducing postoperative opioid use is critical to avoid the risk of substance misuse, a concern especially relevant to transgender and gender-diverse (TGD) patients, who experience high rates of substance use disorder. Maintaining effective pain control is essential to prevent adverse outcomes. Studies in cardiac and neurological patients suggest that intraoperative methadone, compared to short-acting opioids (SAO), reduces postoperative morphine milligram equivalents (MME) consumption and pain scores. However, these findings may not extend to TGD patients undergoing genital surgeries, a gap this study aims to address.

Methods: This retrospective cohort study analyzed data from TGD patients undergoing vaginoplasty at a single academic center between February 2021 and September 2023. Surgical techniques and perioperative pain protocols were assessed for consistency across surgeons. The main outcomes were opioid MME consumption and average pain scores on postoperative days (POD) zero through three. Patients were grouped into those receiving methadone only, methadone + SAO, and SAO only. Missing data were handled using multiple imputations. Hurdle models with multivariate logistic and linear regressions addressed excess zeroes in the data; demographical covariates were controlled for within these models.

Results: The study included 212 patients. Patients in the methadone or methadone+ SAO groups had significantly lower odds of requiring postoperative opioids across all PODs ($p < 0.001$). Among those needing opioids, MME consumption was higher in the methadone+ SAO group on POD0 ($p = 0.033$) but lower in the methadone-only group by POD2 ($p = 0.025$). Methadone-only and methadone + SAO patients were also less likely to report pain across all PODs ($p < 0.001$). For those reporting pain, the methadone-only and methadone + SAO groups had lower pain scores on POD1 ($p < 0.001$), with methadone-only patients reporting lower scores on POD2 compared to SAO-only patients ($p = 0.033$).

Conclusion: Intraoperative methadone use is associated with reduced postoperative opioid consumption and pain in TGD patients undergoing vaginoplasty. While these results are promising, the study's retrospective design limits causal conclusions. Future randomized studies are necessary to confirm these findings. If validated, methadone could not only improve postoperative outcomes but also reduce the risk of substance misuse in a vulnerable population receiving gender-affirming care.

ABSTRACT 25

EXPLORING THE PATIENT-DEFINED PRIMARY CARE GOALS OF PEOPLE WHO USE DRUGS IN INPATIENT REHABILITATION: A QUALITATIVE STUDY.

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Background: In 2023, an estimated 107,500 drug overdose deaths occurred in the U.S. While this marks a 3% decline from the previous year—the first annual decrease since 2018—urgent efforts are needed to expand access to tailored medical care for people who use drugs (PWUD), a highly vulnerable and stigmatized population. Primary care has the potential to address this crisis, yet many PWUD remain disconnected from these services, limiting understanding of their healthcare goals.

Research Question: This study explores how individuals in inpatient substance use detoxification and rehabilitation settings define success in primary care. Through qualitative, semi-structured interviews at two sites (ACI Chemical Dependency Treatment Center and Mount Sinai West Addiction Institute), we identify patient priorities and strategies for improving care. The goal is to inform new primary care models that enhance HIV, HCV, and STI prevention, as well as access to substance use and mental health services.

Study Design: We conducted 24 Zoom interviews, each averaging 45 minutes, using a semi-standardized questionnaire on perceived barriers and successes in primary care. Transcripts were analyzed using NVivo to develop a thematic framework. Findings were reviewed by the REACH consumer advisory board, a group of current REACH patients, to refine recommendations for primary care models.

Results/Discussion: Building on a 2023-24 qualitative study of REACH patients, this study deepens our understanding of PWUD's primary care needs. Thematic analysis revealed three key findings:

Breaking the Silence – Participants described uncertainty about disclosing substance use due to past stigma and emphasized the need for provider-led, judgment-free conversations.
Building Bridges, Not Barriers – Participants highlighted that trust and consistency in longitudinal, nonjudgmental relationships with primary care providers improve retention, and ultimately, health outcomes.

Partners in Care – Participants shared that patient-centered, collaborative care, including harm reduction approaches, empowers them to engage in their health.
Findings align with prior research on patient-provider relationships in primary care for PWUD, reinforcing the need for stigma-free communication, continuity of care, and patient empowerment.

ABSTRACT 26

LINKING CORTICAL DEMYELINATION TO LANGUAGE IMPAIRMENTS IN EARLY MS.

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Background: Multiple Sclerosis (MS) is a chronic autoimmune demyelinating disorder. Due in part to variability in lesion location within the central nervous system, MS can produce a spectrum of symptoms affecting motor, sensory, and cognitive function. Language deficits are common in people with MS (pwMS), with word-finding difficulty being the most frequent language complaint in early disease, yet the mechanism for this impairment is unclear. Cortical lesions are common and can be extensive in MS, and recent evidence suggests that cortical lesions may frequently be located in cortical regions implicated in language function.

Objective: To identify whether cortical lesions in regions known to be important for language are associated with language deficits in early MS.

Methods: 24 pwMS within one year of diagnosis underwent 7T brain MRI and cognitive testing, including a validated assessment of lexical retrieval speed/word-finding (Antonyms: participants rapidly state the antonym for multiple stimulus words; scores adjusted for reading speed assessed with control task). Cortical lesions were identified manually on T1 and T2* weighted images ($0.5mm^3$ resolution). 7T T1 weighted images were segmented into cortical parcels according to the Human Connectome Project brain atlas, and for each participant, cortical lesions were mapped to individual parcels. Group comparisons were used to identify associations between lesion presence and language impairment. Cortical parcels of interest were chosen based on previously described subnetworks of regions active during semantic, syntactical, and speech processing.

Results: The analyzed cohort included 18 women and 6 men, mean time since diagnosis 0.9 ± 0.4 years, mean age 35 ± 9 years. Cortical lesions were identified in 20/24 (83%) of pwMS. 17/24 (71%) had cortical lesions in regions implicated in language function. Presence of cortical lesions in language regions was associated with slower lexical retrieval speed (Antonyms mean time 18.2 ± 4.7 vs. 35.5 ± 20.0 seconds, $p = 0.041$). Presence of cortical lesions in language regions was not associated with worse performance on other cognitive or language tasks, and neither total cortical lesion volume nor total white matter lesion volume were significantly associated with performance on any language task.

Conclusions: In early MS, cortical lesions in language regions may account in part for expressive language deficits.

ABSTRACT 27

DISPARITIES IN EMERGENCY DEPARTMENT UTILIZATION AMONG PATIENTS DIAGNOSED WITH ENDOMETRIAL CANCER.

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Objectives: The aim of this study is to examine sociodemographic factors leading to emergency department (ED) use in patients diagnosed with endometrial cancer (EC).

Methods: This is a retrospective cohort study of all patients receiving neoadjuvant or adjuvant therapy for EC at a single, urban institution between January 1, 2014, and September 1, 2023. Clinicopathological and follow up data was extracted from medical records including information on emergency department utilization. Patient and treatment characteristics were assessed using the Chi-square or Fisher's exact test for categorical variables and the t-test or Wilcoxon Rank Sum test for continuous variables, as appropriate. The relationship between sociodemographic factors and emergency department (ED) utilization was analyzed using univariable and multivariable logistic regression models (Table 1). The multivariable logistic regression model adjusted for potential confounders of age, BMI, comorbidities, and FIGO stage.

Results: Our cohort consisted of 276 patients, of which 54 (19.5%) were seen in the ED during their treatment course. In our cohort, 80 (31.6%) identified as Black, 97 (38.3%) identified as White, 30 (11.9%) identified as Asian, and 46 (18.2%) identified as another race. Among those who went to the ED, 23 (47.9%) identified as Black, 12 (25%) identified as White, 5 (10.4%) identified as Asian, and 6 (16.7%) identified as another race. Patients who utilized the ED were more likely to identify as black race, have a larger BMI, and have associated comorbidities ($p<0.05$).

Patients who identified as Black race were significantly more likely to present to the emergency room during adjuvant treatment compared to patients who identified as white (OR 2.9, 95% CI 1.3-6.2, p=0.008). This remained statistically significant after multivariable analysis, adjusting for age, BMI, comorbidities, and FIGO stage (OR 2.4, 95% CI (1.1-5.3), p=0.04) (Table 1). There was no significant difference in patient's ethnicity, insurance status, or primary language in association with emergency room use (Table 1).

Conclusion: In our cohort, patients who identified as Black race were more likely to utilize the ED during treatment. Our findings highlight the need for interventions to minimize ED use and create equal access to providers across all racial groups.

ABSTRACT 28

EFFECT OF PERIOSTEAL ELEVATION ON POST-RHINOPLASTY BRUISING.

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Background: The effect of periosteal elevation prior to osteotomy in rhinoplasty is not well understood. It is theorized that elevating the periosteum reduces trauma as only a small incision is made as opposed to multiple perforations along the entire osteotomy line. Due to variable evidence that suggests that elevating the periosteum prior to osteotomy may increase ecchymosis, there is currently no agreed standard of care regarding periosteal elevation prior to osteotomy in rhinoplasty.

Methods: 5 patients were enrolled at the clinical sites of Mount Sinai's facial plastic surgery faculty to participate in this split-face study. Participants underwent rhinoplasty with lateral osteotomies, and each patient had one side of the face that was randomly selected to undergo periosteal elevation. Three blinded evaluators independently graded the degree of ecchymosis on a visual analog scale of 0 to 10 on each side of the nose. A difference in mean score between sides of the nose was calculated using a paired *t* test. The present study hypothesized that periosteal elevation would lead to decreased postoperative ecchymosis compared to no periosteal elevation in the short term (1 day), but that there will be no difference in the long term (30 days).

Results: A total of 5 patients (3 females and 2 males) were recruited for this prospective study. The mean age of the patients at the time of presentation was 27 years (range, 22 to 34 years). Ecchymosis was similar in the elevated and non-elevated sides at postoperative days 1 and 30. The mean (SD) difference in ecchymosis scores between sides on day 1 was 0.16 (0.43) (95% CI, (−0.348,1.848) and on day 30 was 0.92 (0.88) (95% CI, (−0.479,2.312), both favoring the non-elevated side. These differences were not found to be statistically or clinically significant ($p<0.05$). Additionally, all mean differences between the elevated and non-elevated sides for individual raters were not statistically significant.

Conclusion: In this prospective split-face study, periosteal elevation prior to osteotomy in rhinoplasty did not result in a significant difference in postoperative ecchymosis at either the short-term (1 day) or long-term (30 days) evaluation points. While slight differences favoring the non-elevated side were observed, they were neither statistically nor clinically significant. Future studies with larger sample sizes are warranted to confirm these results and refine best practices to reduce post-rhinoplasty bruising.

ABSTRACT 29

RISK FACTORS AND COMPLICATIONS ASSOCIATED WITH PROLONGED LENGTH OF STAY IN PATIENTS UNDERGOING CSF RHINORRHEA ENDOSCOPIC REPAIR.

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Background: Endoscopic repair of cerebrospinal fluid (CSF) rhinorrhea is a critical rhinologic intervention. This study aims to identify risk factors and complications associated with prolonged length of stay (PLOS) in these patients.

Methods: A retrospective cohort study was conducted on 3,685 patients undergoing CSF rhinorrhea endoscopic repair from the National Inpatient Sample (2016-2019). Survey-weighted methods were used to assess both univariate and multivariate risk factors for PLOS (defined as the 75th percentile or >7 days).

Results: 770 patients out of 3,685 experienced a PLOS. Patients with PLOS had a mean length of stay of 16.84 days compared to 3.94 days for those with SLOS ($p < .001$), and they accrued higher total charges ($p < .001$). Both insurance status and emergent surgeries (24.2%) were found to be significant factors contributing to PLOS. Other nasal disorders ($p < .001$), stroke ($p = .028$), unintentional weight loss ($p = .05$), fluid and electrolyte disorders ($p = .035$), anemia ($p < .001$), and wound disruption or infection ($p = .026$) all maintained significant associations with PLOS, consistent with their univariate analyses. Respiratory and circulatory system complications were more prevalent in the PLOS group ($p = .012$, $p = .00$), while wound infections were also significantly higher among these patients ($p < .001$).

Conclusion: Several clinical conditions may increase the risk of PLOS and post-operative complications in CSF rhinorrhea repair patients. These insights can guide perioperative strategies to optimize patient care.

ABSTRACT 30

IMPACT OF DOULA CARE ON SOCIAL DETERMINANTS OF HEALTH: DOULAS AS A TOOL TO ADDRESS NON-MEDICAL HEALTHCARE DISPARITIES WITHIN THE HEALTHCARE SYSTEM.

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Background: Doulas are trained patient care advocates who provide educational, emotional, and physical support to patients throughout their reproductive journeys. Doula care is a promising strategy for reducing inequities in birth outcomes and addressing social determinants of health (SDOH). In addition to providing physical and emotional support, community doulas connect their clients to community resources that mitigate the impacts of socioeconomic barriers on their clients' health. The Helping Promote Birth-Equity through Community-Based Doula Care (HOPE) Doula Program was designed to promote reproductive health equity in Queens, NY by providing community-based doula care to birthing individuals at public hospitals. The program integrates community-based doulas into the clinical care system to help patients achieve better social and health outcomes. This study explores how HOPE doulas impact SDOH beyond the scope of traditional doula care and traditional healthcare.

Methods: We conducted key informant interviews with doulas serving birthing clients through the HOPE Doula Program. Interviews were conducted from May to July 2023 in the participants' preferred language, English or Spanish. Interviews were recorded and transcribed via Zoom (video conferencing software) and translated by Acolad, if applicable. Dedoose analysis software was utilized to conduct thematic analysis.

Results: A total of 10 doulas were interviewed. All participants (100%) reported addressing SDOH such as housing, food security, and transportation with their clients. They also highlighted collaboration with local community-based organizations and hospitals. Overall, doulas identified their unique ability to address many SDOH through trust-building, education, culturally-responsive care, and advocacy.

Conclusions/Future Plans: The integration of community-based doulas into healthcare systems offers a scalable and impactful solution for addressing health disparities and SDOH. Through advocacy, education, and culturally competent care, doulas in the HOPE Doula Program not only supported clients in navigating the healthcare system but also connected them to essential resources such as housing and food security programs. By addressing these non-medical factors, doulas contributed to improving maternal and neonatal health outcomes. Future studies should attempt to examine the impact of doulas for specific underserved pregnant populations such as incarcerated individuals.

ABSTRACT 31

DELAY IN CHEMOTHERAPY INITIATION POST OP NEGATIVELY IMPACTS OUTCOMES IN PATIENTS WITH ENDOMETRIAL CANCER.

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Introduction: Endometrial cancer is typically managed with surgery, followed by adjuvant chemotherapy for patients with advanced or aggressive disease. However, the optimal time frame between primary surgery and chemotherapy initiation remains unclear. In other cancer types such as ovarian, colon, and rectal cancers, delays in chemotherapy initiation have been associated with poorer survival outcomes. This study aimed to evaluate the impact of prolonged time to chemotherapy (TTC) on progression-free survival (PFS) in patients with endometrial cancer.

Methods: We conducted a retrospective cohort study of patients with endometrial cancer who underwent surgery and subsequent chemotherapy at an academic institution between January 2014 and October 2023. Patients receiving neoadjuvant chemotherapy were excluded. Clinicopathological and follow-up data were extracted from the patients' medical records. We used Kaplan-Meier survival analysis to assess PFS and overall survival (OS) based on TTC, adjusting for potential confounders such as age at surgery, race, insurance status, FIGO stage, histology, and year of surgery. The t-test was employed to compare TTC across subgroups based on race, insurance type, age, BMI, disease stage, and surgical technique.

Results: Of 1,027 patients undergoing surgery, 249 received adjuvant chemotherapy, with a median follow-up of 37 months (range 1.4-119.2 months). TTC was categorized into four groups: 0-28 days, 29-42 days, 43-56 days, and 57+ days. In univariable analysis, no significant association between TTC and PFS or overall survival (OS) was found. However, after adjusting for confounders, multivariable Cox regression revealed that prolonged TTC was significantly associated with worse PFS (HR 1.65, 95% CI 1.03-2.65). There were no significant differences in TTC by race, insurance, age, BMI, or disease stage.

Conclusions: Our study suggests that a delay in the initiation of chemotherapy after surgery is associated with worse progression-free survival in patients with endometrial cancer. Specifically, a delay of one month increased the risk of recurrence or death by 65%. Notably, factors such as race, insurance status, and age did not significantly influence TTC or PFS, suggesting that the impact of treatment delays on survival is largely independent of these variables. The broader implications of our study emphasize the need for multidisciplinary strategies to minimize delays in the chemotherapy timeline following surgery.

ABSTRACT 32

KINEMATIC VS. MECHANICAL ALIGNMENT IN TOTAL KNEE ARTHROPLASTY: A STATISTICAL ANALYSIS OF RANDOMIZED CONTROL TRIALS UTILIZING DICHOTOMOUS AND CONTINUOUS FRAGILITY METRICS.

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Background: Randomized controlled trials (RCTs) that assess kinematic alignment (KA) versus mechanical alignment (MA) in total knee arthroplasty (TKA) often report p-values that influence surgical decision-making. This study utilizes both dichotomous and continuous fragility indices (FI) and fragility quotient (FQ) metrics to assess the statistical stability of outcomes reported in RCTs comparing KA and MA approaches in TKA, hypothesizing that dichotomous outcomes in KA vs MA TKA RCTs are statistically fragile.

Methods: PubMed, Embase, and MEDLINE were queried for RCTs evaluating KA vs MA approaches in TKA published January 1, 2010 to December 31, 2023. The FI and reverse fragility index (rFI) were calculated for dichotomous outcomes and were defined as the number of event reversals needed to alter the statistical significance for significant and non-significant outcomes, respectively. The continuous fragility index (cFI) was used to evaluate statistically significant continuous variables and was calculated using a novel online tool. The FQ was calculated by dividing the FI, rFI, or cFI by the respective sample size.

Results: Of 123 RCTs screened for inclusion, a total of 58 outcomes were extracted. The median FI across all 58 outcomes, both dichotomous and continuous, was 7.0, with an associated median FQ of 0.109. Overall, dichotomous variables were more fragile than continuous variables. The 12 dichotomous outcomes were all statistically non-significant, with a median rFI of 4.5 (FQ 0.040). The 46 continuous outcomes were all statistically significant, with a median cFI of 9.1 (FQ 0.113). In 21 of 58 outcomes, the number of patients lost to follow up was greater than the FI for the respective outcome. When analyzing by outcome category, clinical improvement and complications were more fragile, with median FIs of 6.7 and 5.0 respectively. Radiographic parameters were the least fragile outcome, with a median FI of 10.8. 24 of 29 (82.7%) statistically significant clinical improvement outcomes demonstrated superiority of MA TKA compared to KA TKA.

Conclusion: Continuous outcomes are more robust than the relatively fragile dichotomous outcomes. The continuous outcomes in KA versus MA RCTs were also more robust compared to other current studies reporting cFI values. cFI is a novel, valuable tool that allows for assessment of fragility for continuous outcomes, and reporting alongside FI, rFI, and FQ with p-values is recommended to assess the reliability of RCTs.

ABSTRACT 33*

PATTERNS OF PLATELET DYSFUNCTION IN NEUROTRAUMA PATIENTS BASED ON AGE.

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Introduction: Platelet dysfunction in neurotrauma patients is a significant concern as it can negatively impact recovery. The precise mechanisms of platelet dysfunction and how they may differ between patients are still unclear. This study uses thromboelastography with platelet mapping (TEG-PM) data from trauma patients to investigate the incidence and association of platelet dysfunction with demographic and clinical characteristics.

Methods: A retrospective chart review was conducted of adult trauma patients admitted to a large urban institution over a 2-year period and having at least one TEG-PM data point within 48 hours of admission. Demographic and clinical data were collected, and descriptive statistics were used to characterize the cohort. Platelet dysfunction was defined as having inhibition of the arachidonic acid (AA) or adenosine diphosphate (ADP) pathway of 20% or more, based on institutional clinical guidelines. Statistical analyses were used to compare incidence of platelet dysfunction between age groups and compare TEG-PM marker means between these groups, and an adjusted odds ratio of experiencing platelet dysfunction was calculated with respect to increased age.

Results: A total of 247 patients were included in the cohort. Mean age was 54.0 years (SD=20.9), and 27.1% were female. 85.0% (n=210) experienced some form of head/neck trauma, 9.7% had thrombocytopenia, 8.9% had thrombocythemia and 83.0% had platelet dysfunction. Neither AA nor ADP platelet dysfunction incidence were significantly different between those above and below 65 years. MA Kaolin, MA ActF, MA ADP, and ADP aggregation were significantly increased in patients above 65 years of age whereas ADP inhibition and AA aggregation were significantly decreased in patients above 65 years of age ($p<0.05$). Increased age was associated with increased odds of experiencing AA platelet dysfunction (adjusted OR = 1.02, 95% CI 1.00 to 1.04), but not ADP platelet dysfunction (adjusted OR = 1.00, 95% CI 0.97 to 1.03).

Conclusion: A significant proportion of trauma patients had platelet dysfunction, even with normal platelet count. While platelet dysfunction incidence did not differ significantly between groups, platelet function markers did significantly differ between older and younger patients and age increased risk of AA dysfunction. This indicates a potential benefit to targeted interventions for older patients to reverse AA platelet dysfunction and improve trauma outcomes.

ABSTRACT 34*

ASSOCIATIONS BETWEEN SOCIAL SUPPORT AND OUTCOMES IN OLDER ADULTS WITH CANCER UNDERGOING PALLIATIVE RADIATION THERAPY.

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Background: Social support is an important dimension of the cancer experience among older adults, but the relationship between social support and post-RT outcomes is not well studied. We examined associations between pre-RT social support and post-RT changes in cognitive function, motor ability, and RT-caused toxicities in older patients with cancer.

Methods: We enrolled patients ≥55 years with metastatic cancer who underwent palliative RT at Mount Sinai Hospital. Social support was measured by the Medical Outcomes Study Social Support Survey (MOS-SSS), where a score of 3 or lower indicated a lack of social support. Cognitive function was measured with the Blessed Orientation-Memory-Concentration Assessment (BOMC), and mobility with the Timed Up and Go (TUG) test and the Short Physical Performance Battery (SPPB). Patients were surveyed at baseline and 1, 3, and 6 months post-RT. We assessed radiation side effects using the Patient-Reported Outcomes Version of Common Terminology Criteria for Adverse Events (PRO-CTCAE). Mixed model ANOVAs were fitted separately for each outcome. Demographic characteristics were compared using descriptive statistics.

Results: Responses from 58 participants were available for analysis, 10 of whom lacked social support and 48 who had adequate social support. Between RT-end and 6 months post-RT, TUG time increased in patients with adequate social support ($p = 0.021$) and decreased in those lacking social support. The difference of the mean changes between RT-end and 6 months post-RT in the two groups was also significant ($p = 0.032$). In patients with adequate social support, SPPB scores decreased ($p = 0.0495$), and BOMC scores also decreased. Toxicities did not show any trend in either social support group.

Conclusions: Our findings demonstrate that among patients self-reporting adequate social support, mobility worsened and cognitive functioning improved 6 months after radiation in our study population. Further analysis is required to better understand the relationship between social support and quality of life in older patients with metastatic disease undergoing RT.

ABSTRACT 35

A COMPARATIVE ANALYSIS OF SHAVE AND PUNCH BIOPSIES FOR T CELL RECEPTOR SEQUENCING.

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Background: Molecular testing to detect clonal T-cell populations is commonly performed on dermatologic specimens to support the diagnosis of cutaneous T-cell lymphoma. Lymphotrack by Invivoscribe is a high sensitivity and specificity assay for T-cell Receptor Gamma (TRG) and T-cell Receptor Beta (TRB) clonality by Next Generation Sequencing (NGS), which given increased accuracy and monitoring capability has resulted in increased clinician utilization for dermatologic shave and punch biopsy specimen assessment. NGS has become a standard method to establish T-cell clonality in dermatology lesions, but testing success may be affected by low lymphocyte content and stromal and epithelial cell DNA.

Objective: To interrogate the causes of test failure, we examined the quality control parameters and specimen features to look for any actionable changes to improve read depth.

Methods: We examined the quality control parameters of the testing system in order to optimize test success rate and identified biopsy type, ability to support ≥400bp amplification, and amplicon size as factors that impacted the overall diagnostic yield of TCR clonality testing by NGS on dermatologic specimens. A key goal of this study was a comparative analysis of punch versus shave biopsies. In total, there were 89 shave biopsies and 51 punch biopsies.

Results/Conclusion: Among shave biopsies that ultimately passed QC, the average percentage of lymphocytes was 20.8% compared to 17.3% in those that failed. In contrast, punch biopsies that passed had an average of 46.6% lymphocytes versus 12.5% lymphocytes in those that failed. These data again suggest a greater intrinsic variability within punch biopsy specimens and perhaps a greater capacity for the shave biopsy to result in a passed test when the percentage of lymphocytes is low. Potential factors contributing to higher QC failure punch biopsies could be due to presence of more non-lymphocyte cells in the samples.

ABSTRACT 36

TRACKING ANTIDEPRESSANT RESPONSE WITH MOTORIC FEATURES OF PSYCHOMOTOR RETARDATION.

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Background: Deep brain stimulation of the subcallosal cingulate (DBS-SCC) white matter is a valuable treatment option for treatment-resistant depression (TRD). Though long-term efficacy of DBS-SCC has been established, behavioral measures for tracking antidepressant response and distinguishing sustained effects from transient mood fluctuations remain elusive.

Objective: This study proposes motoric features of psychomotor retardation as behavioral measures for tracking antidepressant response and distinguishing sustained effects from transient mood fluctuations. Through concurrent measurement of several features of psychomotor retardation, we can determine if and how these separate features track with antidepressant response.

Methods: Motion was analyzed using video data collected as patients performed a simple and repetitive motor task. During the task, the patient faced a screen and was asked to make six circles with his or her left hand. Above the screen, a camera tracked the position of the patient's left hand. As the patient made the circles, the screen displayed a light that moved according to the position of the patient's left hand. MediaPipe, a framework for building machine learning model solutions for live and streaming media, was used to extract the patient's pose from the video data. Patients were surveyed at seven or more time points, including at least one time point before surgery and six time points at monthly intervals after surgery. Additionally, we measured depression, anxiety, and suicidality via the CAT-Mental Health (CAT-MH), a suite of mental health computerized adaptive tests (CATs) administered daily.

Results: Motoric features of psychomotor retardation were assessed in 9 patients receiving DBS-SCC for TRD. 2 of these patients were non-responders. After turn on, motor variability was markedly more irregular in non-responders in comparison to responders. This irregularity was independent of CAT-MH scores. However, in both responders and non-responders, motor speed tended to increase and remain increased after turn on.

Conclusion: These findings suggest that motoric features of psychomotor retardation enable establishment and tracking of antidepressant response in patients receiving DBS-SCC for TRD.

ABSTRACT 37

STRENGTHENING THE HYPERTENSION CARE CASCADE THROUGH A DOOR-TO-DOOR, NON-PHYSICIAN MEDICATION AND PEER COUNSELING INTERVENTION IN RURAL GHANA: THE COMBINE PILOT TRIAL.

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Background: Hypertension is a major cause of morbidity in Ghana, yet access to care is limited. Only 35% of adults are aware of their condition, 22% receive treatment, and 6% achieve blood pressure (BP) control. Ghana's nurse-led primary care programs successfully use home screenings to manage common conditions, such as malaria, but are not authorized to treat non-communicable diseases (NCDs), like hypertension, for which they are required to refer patients to higher-level health centers, which are often inaccessible for rural communities. This study evaluates the efficacy of an intervention in which nurses treat hypertension locally instead of referring patients.

Methods: Nurses in Ghana's Community-Based Health Planning and Services (CHPS) program were trained to diagnose hypertension through door-to-door screening and provide pharmacotherapy. Patients received 5–10 mg of amlodipine per visit, with a sufficient supply for daily use between each of six visits. The intervention, termed CHPS Opportunity for Mentally and Behaviorally Integrated NCD Engagement (COMBINE), included home-based motivational counseling on lifestyle changes and adherence. BP control was compared between this 90-day intervention and the standard of care at another health center.

Results: Among 37 participants (mean baseline BP: 148/92 mm Hg) enrolled in the intervention group, 100% remained in care at 90 days, with 86% achieving BP control (mean BP: 122/75 mm Hg). At nine months, 89% remained in care, with all achieving BP control (mean BP: 121/75 mm Hg; 27 mm Hg systolic reduction). In the standard-care group (n=136; mean baseline BP: 156/92 mm Hg), 13% remained in care at 90 days, and 47% achieved BP control (mean BP: 135/79 mm Hg; 21 mm Hg systolic reduction). Nine-month data for this group is pending.

Conclusion: The COMBINE intervention significantly improved patient retention, BP control, and systolic BP reduction compared to standard care, warranting validation in a controlled randomized trial.

ABSTRACT 38

TRANSPARENT ARTIFICAL INTELLIGENCE MODEL PREDICTS AND EXPLAINS PROLONGED ICU STAYS AFTER PEDIATRIC SPINE DEFORMITY SURGERY.

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Introduction: Prolonged ICU stays in pediatric spinal deformity patients are associated with increased healthcare costs and worsened clinical outcomes. While machine learning models have been explored to predict preoperative risk, their clinical application remains limited due to the complexity of understanding how these models generate their predictions. The goal of this study was to evaluate the potential of various machine learning models in predicting prolonged ICU stays in pediatric spinal deformity patients, with the aim of supporting clinical decision-making and improving patient outcomes.

Methods: In this study, five machine learning models were trained and tested using a 70-20-10 train-test-validation split: Decision Tree, Random Forest, Support Vector Classifier (SVC), Gradient Boost, and Convolutional Neural Network (CNN). These models were compared with a standard Logistic Regression model to assess their ability to predict the likelihood of prolonged ICU stays. The primary evaluation metric used was the area under the receiver operating characteristic curve (AUROC), which provides an indication of the model's discriminatory power. Data used for training included demographic, surgical, and clinical factors related to the patient population.

Results: The performance of the machine learning models was measured in terms of AUROC, and the results indicated varying degrees of success in predicting prolonged ICU stays. The Decision Tree model demonstrated an AUROC of 0.71, indicating moderate predictive ability. The Random Forest model performed slightly better with an AUROC of 0.77, while the Support Vector Classifier achieved an AUROC of 0.73. Both the Gradient Boost and Convolutional Neural Network models showed the strongest performance, with AUROCs of 0.79 and 0.82, respectively. The Logistic Regression model, commonly used in clinical practice, had an AUROC of 0.73, making it less effective than the machine learning models, particularly the CNN model. These findings suggest that more complex machine learning algorithms, particularly CNNs, may offer significant advantages in predicting ICU outcomes.

Conclusion: This study highlights the potential of machine learning models, especially Convolutional Neural Networks and Gradient Boost, in predicting prolonged ICU stays for pediatric spinal deformity patients. These models demonstrated superior performance compared to traditional statistical models like Logistic Regression.

ABSTRACT 39

BENIGN PAROXYSMAL POSITIONAL VERTIGO AND CONCOMITANT PERIPHERAL VESTIBULAR DYSFUNCTION.

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Objectives: Identify a correlation between unilateral benign paroxysmal positional vertigo (BBPV) and same-side unilateral peripheral vestibular dysfunction.
Background: While it is theorized that displaced otoconia lead to BBPV, the exact mechanism is unknown. There is inconclusive research regarding the degree of vestibular dysfunction in BBPV. Understanding the correlation between BBPV and vestibular dysfunction will aid in understanding the disease mechanism.

Study Design: Cross-sectional analysis

Methods: Clinical records of 315 patients who underwent Dix-Hallpike maneuver testing for BPPV and videonystagmography (VNG) testing for peripheral vestibular dysfunction were obtained and analyzed during September 2024. BPPV diagnosis was conferred by a positive Dix-Hallpike maneuver, and a diagnosis of peripheral vestibular dysfunction was conferred by a caloric weakness percentage of greater than 25%.

Results: A total of 277 patients did not have a BPPV diagnosis. Out of those patients, 212 had no associated caloric weakness and 65 had a unilateral caloric weakness. A total of 38 patients had a unilateral BPPV diagnosis. Out of those patients, 33 had no caloric weakness and 5 had a same-side unilateral caloric weakness. A Chi-square independence test showed that there was no significant correlation between a unilateral BPPV diagnosis and a same-side unilateral VNG weakness (p-value = 0.152).

Conclusions: These findings support the current diagnostic guidelines for BPPV that recommend against VNG testing for differential diagnosis of BPPV. The results also underscore the need for more research to better understand if concomitant vestibular dysfunction contributes to BPPV.

ABSTRACT 40

THE IMPACT OF TELEPSYCHIATRY SERVICES ON MENTAL HEALTH OUTCOMES POST-COVID-19 AT A STUDENT-RUN FREE MENTAL HEALTH CLINIC.

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Purpose: The Mental Health Clinic (MHC), an ancillary service of the East Harlem Health Outreach Partnership (EHHOP), provides mental health services to underserved members of the community who are not eligible to receive health insurance under current policies. This population faces psychosocial factors that can exacerbate mental health challenges and is largely excluded from research. A 2021 study from EHHOP found that most patients who used telehealth services during the COVID-19 pandemic felt that remote psychiatric care was helpful in managing their overall mental health (Serafini et al.). Due to the positive results seen with telehealth during the pandemic, this digital care model continues to be used in clinic. However, there is a lack of research on whether telehealth therapy and in-person services yield comparable mental health outcomes in a predominantly Spanish-speaking, uninsured patient population. This study evaluates whether these modalities provide equal outcomes and assesses patient preferences regarding care delivery.

Methods: A retrospective chart review was conducted using records (n=64) from March 2020-2024 to assess mental health outcomes over time. Using participants' charts, we accessed responses to mental health questionnaires, including the Patient Health Questionnaire (PHQ-9 / PHQ-2) and General Anxiety Disorder scale (GAD-7 / GAD-2). Participants were also interviewed (n=14) to evaluate qualitative experiences with MHC. These interviews included multiple-choice and open-ended questions about participants' experiences and preferences regarding mental health care.

Results: Quantitative analysis of PHQ-9 and GAD-7 scores revealed no statistically significant differences between the modalities, suggesting comparable clinical outcomes. Despite this, 66.6% of patients expressed a preference for in-person mental health care. Participants noted that in-person therapy allowed for better communication, stronger interpersonal connection, and improved self-expression. While telepsychiatry was viewed as a convenient and necessary option during the COVID-19 pandemic, patients reported challenges such as network connectivity issues and a lack of privacy in their home setting.

Conclusion: These findings suggest that a hybrid care model may optimize mental health outcomes for MHC patients. Utilizing a hybrid model may address logistical barriers while also providing patients with the flexibility to choose the modality that best meets their needs.

ABSTRACT 41

THE IMPACT OF SELECTIVE SEROTONIN REUPTAKE INHIBITOR USE ON POSTOPERATIVE COMPLICATIONS IN DEEP INFERIOR EPIGASTRIC PERFORATOR FLAP BREAST RECONSTRUCTION.

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Purpose: Selective serotonin reuptake inhibitors (SSRIs) are commonly prescribed to alleviate psychological distress in breast cancer patients. By nature of their mechanism, SSRIs also reduce platelet aggregation, which has been shown to leading to increased risk of postoperative bleeding in cosmetic breast procedures including mastopexy and breast augmentation. The effect of SSRIs in autologous deep inferior epigastric perforator (DIEP) flap-based breast reconstruction, however, remains understudied. This study aims to address this research gap by examining the association between SSRI use and DIEP flap breast reconstruction complications.

Methods: A retrospective chart review of patients who underwent DIEP flap breast reconstruction at a single institution between 2019 to 2023 was conducted. Each patient's SSRI use status was categorized as active use at time of procedure, and a non-active group. Patient demographics, comorbidities, and postoperative complications (hematoma, seroma, wound dehiscence, flap necrosis, and unexpected reoperations within 90 days) were collected, and compared between the active and non-active SSRI groups. Logistic regression analysis was performed to assess the association of SSRIs with postoperative complications and differences amongst groups. Statistical significance was set to <0.05.

Results: In total, 585 patients were identified, of which 50 (9.4%) were in the active SSRI group, and 535 (91.4%) were in the non-active group. In the active SSRI group, 44.0% (22 patients) experienced any of the post-operative complications, and in the non-active group 28.2% (151 patients) experienced any post-operative complication. A 4.1-fold increased odds of flap necrosis was demonstrated with the use of SSRI at the time of surgery (p-value: 0.0; OR: 4.09; 95% CI: 2.0-8.5). There was no association between the use of SSRI at the time of surgery and dehiscence (p-value: 0.3; OR: 1.8; 95% CI: 035-5.6), hematoma (p-value: 0.4; OR: 1.7; 95% CI: 0.5-6.2), seroma (p-value: 0.8; OR: 0.8; 95% CI: 0.1-6.6), or unexpected reoperations within 90 days (p-value: 0.4; OR: 1.7; 95% CI: 0.5-6.2). There was no association between groups when accounting for age, race, and BMI.

Conclusion: Active SSRI use at the time of DIEP flap breast reconstruction is associated with a higher odds of postoperative flap necrosis. Careful preoperative medication modification and patient discussion regarding the associated risks are important to optimize postoperative outcomes.

ABSTRACT 42

VALIDATING BODY INCONGRUENCE SCORE IN GENDER-AFFIRMING VAGINOPLASTY PATIENTS.

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Purpose: At the Mount Sinai Center for Transgender Medicine and Surgery, gender dysphoria in patients seeking gender-affirming plastic surgery procedures has been measured using Body Incongruence Score (BIS), a patient-reported measure. This retrospective study aims to validate the Body Incongruence Score (BIS) against the Body Image Disturbance Questionnaire (BIDQ) measuring primarily body dysmorphia and Transgender Congruence Scale (TCS) measuring primarily gender dysphoria. Both are validated measures with strong psychometric properties. Once validated, the BIS can be a useful clinical tool for plastic surgeons to measure patient gender dysphoria and efficacy of gender-affirming procedures.

Methods: At CTMS, body dysmorphia related to bodily appearance and gender has been measured using Body Incongruence Score (BIS), a patient-reported measure of gender dysphoria on a 0-10 Likert scale (where zero is no gender dysphoria). We conducted more than 170 phone calls to collect pre- and post-operative BIS scores from 170 patients and responses to the BIDQ, HBIS, and BIS from 90 patients who have undergone vaginoplasty procedures at CTMS between April 2023 and June 2024. Validation of BIS with the BIDQ and TCS was reassessed using data from 170 patient responses in November 2024. Reliability Analysis was assessed with Cronbach's alpha, with values reflecting excellent internal consistency for both the Pre-op and Post-op questions for BIDQ (a= 0.779, a=0.809) and TCS (a=0.900, a=0.768). Convergent and discriminant validity was measured with Pearson's correlation coefficient measurements. These reflected linear correlation between the BIDQ and GDI for Pre-op (strong correlation at $r=0.532$, $p<0.001$) and Post-op ($r=0.269$, $p=0.014$) values, however only reflected significant correlation for the Pre-Op TCS and Pre-Op GDI values (moderate correlation at $r=0.417$, $p<0.001$; post-op was not significant at $p=0.210$, $p=0.063$).

Significance and Future Directions: A validated BIS can be a critical, standardized tool in clinical and research settings, serving to assess body incongruence in patients. This tool can aid surgeons in diagnosis, treatment planning, and assessment of surgical efficacy in addressing gender dysphoria. We hope to establish comparability across patients undergoing other gender-affirming procedures such as facial feminization in future studies.

ABSTRACT 43

PREDICTING MENTAL HEALTH CARE NEEDS AND UTILIZATION AMONG TORTURE SURVIVORS AT AN NYC-BASED HUMAN RIGHTS CENTER.

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Background: Though it is well-documented that torture survivors carry a higher mental health burden than resident populations, they access mental health care at lower rates than socioeconomic counterparts. The determinants of mental health care utilization for this patient population remain poorly understood. This study evaluates factors that influence mental health care utilization among torture survivors at the Libertas Center for Human Rights in order to improve access to mental health care.

Objective: The objective of this study is to identify demographic and sociological factors that correlate with the need for mental health services and subsequent mental health care utilization.

Methods: A retrospective chart review analyzed adult Libertas clients who received an intake from 2016-2021. Data were extracted from electronic health records and analyzed in Python to calculate odds ratios via logistic regression.

Results: Among the study group (n=255), 92.5% reported a mental health need at intake and 46.3% indicated past or present suicidal ideation. Self-reported mental health needs were positively associated with a safe housing situation (OR:2.77, p=0.04) and a torture history of beating (OR:2.79, p=0.03). Suicidal ideation was correlated with bisexual (OR:4.14, p=0.03) and gay (OR:2.3, p=0.01) sexual orientation, as well as a history of sexual assault (OR:1.94, p=0.01). Among those with a reported mental health need at intake, 26.3% did not receive any subsequent mental health care. A lack of follow-up with mental health care was correlated with "social group" as the reason for persecution (OR:2.34, p=0.01). For those who were seen via the municipal mental health care system (n=103), discharge due to three consecutive no-shows was correlated with an age of 18-29 at Libertas intake (OR:2.89, p=0.02) and gay (OR:3.53, p=0.02) sexual orientation.

Conclusion: This preliminary analysis underscores both the high prevalence of mental health needs among torture survivors and a considerable rate of attrition from mental health services. Of particular interest, sexual orientation correlated with both suicidal ideation and low mental health service utilization, highlighting LGBTQ individuals as particularly vulnerable. Though these findings identify potential areas for targeted intervention, further analysis is needed to continue to identify factors that can be leveraged to support culturally-safe and individually-tailored mental health care.

ABSTRACT 44

DESCRIPTIVE ANALYSIS OF SHORT-TERM SURGICAL OUTCOMES OF PEDIATRIC THYROIDECTOMY: A STUDY OF THE FUKUSHIMA HEALTH MANAGEMENT SURVEY COHORT.

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Background: The Fukushima Daiichi nuclear disaster of March 2011 led to the establishment of the Fukushima Health Management Survey (FHMS), whose comprehensive public health surveillance guided treatment of pediatric thyroid cancer (PTC) post-disaster.

The precedent set by Chernobyl established total thyroidectomy (TT) as the standard surgical approach in PTC. However, PTC cases in FHMS resemble less aggressive, sporadic adult thyroid cancer cases, which have a well-established surgical approach. Albeit there is limited evidence in the pediatric population.

FHMS screened all residents of the Fukushima prefecture who were 18 years old or younger at the time of the disaster. Most patients in Fukushima underwent less invasive, unilateral thyroidectomy (UL) procedures. Since PTC screening is not recommended in most settings, the FHMS data provides a unique opportunity to garner evidence on appropriate PTC surgical approaches.

Methods: In this retrospective cohort study, we reviewed surgical outcomes of 204 PTC patients who underwent UL or TT at Fukushima Medical University Hospital (FMUH) from 2012 to 2021. All patients underwent central lymph node dissection. Patients without contralateral lymph node metastasis, intra-thyroidal dissemination, and metastasis underwent UL, while others underwent TT. Descriptive and regression analyses of patient characteristics, tumor characteristics, and surgical outcomes were conducted.

Results: Of the 204 patients, 126 (61.8%) were female with a median age of 18 years (IQR=16-20). Those in the TT group (n=19) had a higher BMI than the UL (n=185) group ($p<0.02$). Tumors of TT patients were larger and metastasized ($p<0.001$). In terms of surgical outcomes, TT patients were at higher surgical risk as per Japanese surgical guidelines ($p<0.001$), experienced longer operation time ($p <0.001$), bled more ($p<0.001$), required longer post-op drainage ($p<0.001$), and had more complications ($p<0.001$) than UL patients.

Conclusions/Future Plans: Short-term surgical outcomes of UL in pediatric patients are favorable compared to TT—minimizing operation time, complications, and thyroid hormone supplementation. This study provides evidence that PTC cases treated in alignment to adult thyroid cancer guidelines for similar neoplasms can be the standard of care for PTC, thus preserving thyroid function and minimizing lifelong thyroid hormone supplementation. Importantly, further research should focus on follow up to assess recurrence risk.

ABSTRACT 45

EPIDEMIOLOGY OF INJURIES IN COMPETITION AND PRACTICE SETTINGS AMONG ADULT US FENCERS.

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Purpose: Despite fencing's long Olympic history and growing popularity, little evidence exists on the totality of its injury patterns. This study aimed to fill this knowledge gap by examining the injury prevalence and risk factors across the whole body in both competition and practice settings in US fencers.

Study Design: Cross-sectional study.

Methods: Fencers over 18-years old registered as "Competitive Members" of USA Fencing (14,839 members total) were sent a 79-question survey asking about demographics, training, competitions, and the five most impactful injuries experienced. We aimed to describe baseline characteristics and injury prevalence, explore the association of various training factors with injury prevalence and frequency and report the most common locations and injury patterns observed.

Results: A total of 491 fencers responded (3.3%). Among these, 402 (89.1%) reported receiving at least one injury while fencing. There was a significant positive association between years of fencing [OR= 1.03, 95% CI (1.02, 1.05) p< 0.001], number of competitions a year [OR=1.08, 95% CI (1.03, 1.13), p<0.05], and total hours training a weak [OR= 1.04, 95% CI (1.00, 1.07), p= 0.03] and the odds of having more than 2 injuries. Injuries to the dominant side of the body were reported significantly more than injuries that occurred on the non-dominant side (p < 0.001). The majority of specific injuries reported were classified as overuse injuries (N = 349, 44.0%), with the most prevalent being elbow tendonitis/tenosynovitis (N = 72, 9.2%), ankle ligament tears/ruptures (N = 52, 6.7%), meniscal tears (N= 37, 4.5%).

Conclusion: This study identified a dominant-side injury asymmetry in fencing, with overuse injuries being the most common. Increased exposure was associated with a higher injury risk. These findings provide a foundation for physicians, athletic trainers, coaches, and athletes to deepen their understanding of the injury risks in fencing. This knowledge will aid in the development and implementation of effective injury prevention strategies and treatment protocols.

ABSTRACT 46*

THE ROLE OF NEUTROPHILS IN THE AGING AND HEALING OF THE INTERVERTEBRAL DISC.

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Introduction: Back pain is a leading cause of disability, largely due to intervertebral disc (IVD) degeneration associated with diminished healing capacity. Neonatal mice demonstrate regenerative IVD healing unlike aged mice, where immune cells may play a role. The effects of aging on IVD immune cell populations and their responses to injury remain poorly characterized. This study aims to examine the impact of aging on immune cell populations in naïve IVDs and their response to injury.

Methods: Mice were used at three ages: Neonatal (14 days; regenerative), Adult (4 months; skeletally mature), and Aged (1 year; peak back pain disability). Annulus fibrosus (AF) herniation was induced in IVDs using needles 80% of IVD height. Single-cell RNA sequencing (scRNA-Seq) was performed and cell clusters were identified using canonical markers. Injured IVDs were collected 14 days post-injury for immunohistochemistry with Ly6G to assess neutrophils. Percent positivity was quantified.

Results: scRNA-Seq revealed distinct populations of IVD cells and immune cells including macrophages, neutrophils, T- and B-cells. Neutrophils in naïve IVDs distinctly decreased with age. Ly6G staining was localized to the AF. Percent positivity significantly decreased with age in naïve IVDs. In injured IVDs, Ly6G staining revealed robust neutrophil presence at the injury site and adjacent fibrotic tissue across all ages. Percent positivity did not significantly differ with age.

Discussion: Neonatal mice IVDs had a large population of resident neutrophils observed with sc-RNASeq and histology that were notably absent at older ages. These results suggest that neutrophils may play a role in distinct neonatal mouse IVD healing responses. No difference in Ly6G percent positivity in injured AFs was observed with age indicating it may be the initial presence of neutrophils in naive neonatal IVDs and not infiltrating neutrophils that drive regenerative response. These findings suggest that resident neutrophils are key mediators of regenerative healing in neonatal mice. Modulating resident neutrophils may present a therapeutic avenue for enhancing IVD repair and alleviating back pain in older adults.

ABSTRACT 47

ASSOCIATION OF COMMUNITY DEPRIVATION WITH PROGRESSION OF LIVER FIBROSIS AND STEATOSIS IN CHILDREN WITH MASLD.

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Background: Metabolic associated steatotic Liver Disease (MASLD) is the most common cause of chronic liver disease in pediatric populations and increases risk for progressive liver disease. Because treatment focuses on behavioral interventions, the availability of community resources impacts outcome. We previously found that children in communities with greater resource deprivation have higher rates of MASLD. Therefore, we sought to use FibroScan data to determine if community deprivation index (CDI) predicts progression of MASLD. FibroScan is a non-invasive ultrasound based imaging tool used to assess liver fibrosis and steatosis that allows for easier tracking of disease progression.

Hypothesis: We hypothesize that hepatic fibrosis and steatosis will increase over time for pediatric patients with MASLD located in high CDI communities relative to a low CDI group.

Methods: We conducted a retrospective chart review of 224 patients between the ages 2-20 diagnosed with MASLD in the Mount Sinai health system between April 2009 and October 2020. The primary outcomes were mean fibrosis score determined from liver stiffness measurement (LSM) and steatosis score determined from controlled attenuation parameter (CAP) from FibroScan. The primary predictor is community deprivation determined via the Community Deprivation Index that determines US neighborhood disparities using census data.

Results/Conclusion: The trends of log-fibrosis and steatosis scores were plotted for high CDI (n=36) and low CDI (n=7) groups as a function of time since first scan. A mixed-effects model demonstrated that trends in log-fibrosis scores did not differ significantly between low and high CDI groups (p=0.46). The same was found for steatosis (p=0.78). Additionally, the median increase in fibrosis score was significantly higher in the high CDI group compared to the low CDI group (48 vs 31%; p=0.04). The median difference between the maximum and minimum steatosis scores was not significantly different between groups (49.5 vs 37.0 units; p=1.00). Finally, the difference between high and low CDI groups regarding the proportion of patients with an increase in fibrosis scores was not significant (47.1 vs 16.7%; p=0.23). The same was shown for steatosis (63.9 vs 71.4%; p=1.00). This indicates that while not statistically significant, there is a potential connection between community resources and progression of liver fibrosis specifically to be explored with a larger sample size and higher power.

ABSTRACT 48*

DYSREGULATION OF SERUM IMMUNE PROTEINS IN CANCER PATIENTS WITH CUTANEOUS IMMUNE-RELATED ADVERSE EVENTS.

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Background: With the increasing use of immune checkpoint inhibitors (ICIs) to treat various cancers, there has been an unprecedented incidence of dermatologic side effects known as cutaneous immune-related adverse events (cirAEs). CirAEs arise in up to 60% of patients on ICIs, many occurring in geriatric patients, and can severely impact quality of life as well as cause treatment delay or discontinuation. Despite that, development of cirAEs has been associated with superior response to ICI treatment. Treatment options for cirAEs are limited, and, to our knowledge, the proteomic profiles of cirAEs have not previously been characterized. To better understand the pathophysiology underlying these ICI-induced skin reactions, we analyzed serum proteomic data from geriatric cirAE patients.

Methods: Serum samples were collected from 14 patients with cirAEs referred to dermatology and 9 healthy controls matched on age, race, and sex. Proteomic data for 393 proteins were extracted using the OLINK Proximity Extension Assay and analyzed using R software and Bioconductor packages. Differential expression was defined as |fold change| > 1.4 and false discovery rate < 0.05.

Results: Compared to healthy controls, cirAE patients demonstrated significant upregulation of proteins related to the Th1 immune pathway (CXCL9, IL2RA, TNF-R1, TNF-R2), a key immune axis that promotes cell-mediated immunity to target and kill tumor cells. Furthermore, there was upregulated expression of TNFRSF9, a stimulator of T-cell clonal expansion and Th1 response. Increased TNFRSF9 expression is associated with heightened tumor-specific immune cell infiltration and correlates with improved immunotherapy response. Other upregulated proteins included facilitators of tumor cell apoptosis (FAS, TRAIL-R2, TNFRSF14), cytokines that attract immune cells to the tumor site (CX3CL1), and stimulators of natural killer and cytotoxic T-cell activity (IL-15RA).

Conclusions: These results demonstrate upregulation of anti-tumor effector proteins in cirAE patients' serum compared to healthy controls. Our findings are in line with clinical observations of cirAEs as manifestations of positive ICI response, likely due to shared immunologic pathways. Dysregulation of key immune proteins also offers insight into the insufficiently studied pathophysiology of cirAEs and potential therapeutic targets.

ABSTRACT 49

DYNAMIC MODELS FOR PANDEMIC DISEASE MODELING: COVID-19 VACCINATION.

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Background: Throughout this pandemic, mathematical models have been a crucial tool in informing officials in forming public health policies; as the COVID pandemic shifts circumstantially with addition of variants, increased vaccination in populations, the focus of models have been beginning to shift to those that model or predict the outcomes of increasing population immunity to the disease.

Objective: In this study, we examine current mathematical models of COVID-19 spread in vaccinated populations in various proportions and using these models, construct a model for endemic COVID-19 situation. We also propose a novel framework to account for lack of data at onset of a potentially long-lasting pandemic in order to increase the accuracy and preparedness of communities around the world for future pandemics.

Methods: With the machine learning models, the mean square error of each model was the main
relevant numerical result of interest. To conduct the meta-analysis, we used keywords such as “Vaccination” and “modeling” or “math” in addition to COVID[ti] to search through various databases of publications available, including Pubmed and Google Scholar as well as preprint websites (medRxiv, bioRxiv) and narrowed on two pre-eminent models to analyze.

Results & Conclusion: Mean square error allowed researchers to examine how accurate their model was, with a large mean square error corresponding to larger errors in prediction across the samples and timeframe the model was set to predict.

Chandra et al. compared across different models, where the best performing algorithm was a bidirectional LSTM algorithm (BD-LSTM) and had mean square errors of 1068; 2; 148 for the different geographical locations of India overall, Delhi, and Maharashtra. Liu et al. proposed a model for predicting hospital admission, confirmed cases and death cases based off the data in the United States and had root mean squares of 1.23, 31612.81, and 467.16, respectively.

Next, exploring our model framework, we were able to impute 30 percent of the data and match a linear regression to find a mean square variance of 235. Furthermore, after running our machine learning algorithm, the algorithm had a mean square error of 345.12 compared to the actual number of cases. Newer ML frameworks may help us develop more accurate modeling for future pandemic scenarios and allow for better preparedness of spread & mortalities.

ABSTRACT 50

RISK FACTORS FOR DEVELOPMENT OF UVEITIS AND CYSTOID MACULAR EDEMA AFTER CATARACT SURGERY.

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Purpose: To identify risk factors for the development of uveitis and cystoid macular edema (CME) after cataract surgery.

Methods: Medicare patients receiving cataract surgery between 2012-2015 (n=170,324) were identified from a 5% nationwide sample of Medicare beneficiaries. Multivariable regression assessed the association between demographic factors, history of rheumatic, ocular, and systemic disease, and prior ocular procedure with risk of postoperative anterior uveitis, panuveitis, posterior uveitis and CME.

Results: Black patients had higher odds of developing anterior uveitis (OR 4.58, 95% CI [4.01-5.22]) and CME (OR 1.70, 95% CI [1.48-1.93]) than White patients. Patients with primary open angle glaucoma had higher odds of developing anterior uveitis (OR 1.66, 95% CI [1.43-1.91]) and CME (OR 1.18, 95% CI [1.04-1.33]). Patients with closed angle glaucoma had higher odds of developing anterior uveitis (OR 1.57, 95% CI [1.14-2.10]) and CME (OR 1.37, 95% CI [1.04-1.78]). Patients with a history of retinal detachment repair had higher odds of developing posterior uveitis (OR 20.42, 95% CI [1.53-119.28]) and CME (OR 2.01, 95% CI [1.25-3.20]). Patients with a history of vitrectomy had higher odds of developing posterior uveitis (OR 6.02, 95% CI [1.24-19.80]) and CME (OR 4.43, 95% CI [3.64-5.36]).

Conclusions: Open and closed angle glaucoma, history of retinal detachment repair and vitrectomy, and Black race were risk factors for developing uveitis and CME after cataract surgery.

ABSTRACT 51

A COMPASS-31 SURVEY TO MEASURE AUTONOMIC FUNCTION IN PRIMARY OPEN ANGLE GLAUCOMA (POAG) PATIENTS.

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Glaucoma is a pervasive neurodegenerative eye disease and a preeminent cause of irreversible blindness globally. Among the various forms of glaucoma, primary open-angle glaucoma (POAG) is the most prevalent form in populations worldwide, affecting approximately 1-3% of individuals. While no curative treatments exist for POAG, timely and appropriate interventions can slow disease progression. There has been increasing interest in the literature on the Autonomic Nervous System (ANS) being the fundamental basis for the pathophysiology of Glaucoma. It is well known that current POAG treatments already target the Autonomic Nervous System; thus, it is reasonable to believe that the condition may be due to autonomic dysfunction.

This study explored the relationship between ANS dysfunction and Glaucoma through the COMPASS-31 survey, a validated instrument for measuring autonomic dysfunction. The total COMPASS-31 score measures ANS dysfunction by combining symptoms in the following categories: Orthostatic Intolerance, Vasomotor, Secretomotor, Gastrointestinal, Constipation, Bladder, and Pupillomotor. We hypothesize that patients presenting with POAG will tend to have a higher total score than patients without the disease.

Sixty-two subjects were recruited from the Center of Advanced Medicine of Mount Sinai's Ophthalmology clinic in New York City. The inclusion criteria for the study are male or female subjects of any ancestry/ethnicity who are between 40-80 years of age, diagnosed with POAG, or control subjects without glaucoma. Potential subjects must be able to comprehend and respond to the survey questions. Exclusion criteria for the study will be subjects taking the following autonomic agents: pilocarpine, brimonidine, and formoterol.

The mean score for POAG patients (N= 41) is 16.11 (Standard Deviation (SD) 12.68), and for non-POAG patients (N = 21) is 17.01 (SD 14.09) on a 100-point scale. A multivariable logistic regression model was created with the total COMPASS-31 score as the primary predictor and POAG as the outcome, yielding a statistically insignificant OR of 0.99 ($p = 0.78$). Covariates in the model include age, sex, race, beta-blocker usage, and diabetes mellitus. A supplementary Chi-square analysis comparing POAG and control subjects in individual dysfunction categories (Orthostatic Intolerance, etc.) did not yield significant results ($p > 0.05$ for all categories). Further recruitment is needed to generate more conclusive data for this study.

ABSTRACT 52

IDENTIFICATION OF DEMOGRAPHIC AND CLINICAL RISK FACTORS FOR BREAST CANCER DEVELOPMENT IN THYROID CANCER SURVIVORS USING MACHINE LEARNING ALGORITHMS.

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Background: Thyroid cancer (TC) and breast cancer (BC) are the two most common malignancies diagnosed in females. Prior studies have reported up to a 67% risk of BC in female TC survivors compared to the general population. Certain risk factors have been identified, yet few larger population-based studies have explored this relationship. This study utilized interpretable machine learning (ML) algorithms to identify predictive features for BC diagnosis following TC in a large population database.

Methods: TC patients were identified from the Surveillance, Epidemiology, and End Results (SEER) Program database, and stratified into cases (BC) and controls (NBC) based on a secondary BC diagnosis. Relevant demographic and clinical information such as age, sex, race/ethnicity, TNM stages, and histological type were included as potential predictors for BC diagnosis. We divided the dataset into training (60%) and testing (40%) sets and used forest-based Interpretable ML models (Random Forest and Extreme Gradient Boosting) to search for predictive features in the training set. The statistical significance of these features' effects on the target variable was assessed using multivariable logistic regression in the test set.

Results: Eligible patients (BC, n =1174 and NBC, n = 89,307) included females >= 20 years old, diagnosed with primary malignant TC, not preceded by any BC diagnoses, between 2010-2020. Hispanic ethnicity (OR = 0.876; CI [0.786, 0.976]) and unspecified N stage (NX) (OR = 0.88; CI [0.782, 0.991]) were identified as features significantly associated with decreased odds of BC following TC. In contrast, ages 40-54 (OR = 1.816; CI [1.523, 2.165]), 55-69 (OR = 2.562; CI [2.131, 3.08]), and >=70 (OR = 1.968; CI [1.648, 2.35]) were significantly associated with increased odds of BC. Other relevant features such as tumor size, papillary TC-follicular variant histology, and T3 stage, were identified as statistically significant by multivariable regression on the whole dataset, but not in test data subset, despite having high importance values assigned by the ML algorithms.

Conclusion: Patients of > 40 years had an increased risk of developing BC after TC. Hispanic ethnicity and unspecified lymph node status, however, were associated with a decreased risk. These features may provide important prognostic information and aid providers in stratifying patients for increased surveillance strategies after TC diagnosis.

ABSTRACT 53

USABILITY OF A PROJECTION MAPPING SURGICAL NAVIGATION SYSTEM FOR SIMULATED PEDICLE SCREW PLACEMENT.

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Introduction: Surgical navigation technologies (SNTs) enhance procedural accuracy through imaging and real-time 3D tracking. However, conventional systems require external monitors or head-mounted displays, requiring focus shifts and limiting multi-user accessibility. To address these limitations, Illuminant Surgical's Skylight projects anatomical landmarks, radiographs, and surgical trajectories directly onto the patient. Despite its potential, research on projection mapping in surgery remains limited.

Objective: This study evaluates the usability of Skylight for pedicle screw placement in a simulated setting, focusing on workflow efficiency, projection clarity, and tracking stability. Findings will inform system refinements to enhance projection-based SNTs.

Methods: Six participants were trained to use Skylight's trajectory-planning software and CT projections to perform a simulated pedicle screw placement. A bisected watermelon served as a synthetic phantom due to its resemblance to human posterior anatomy, CT visibility, and osteopenic bone-like density. Radiopaque spheres were embedded in the model as targets. Users, guided by live CT projections, inserted navigated pedicle access needles through the rind to reach the targets. A debriefing session with open-ended questions qualitatively evaluated usability. User debrief was synthesized to highlight common themes.

Results: Participants noted projection clarity, calibration, and workflow considerations. Five users highlighted visual and manipulation issues, suggesting improved projection size, contrast, and stability. Four users emphasized calibration and tracking limitations, citing the need for improved tracking stability.

Proposed refinements included fixed projection placements, positioning guidelines, and accessory fiducials to minimize tracking occlusions.

Conclusions: Skylight demonstrated strong usability and workflow efficiency in simulated pedicle screw placement, with users highlighting the intuitive interface and clear projections. However, feedback underscored the need for refinements in projection positioning and tracking stability. These proposed improvements directly address user feedback, supporting the system's development and potential integration into clinical workflows for enhanced surgical precision. Addressing these limitations through fixed projection placement and fiducial markers could enhance system reliability reinforcing projection mapping as a promising alternative to traditional SNTs.

ABSTRACT 54

IMAGE-GUIDED DOSIMETRY OF YTTRIUM-90 TRANS-ARTERIAL RADIOEMBOLIZATION FOR HEPATIC CARCINOMA.

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Background: Yttrium-90 (Y-90) microsphere-based trans-arterial radioembolization (TARE) has emerged as a safe, effective treatment for unresectable hepatocellular carcinoma (HCC). However, few studies exist on the dosimetry of Y-90 TARE. This study explores the relationship between the quantity of Y-90 microspheres and dosage delivered to the liver on tumor complete pathologic necrosis (CPN).

Hypothesis: We hypothesize that there exists an optimal dose threshold and quantity of microspheres that maximizes the likelihood of achieving CPN.

Methods: This retrospective analysis examines data of patients from Mount Sinai Medical Center (2014-2023) who underwent Y-90 TARE for HCC. Relevant data were extracted from electronic medical records, including gender, cirrhosis etiology, liver shunt fraction (LSF), lesion size, lesion location, microsphere number, dose delivered as measured by cone-beam CT (CBCT), and pathologic outcome. Univariate analyses (chi-square test for categorical and two-sample t-test for continuous variables) were assessed for associations with CPN. Those factors found to be statistically significant were then integrated into a multivariable binary logistic regression model to identify independent predictors of CPN.

Results: Overall, 83 lesions in 64 patients were included. Median particle number was 2.8x10^6 [95% CI 1.2x10^6, 8.0x10^6], and mean absorbed dose measured by CBCT was 577.0 Gy (SD 298.0 Gy). Univariate analysis revealed lesions achieving CPN to be more likely to be from male patients (77.9% vs. 40.0%, p=0.003), have EtOH etiology (23.5% vs. 0%, p=0.037), smaller LSF (5.1% vs. 9.4%, p<0.001), smaller lesion size (2.27cm vs. 3.02cm, p=0.024), be peripherally located (91.2% vs. 60.0%, p=0.002), fewer number of microspheres (3.00x10^6 vs. 4.41x10^6, p=0.009), selective injection (95.6% vs. 66.7%, p=0.003), and dose >400Gy (77.9% vs. 46.7%, p=0.01). Multivariable analysis yielded estimated dose >400Gy (Odds Ratio (OR) 5.477, 95% CI [1.014, 29.579], p=0.048) and peripheral location of lesion (OR 7.289, [1.474, 36.029], p=0.015) as independent predictors for achieving CPN.

Conclusions: The results demonstrate that higher doses (>400Gy) to the treated segment and peripheral location of lesion were predictors of CPN. Meanwhile, the number of microspheres were not found to be predictive of CPN. These findings allow for optimizing individualized dosimetry to improve outcomes for patients undergoing Y-90 TARE for HCC.

ABSTRACT 55

COMMUNITY ASSET AND RESOURCE MAPPING OF ADOLESCENT AND YOUTH-FRIENDLY HEALTH SERVICES IN UASIN GISHU COUNTY, KENYA.

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Introduction: Adolescence (10-19 years) and young adulthood (20-24 years) are key stages for health and identity development. In Kenya, where youth make up over a third of the population, adolescent and youth-friendly health services (AYFHS) are an important strategy to improve health services delivery to young people. This study aimed to identify and map organizations and institutions offering resources and services tailored to young people in Uasin Gishu county that included a health-related component.

Methods: This community asset and resource mapping study identified 84 sites offering services to adolescents and youth aged 10-24. Thirty sites were interviewed using a semi-structured interview guide that sought to ascertain information on the organization, youth served, and services provided. Data were analyzed using Excel to report frequencies, proportions, and medians/means.

Results: Of the 30 organizations, 14 were community-based, 3 international NGOs, 3 faith-based, 3 private, and 4 classified as other. The age of youth served ranged from 9 to 30 years, with 97% of organizations serving both adolescent girls and boys, and 40% serving non-binary youth. Most focused on orphaned and vulnerable adolescents (96%) and low-income youth (93%). All sites provided both one-time and varying forms of follow-up care. However, only 20 sites offered specific adolescent care training to providers working with adolescents, mostly through workshops or videos.

The most common services reported were referrals (100%), life skills (96%), health education (93%), sexual and reproductive health promotion (86%), mental health services and counseling (83%), and sexual and gender-based violence (83%). Many of the services provided focused on empowerment (60%), education (30%), and integrity (26%) typically through large group health promotion and prevention. About a third (36%) of sites had volunteer medical professionals, and many collaborated with hospitals for screenings and educational events. While life skills and education were free, some healthcare services, such as HIV testing, were fee-based.

Discussion: This study highlights a range of community-based resources and services available to young people in UG County. Community organizations play a critical role in filling healthcare gaps and improving access to health and social services for underserved young people. The findings will help guide efforts to improve AYFHS in Uasin Gishu county.

ABSTRACT 56

CATASTROPHIZING ABOUT ASTHMA SCALE: VALIDITY AND CONVERGENCE WITH THE GAD-7 SCALE AMONG OLDER ADULTS WITH ASTHMA.

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Catastrophizing refers to the tendency to anticipate exaggerated negative outcomes, often without evidence, and has been linked to how patients perceive and manage asthma symptoms. Illness-specific catastrophic thinking during asthma exacerbations is associated with symptom over-perception, often misaligned with objective airway obstruction measures. This disconnect can lead to heightened negative emotions and poor illness control, making it important to measure catastrophic thinking in asthma management plans. The Catastrophizing about Asthma Scale (CAS) is a 24-item measure assessing catastrophic thoughts during asthma attacks and daily life, rated from 0 (not at all) to 4 (certainly). While the CAS showed validity in a 2005 Belgian study with adults with mild to moderate asthma, its generalizability to U.S. populations most affected by asthma, including older adults, remains unclear. Additionally, its relationship with the Generalized Anxiety Disorder 7-Item Scale (GAD-7) is unexplored. This study examines the CAS's construct validity, internal consistency, and convergent validity with the GAD-7 in older adults with persistent, uncontrolled asthma in New York City. CAS and GAD-7 surveys were administered to 235 adults aged 60 and older, identified from electronic medical records at an academic medical center and a federally qualified health center between February 2014 and December 2017. Thirty-eight (16.2%) participants were men, with a mean (SD) age of 67.2 (5.64) years. A confirmatory factor analysis supported a two-factor structure for the CAS, distinguishing between "Exacerbation" and "General" catastrophizing. The model included cross-factor correlations, error covariances, and removal of three redundant items. All CAS items in the final model loaded significantly onto their respective factors, and the model exhibited good fit indices (CFI = 0.974, TLI = 0.964, RMSEA = 0.051, 90% CI [0.038, 0.062], SRMR = 0.041), indicating strong construct validity. The two CAS factors showed moderate correlation with adequate distinctiveness (r = 0.533). The CAS also demonstrated excellent internal consistency (Cronbach's alpha = 0.94). Both the CAS (AVE = 0.560) and GAD-7 (AVE = 0.577) exceeded the 0.50 threshold for Average Variance Extracted (AVE), indicating good convergent validity. These findings suggest the CAS is a reliable, valid tool for assessing catastrophizing in older asthma patients, providing insights for improving asthma management.

ABSTRACT 57

CARDIAC ARRHYTHMIAS AND SUBRETINAL DRUSENOID DEPOSITS IN AGE-RELATED MACULAR DEGENERATION: INSIGHTS FROM A RETROSPECTIVE STUDY AT MOUNT SINAI HOSPITAL.

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Background: Age-related macular degeneration (AMD) is a leading cause of blindness globally, primarily characterized by central vision loss. AMD is often characterized by subretinal drusenoid deposits (SDDs), located above the retinal pigment epithelium. Our lab has previously identified a link between cardiac dysfunction and valvular disease and the presence of SDDs in AMD, suggesting that the pathophysiology underlying SDD formation extends beyond the ocular domain.

Objective: In this post-hoc analysis of a retrospective cohort study, we sought to determine the prevalence of SDDs in patients with and without cardiac arrhythmias.

Methods: 107 cardiac subjects, ages 51 to 91, at Mount Sinai Hospital had spectral-domain optical coherence tomography scans read for SDDs (Y/N). Electronic medical records were reviewed for past cardiac medical history, including long-term burden of arrhythmias, history of transplantation, major cardiac devices, arrhythmic ablations, and antiarrhythmic medications. Electrocardiograms were collected and formally reviewed by a cardiologist to classify the presence and type of arrhythmias.

Results: We found SDDs in 15/31 (48.4%) patients with long-term burden of arrhythmias compared to 21/67 (31.3%) patients without arrhythmias ($p = 0.01527$, two-proportion-z-test). Furthermore, among 9 patients with a history of long-term arrhythmias resolved by an antiarrhythmic intervention for ≥6 months, only one patient has SDDs (11.1%). This prevalence is significantly lower than in patients with unresolved long-term arrhythmias ($p = 0.04448$, two-proportion z-test). Notably, the prevalence of SDDs in patients with resolved arrhythmias (1/9, 11.1%) does not differ significantly from patients without any arrhythmias (21/67, 31.3%), as indicated by a two-proportion z-test ($p = 0.2089$, n.s.).

Conclusion: Cardiac arrhythmias are associated with SDDs in AMD. This likely occurs via a hypoperfusion mechanism, whereby cardiac arrhythmias compromise cardiac output and cause downstream ophthalmic artery and choroidal hypoperfusion. This reduced blood flow can lead to choroidal thinning and create an environment conducive to the formation of SDDs. We found a comparably low prevalence of SDDs among patients with prior history of arrhythmias with restored perfusion by antiarrhythmic intervention, which supports our hypothesis of a hypoperfusion mechanism of SDD formation.

ABSTRACT 58

NIPPLE SHARING: SYSTEMATIC REVIEW OF TECHNIQUES AND OUTCOMES FOR POST-CANCER BREAST RECONSTRUCTION.

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Nipple sharing, or grafting from a portion of the contralateral nipple, has emerged as a very favorable technique for nipple reconstruction as it closely matches the characteristics of the natural contralateral nipple. Since its initial description in 1972 by Millard, nipple sharing has been further described in the literature, but options for surgical techniques have not yet been well contextualized and postoperative outcomes have not yet been well explored. To date, no systematic reviews report nipple sharing techniques and outcomes. The study aimed to systematically review nipple sharing surgical techniques and outcomes.
A comprehensive literature search was conducted across MEDLINE, Embase, PubMed, and Cochrane databases for studies published between 2000 and January 2023. Studies on nipple sharing in post-cancer breast reconstruction were selected following PRISMA guidelines. Data on surgical techniques, outcomes, and patient satisfaction were extracted and categorized. Statistical analysis included chi-square tests to assess associations between techniques, patient satisfaction, and complications, with significance set at $p<0.05$.

Among nineteen eligible studies, surgical techniques varied, with four incision types (coronal, sagittal, transverse, circumferential) for graft collection and three graft placement methods (direct-to-site, C-V flap integration, spiral) identified. 14 patients (5.0%, n=280) experienced complications, including nipple-areolar complex necrosis (1.4%) and graft failure (1.1%). Reconstructed nipple projection averaged 7.8 mm postoperatively to 5.3 mm 1 year postoperatively. While 73% found donor nipple sensation nearly normal, 53% found reconstructed nipple sensitivity worsened postoperatively. 77% of donor nipples and 42% of grafted nipples regained erectile function. 88% (n=236) would undergo the procedure again, 98% (n=83) rated donor nipple appearance positively, 82% (n=131) rated reconstructed nipple appearance positively.

Nipple sharing offers superior aesthetic and patient satisfaction outcomes with low necrosis rates at recipient and donor sites. Standardizing outcome measurements can further enhance evaluation of nipple reconstruction techniques, including nipple sharing.

ABSTRACT 59

INTENSIVE VERSUS STANDARD NEOADJUVANT 5-FLUOROURACIL, LEUCOVORIN, OXALIPLATIN, AND DOCETAXEL (FLOT) FOR GASTRIC CANCER: A RETROSPECTIVE ANALYSIS.

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Introduction: Patients with locally advanced gastric cancer are recommended to receive perioperative 5-fluorouracil, leucovorin, oxaliplatin, and docetaxel (FLOT), typically administered as 4 preoperative and 4 postoperative cycles, and curative-intent gastrectomy. Few studies have investigated the pathologic and clinical outcomes of patients who receive >4 cycles of preoperative FLOT.

Methods: A retrospective study was conducted on patients diagnosed with gastric adenocarcinoma between 2017 and 2023 who received any number of cycles of neoadjuvant FLOT prior to curative-intent gastrectomy. Groups were defined as those receiving ≤ 4 cycles (standard group) and > 4 cycles (intensive group) of preoperative FLOT. Patient demographics, operative outcomes, pathologic characteristics, and survival were compared by chi-square analysis, independent t-test, Mann-Whitney U test, and log-rank test.

Results: In total, 87 patients met inclusion criteria, with 37 (42.5%) patients in the intensive group (median preoperative FLOT 6 [5-12] vs 4 cycles [1-4], $p < 0.001$). Median duration of follow-up was 24.5 months [1, 80] in the intensive group and 21 months [4, 54] in the standard group. Patients in the intensive group were younger (mean 58 ± 12 vs 63 ± 12 years, $p < 0.05$). The intensive group completed more total chemotherapy cycles than the standard group (median 8 [5-14] vs 7 [1-8] cycles, $p < 0.001$). There were no differences in rates of dose reduction required. Recurrence-free survival (RFS, $p = 0.268$) and overall survival (OS, $p = 0.697$) were similar between the groups. The 24-month RFS rate was 73.1% in the standard group and 67.5% in the intensive group. The 24-month OS rate was 83.2% in the intensive group and 86.3% in the standard group. Operative characteristics were similar between groups. There were no differences in 30-day postoperative complications or 90-day readmission and reoperation rates. Rates of pathologic complete response and lymph node positivity were similar.

Conclusions: Overall, these data demonstrate that patients in the intensive group received more total cycles of chemotherapy without any difference in pathologic findings, recurrence or survival, although long-term survival outcomes should be investigated further in follow-up studies with larger study populations.

ABSTRACT 60

NERVE INGROWTH AT THE INTERVERTEBRAL DISC PEAKS TWO WEEKS AFTER ANNULUS INJURY, MAY NOT PLAY A ROLE IN CHRONIC PAIN RESPONSE.

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Background: Intervertebral disc (IVD) degeneration is a predominant pathology of chronic lower back pain (cLBP) and is characterized by extracellular matrix breakdown, hypocellularity, nerve fiber ingrowth, and inflammation (characterized primarily by macrophage infiltration). Despite the prevalence of IVD degeneration, nerve ingrowth and macrophage activity over time following IVD injury are poorly understood. Rats are a well studied cLBP animal model and suitable for examining cellular changes during an injury response.

Objective: This study aims to quantify nerve ingrowth and macrophage presence over time in an IVD injury rat model to potentially inform future cLBP treatment targets. We hypothesize that nerve ingrowth and macrophage presence will increase at the IVD injury site over time but will disappear in chronic injury response.

Methods: Naive and injured IVDs were analyzed from a previously established rat model, in which 5-month-old rats sustained a triple-puncture injury to the anterior annulus fibrosus (AF) of discs L3-4, L4-5, and L5-6. IVDs L2-3 were left as uninjured controls, and naive rats were not injured at any level. After injury, rats were euthanized at 3 days, 7 days, 14 days, and 56 days and were then prepared for immunohistological staining and sagittally sectioned.

To analyze nerve ingrowth, sections were stained for PGP9.5 neuronal protein. Slides stained for macrophages (CD68) had been previously prepared and were ready to be analyzed. Finally, a machine learning tool developed in QuPath was used to quantify nerve and macrophage stains by counting the number of stained (positive) cells.

Results/Discussion: Qualitatively, nerve ingrowth was observed only at the anterior side of the anterior AF, extending into the posterior edge of the anterior longitudinal ligament (ALL). Macrophage infiltration was observed more broadly, but was also strongly present at the anterior AF.

QuPath analysis of this anterior AF/ALL region revealed that nerve ingrowth increased significantly after injury, peaking at 14 days and returning to near-baseline levels by 56 days post-injury. Normalizing the number of positive cells by level, area, or total number of cells did not affect results. Macrophages in the region of interest also increased significantly, peaking at 7 days and returned to baseline levels by 56 days post-injury. Thus, macrophages and nerve ingrowth may not play a role in the development of chronic pain following lower back injuries.

ABSTRACT 61

PARADOXICAL IMPROVEMENT IN MALIGNANT PLEURAL MESOTHELIOMA OUTCOMES FOLLOWING DELAYED TREATMENT INITIATION.

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Background/Objectives: Time to treatment initiation (TTI) has been identified as a predictor of survival in many cancers, but its impact in malignant pleural mesothelioma (MPM) is unknown. This study investigates factors influencing TTI in MPM and its association with overall survival.

Methods: The Surveillance, Epidemiology, and End Results (SEER) database was used to obtain data for MPM patients in the U.S. TTI was defined as number of days from diagnosis to initiation of first treatment, and delayed TTI was defined as exceeding the median TTI. Chi-square tests and t-tests compared sociodemographic and clinical differences between early and delayed TTI groups, while Kaplan-Meier and Cox proportional hazards models evaluated relationships between prognostic factors, TTI, and survival.

Results: Among 4,879 MPM patients, median TTI was 39 days. Median survival was 10 months among early TTI patients and 13 months among delayed TTI patients. Patients with epithelioid histology were more likely to have delayed TTI, as were patients who received combination therapy or were diagnosed more recently ($p < 0.0001$). Adjusting for covariates, delayed TTI status remained associated with better survival (HR 0.79, 95% CI: 0.74–0.84).

Conclusions: This study presents an important insight into the management of MPM, demonstrating that delayed time to treatment initiation is positively associated with improved overall survival, contrary to findings in most cancers. This finding underscores the importance of comprehensive, multidisciplinary care, as delays due to robust staging evaluations and patient travel to high-volume centers of excellence likely contribute to delays in treatment. Taken together, these results suggest that clinicians should prioritize personalized treatment planning and collaborative care over a push to rapidly initiate treatment in order to optimize patient outcomes in MPM.

ABSTRACT 62

A COMPREHENSIVE COMPARISON OF SAGITTAL ALIGNMENT PARAMETERS IN ADULT PATIENTS WITH AND WITHOUT SCOLIOSIS USING FULL-BODY X-RAY IMAGING.

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Background: Both traditional and global sagittal alignment parameters on biplanar full-body X-rays have been demonstrated to predict post-surgical outcomes. While scoliosis is a rotational deformity associated with global malalignment, the clinical importance of evaluating global sagittal malalignment in adult scoliosis may be underestimated.

Objective: To compare sagittal alignment parameters in adults with idiopathic (IS) or degenerative scoliosis (DS) to those without spinal deformity (NSD) using full-body X-ray imaging.

Methods: We retrospectively analyzed a consecutive series of adult sagittal full-body images from Nov 2022–Feb 2024. Global parameters included cranial sagittal vertical axis to the sacrum (CrSVA-S), hip (CrSVA-H), knee (CrSVA-K), ankle (CrSVA-A), as well as cranium-hip-sacrum (CrHS), cranium-knee-sacrum (CrKS), and cranium-ankle-sacrum (CrAS) angles. Traditional measures included C2-C7 SVA, C7-S1 SVA, cervical lordosis (CL), T1 slope, thoracic kyphosis (TK), thoracolumbar kyphosis (TLK), T1 pelvic angle (TPA), L1 pelvic angle (LPA), lumbar lordosis (LL), pelvic incidence (PI), pelvic tilt (PT), and sacral slope (SS). Patients were stratified into NSD, IS, and DS cohorts. Propensity-matched analysis (controlling for age, sex, BMI) was utilized to compare sagittal alignment between cohorts.

Results: Among 611 patients (507 NSD, 60 IS, 44 DS), scoliosis patients were older (56.1 vs. 48.4 years, $p<0.001$) and more often female (69.2% vs. 50.9%, $p<0.001$). Propensity-matched analysis showed scoliosis patients had significantly greater CrSVA-S (5.65 vs. 2.98 cm, $p<0.001$), CrSVA-H (0.79 vs. -1.31 cm, $p<0.001$), CrSVA-K (2.33 vs. 0.68 cm, $p<0.001$), and CrSVA-A (4.60 vs. 2.23 cm, $p<0.001$) than NSD, indicating increased forward malalignment. Global angular parameters were also increased among scoliosis patients relative to NSD ($p<0.001$). While both scoliosis cohorts exhibited evidence of sagittal malalignment in matched comparisons to NSD, DS demonstrated more pronounced head and trunk anteposition and pelvic retroversion.

Conclusions: Adult scoliosis patients demonstrate significant global sagittal malalignment compared to those without spinal deformity, especially among patients with degenerative scoliosis. These findings highlight the importance of global sagittal balance assessment in adult scoliosis management. Future studies should explore the impact of these sagittal alignment differences on long-term functional outcomes and surgical decision-making.

ABSTRACT 63

ALTERED HEMODYNAMICS IN POSTPARTUM PREECLAMPSIA PATIENTS WITH OBESITY.

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Background: Severe preeclampsia (PEC) is a condition of pregnancy characterized by high blood pressure and organ dysfunction. It is commonly treated with antihypertensive medication, but thresholds for initiating treatment vary by provider and there are no guidelines regarding the most effective antihypertensive regimen. The USCOM 1A Doppler monitor can be used for non-invasive measurements of hemodynamic parameters in pregnant patients. Because obesity is a risk factor for adverse pregnancy outcomes, we sought to characterize the hemodynamic profile in patients with obesity so that we may optimize their treatment.

Objective: To determine whether there is a difference in the hemodynamic profile of postpartum PEC patients with and without obesity, and whether that difference can guide medical management.

Methods: This is a prospective observational study of women with PEC and a singleton pregnancy who were admitted to Labor and Delivery between September 2021 and September 2024. USCOM measurements were taken up to 5 days after delivery. Participants were divided into BMI ≥35 (n=74) and BMI <35 (n=85) subgroups. Data were analyzed by independent t-test, and $p<0.05$ was considered statistically significant.

Results: 159 measurements from 63 participants were included in the analysis. When compared to the BMI <35 group, patients with a BMI ≥35 had significantly higher systolic blood pressure (SBP; 130.5 vs. 135.3, p=0.03), heart rate (HR; 75.7 vs. 79.9, p=0.02), and systemic vascular resistance index (SVRI; 2387 vs. 2781, $p<0.001$). Additionally, patients with a BMI ≥35 had significantly lower diastolic blood pressure (DBP; 76.8 vs. 72.3, p=0.007), cardiac index (CI; 3.3 vs. 2.8, $p<0.001$), and stroke volume index (SVI; 44.3 vs. 35.4, $p<0.001$).

Discussion: Postpartum PEC patients with obesity have a higher SBP, HR, and SVRI as well as a lower DBP, CI, and SVI. The most commonly used antihypertensives in PEC are nifedipine, a calcium channel blocker (CCB), and labetalol, a beta blocker. Our results suggest that postpartum PEC patients with obesity may benefit most from CCBs, which are potent vasodilators that lower SVRI and increase CI, rather than beta blockers. These findings emphasize the need for monitoring of cardiovascular health in pregnant women with obesity to mitigate maternal morbidity and mortality and to optimize therapeutic interventions.

ABSTRACT 64

FACTORS ASSOCIATED WITH WOUND COMPLICATIONS FOLLOWING PSARP OR PULL-THROUGH PROCEDURES.

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Background: Surgical-site infections (SSI) and wound dehiscence are known complications of both posterior sagittal anorectoplasty (PSARP) and endorectal pull-through procedures. These complications lengthen post-operative recovery and can worsen patient quality of life. Developing standardized peri-operative recommendations in these pediatric gastrointestinal surgeries will minimize avoidable obstacles for affected patients and their families.

Objective: We aimed to determine if any pre- or post-operative modifiable factors were associated with an increased risk of wound complications following PSARP or pull-through procedures.

Methods: A retrospective review of all non-diverted PSARP and endorectal pull-through procedures at our institution from May 2011-April 2024 was conducted. The primary outcome was the development of either SSI or wound dehiscence. Clinical data, demographic information, and surgical details were recorded for all patients. Patients were excluded if follow-up did not take place for at least 30 days. Non-parametric descriptive statistics were used to analyze the sample.

Results: Our sample included 41 patients—21 with Hirschsprung's disease and 20 with anorectal malformations. 13 patients underwent chemical bowel preparation only, 7 had mechanical preparation only, 11 had a combined chemical/mechanic preparation, and 10 had no preparation. 26 patients restarted enteral feeds within 24 hours of surgery, while the other 15 restarted feeds after 24 hours. Seven cases of SSI or wound dehiscence were detected. 85.7% (6/7) of patients who developed a wound complication had restarted feeds within 24 hours of surgery. Furthermore, no patients who underwent chemical bowel preparation alone developed a wound complication. Patients who developed wound complications tended to be younger at the time of surgery than patients who did not (mean age 54.86 vs. 195.91 days, respectively).

Discussion: Chemical-only bowel preparation, waiting until post-operative day two to restart enteral feeds and delaying operations until patients are six-months or older, when possible, may help reduce the risk of wound complications following PSARPs and endo-rectal pull-through procedures.

ABSTRACT 65*

RALOXIFENE INJECTIONS INCREASE EVOKED PAIN TOLERANCE IN ALL NAÏVE MICE WITH PARTICULAR PROTECTION FROM INJURY-INDUCED PAIN IN OLD MALE MICE.

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Introduction: Background: Back pain, particularly discogenic pain, is a significant health issue for older adults, contributing to functional decline, reduced quality of life, and an annual economic burden of $560-630 billion in the US. Effective, minimally invasive pain management strategies for older adults remain limited. Raloxifene (RAL), a selective estrogen receptor modulator approved for osteoporosis treatment in postmenopausal women, has shown potential for modulating pain. This study investigates whether RAL increases pain tolerance in mice and protects against injury-induced pain following tail compression—a model for intervertebral disc (IVD) degeneration.

Methods: We treated young (2.5 month) and old (22.5 month) male and female C57Bl/6J mice with RAL or phosphate buffered saline (PBS) for 4 weeks. In a separate cohort, we administered injections before tail compression for 1 week to induce IVD degeneration. We evoked pain using Von Frey filaments at baseline, after 4 weeks of RAL or PBS treatment, and 3 weeks after removing the tail compression apparatus. Testing concluded at 60% paw withdrawal response. We used paired t-tests to compare baseline measures with post-injection measures within each group and two-way ANOVA to analyze the effects of treatment and age at each timepoint. Following significant interactions ($p<0.05$), we applied Tukey post-hoc tests.

Results: At baseline, pain tolerance did not differ across age or treatment groups. Post RAL injections, all mice showed increased evoked pain tolerance. PBS injections also increased pain tolerance in old mice of both sexes. After tail compression, RAL significantly reduced compression-induced pain in old male mice, but not in other mice.

Conclusions: Raloxifene effectively increased pain tolerance in naïve mice and IVD-injured old male mice. RAL's impact on pain modulation in aged male mice, both before and following IVD injury, highlights its potential as a component of multi-modal, non-invasive pain management strategy for older adults suffering from IVD degeneration. Future research will explore mechanisms behind RAL's age- and sex-specific effects and evaluate its potential clinical applications in geriatric populations.

ABSTRACT 66

MUSIC THERAPY FOR SERIOUSLY ILL INFANTS.

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Background: The hospitalization of seriously ill neonates in the NICU is a stressful experience for both infants and their families. Decreasing stress is a priority given its negative impact on growth and development of the infant as well as negative psycho-social outcomes for parents. HeartSong is a music therapy intervention that synchronizes an infant's heartbeat with a family's chosen Song of Kin, a piece of music that holds particular significance to the family. The Song of Kin is composed into a meaningful lullaby with the heartbeat serving as a rhythmic loop. While music therapy has been shown to reduce stress and enhance bonding in caregivers, the impact of the HeartSong intervention on infants and parents has not yet been studied.

Objectives: 1) To determine the effect of the HeartSong intervention on neonatal heart rate, respiratory rate, blood pressure, oxygen saturation and pain scores; 2) To determine the effect of the HeartSong intervention on parental heart rate, blood pressure, and self-reported stress, coping, and bonding.

Methods: This is a prospective within-subjects trial that will enroll seriously ill infants and their parents in the NICU to evaluate the effects of the HeartSong music therapy intervention. Infant vital signs, including heart rate, respiratory rate, blood pressure, and oxygen saturation level, as well as pain scores will be taken both before and after administering the HeartSong intervention. Parents' heart rate and blood pressure will also be taken before and after administration of the therapy. Parents will complete a survey both before and after the intervention that asks about stress, coping, and bonding with the infant.

Results: A total of 17 parent-infant dyads were recruited and 8 have completed the study to date. There was a statistically significant decrease in parent's reported stress levels following administration of the HeartSong intervention ($p=0.018$). Common themes in parents' observations included their infant enjoying the music and appearing relaxed. No significant changes were observed found in self-reported coping, bonding, or parent or infant vital signs ($p>0.05$).

Conclusion: The HeartSong intervention reduces parent's reported feeling of stress during their child's NICU admission. While further data is needed to determine the intervention's affect on physiological markers of stress in both parents and infants, the intervention was well received and warrants further study.

ABSTRACT 67

INSIDE OUT VS OUTSIDE IN: ELUCIDATING THE PATHOPHYSIOLOGY OF ATOPIC DERMATITIS IN IMMIGRANT VS NONIMMIGRANT POPULATIONS.

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Background: While the atopic dermatitis/AD phenotype has been classically defined as a systemic Th2/22 skewed inflammatory disease, heterogeneities between different ancestries and races, such as those between Asians and Asian Americans, have shown that both environmental and genetic factors contribute to the progression and severity of disease which can give rise to differential treatment responses. However, proteomic characterization between African American/AA, East African, and European American/EA patients with AD are currently unavailable and we aim to bridge this gap.

Methods: We performed proteomic analysis on blood samples from 56 patients with AD (10 Tanzanian, 17AA, 29EA) and 40 ethnicity-matched controls (9 Tanzanian, 11AA, 20EA) by using the OLINK immune inflammation target panel (96 proteins).

Results: Across our panel, several differentially expressed proteins/DEPs were found between AA and Africans. AA presented higher upregulations of pruritus markers (IL7, IL10RA, OPG, OSM; $p<.05$) while Tanzanians showed significant upregulation of innate immunity markers (IL6, IL8, TGFB1; $p<.05$), T cell activation markers (TNFRSF-9, SLAMF1, MMP1; $p<.05$) along with Th1 markers (CD40, CXCL10, CXCL9; $p<.05$). Moreover, consistent with what observed in skin, hallmark blood protein of epidermal differentiation complex and lipids, were not significantly down-regulated in AA and Tanzanian samples (FGF19, Axin1; $p<.05$).

Conclusion: Our findings corroborate and expand on the current knowledge of AD profiles. While AA and Africans have commonly been treated as one homogenous population in the context of AD, significant protein marker profiles may indicate diverging ancestries and potentiates novel, targeted, and more individualized therapeutics.

ABSTRACT 68

THE STAGGERING RISE IN ELECTRIC BIKING (E-BIKE) INJURIES: A 10-YEAR AGE AND SEX SPECIFIC ANALYSIS OF NATIONAL INJURY DATA.

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Objectives: Electric biking (E-Bike) is a quickly growing recreation and mode of transportation that often presents to emergency departments (ED) with high-impact mechanisms of injury. This study aims to identify the age and sex-specific distribution and primary mechanisms of E-Bike injuries in the US.

Methods: The National Electronic Injury Surveillance System (NEISS) was queried for E-Bike injuries presented to US EDs from January 1, 2013-December 31, 2022. Patient demographics, injury site, diagnosis, and disposition were recorded. NEISS narratives were assessed to identify injury mechanisms. All annual injury trends and evaluations of statistical significance were evaluated by linear regression. National estimates were calculated using SPSS statistical software and the weighted probability estimate tied to each raw NEISS case.

Results: There were 45,845 nationally estimated (NE) E-Bike related injuries (1,049 Raw NEISS Cases) presented to US EDs from 2013-2022. The average age of patients was 40.5 years (SD = 18). Linear regression revealed a significant increase in annual injuries across the study period ($p=0.008$, $\beta=0.777$). The frequency of injuries remained steady prior to 2019, with a 90.9% increase from 2019 (NE: 2,171) to 2022 (NE: 23,749) ($p=0.005$), likely due to shelter-in-place restrictions. 10.9% of patients required hospital admission following E-Bike injury, with hospitalization most frequently occurring through fracture (51.2%) and concussion (29.9%). The most injured body part for the youth, middle school and high school age groups was the head, whereas the college, young adult and adult group was the finger. Greater than 10% of patients required hospital admission for further evaluation and management. Lastly, 30% of E-Bike injuries had a motor vehicle involved.

Conclusion: The rate of injury from E-Bikes has risen significantly over the last decade, including a significant increase post-COVID. Falls resulting in fractures were the most frequent mechanism and types of injuries sustained for both sexes. The high rate of vehicle-induced collisions emphasizes the future need for additional regulations and legislation to keep E-Bikers safe.

ABSTRACT 69

NATIONAL TRENDS IN THE USE OF REGIONAL ANESTHESIA IN HYSTERECTOMIES FOR GYNECOLOGIC CANCER.

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Background: Hysterectomy is a common treatment for patients with gynecologic cancers such as endometrial, cervical, or ovarian cancer. Surgical approaches include laparotomy or minimally invasive approaches. Enhanced Recovery After Surgery (ERAS) guidelines for gynecologic oncology recommend that regional anesthesia (RA), which includes epidural anesthesia and transversus abdominis plane (TAP) block, be considered for these surgeries. The aim of our study is to evaluate national trends in the use of regional anesthesia in hysterectomies for gynecologic cancer.

Methods: This retrospective database study uses data from the Anesthesia Quality Institute National Anesthesia Clinical Outcomes Registry (AQI NACOR), the largest national database of anesthesia procedures. Cases from 01/2010 to 12/2023 with a Common Procedural Terminology (CPT) code for hysterectomy and diagnosis code for gynecologic malignancy in adults were included. Use of epidural anesthesia was determined by the submitted anesthesia type or by the presence of an epidural anesthesia CPT code. The use of TAP block or other peripheral nerve block was determined by the corresponding CPT code.

Results: From 2010 to 2023, there were 103,766 cases of hysterectomy for gynecologic cancer diagnosis. 73,659 (71%) cases used a minimally invasive approach. Among minimally invasive cases, the mean patient age was 59.3 (SD=13.4), and cancer diagnoses were 75% uterine, 18% cervical, and 6% ovarian cancer. Among the 30,107 laparotomy (open) hysterectomy cases, the mean patient age was 58.8 (SD=13.7), and cancer diagnoses were 48% uterine, 20% cervical, and 31% ovarian cancer. Among minimally invasive cases, epidural use was 0% in 2010 and 0.2% in 2023. TAP block use was 2.4% in 2015 when the CPT code was introduced and 11.7% in 2023. In open surgeries, epidural use was 4.6% in 2010 and 4.3% in 2023 while TAP block use was 5.9% in 2015 and 34.4% in 2023. Regional anesthetics were not reported in 85.8% (4729/5512) of minimally invasive procedures and 58.0% (645/1112) of open procedures in 2023.

Conclusion: TAP block use for gynecologic cancer hysterectomies increased between 2010 and 2023, but in 2023, most open and minimally invasive procedures did not report using regional anesthesia. The increase in TAP blocks may be from increased training in nerve block administration and the recommendation in ERAS guidelines. The impact of facility region, day of the week, and facility type on RA usage will be further examined.

ABSTRACT 70

A MIXED METHODS STUDY OF WOMEN'S ATTITUDES AND KNOWLEDGE AROUND MENTAL HEALTH IN RURAL VADODARA DISTRICT, INDIA AND EVALUATION OF THE IMPACT OF MINDS EDUCATIONAL SESSIONS.

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Background: Short-term, community-oriented interventions have the potential to improve knowledge around mental health in rural India, as shown by initiatives of the MINDS Foundation, which provides mental health education and access in the Vadodara area of Northwest India. Their recent project ANANDI brings educational sessions to women in rural districts, aiming to improve recognition of and responses to poor mental health. The current study builds on a 2023 evaluation to assess project ANANDI's impact on attitudes towards mental health and depression.

Methods: Written surveys and in-person focus groups around a case study were conducted with women in 22 different villages in the Vadodara area. Survey and focus group participants included both women who had attended MINDS sessions and women who had not. Regression analysis was performed on the quantitative survey data, and iterative inductive thematic analysis was performed on the qualitative focus group data.

Findings: 144 surveys and 11 focus groups were conducted. The survey groups–MINDS session attendees and non-attendees–had significant demographic differences in occupation, education level and marital status. The attendees group was associated with a higher overall survey score, reflecting less stigmatized views of poor mental health. However, two questions with differences between groups demonstrated more stigmatized views in the attendees group. In women's definitions of depression, a write-in survey question, the most common themes were: depression involves sadness; depression involves apathy or listlessness; and not being successful at something can cause depression. In the focus groups, participants named grief or loss most frequently as the cause of poor mental health and identified symptoms such as sleep disturbances and isolation. They emphasized social and family support, including talking to the person about their mental health, as key responses to such a difficulty and endorsed the utility of going to a doctor or taking medications.

Conclusions: Women in rural Vadodara district described both physical and emotional manifestations of poor mental health and showed openness to talking about mental health both in their communities and with medical professionals. Attendance of MINDS education sessions was associated with overall less stigmatized views around mental health, though conflicting results indicate that the interventions may still need tailoring to bring about significant changes in attitudes.

ABSTRACT 71

EXPLORING REFERRALS AND RESOURCE ENGAGEMENT WITHIN A FOOD INSECURITY SCREENING PROGRAM AT A PEDIATRIC CLINIC IN EAST HARLEM, NYC.

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Background: Food insecurity (FI) has a crucial impact on pediatric health. Programs that screen for FI in pediatric populations and offer interventions such as emergency food packages and referrals to community organizations may impact FI and therefore child health. Understanding the characteristics of families who accept or decline resources and the barriers that impede enrollment in services is vital to optimize interventions.

Objective: To examine the cohort and analyze key differences between caregivers who accepted or declined a referral to a community partner, New York Common Pantry (NYCP), and identify barriers to enrolling as clients with NYCP from a pediatric practice in East Harlem, NYC.

Methods: Between 6/21-7/23, study enrollment was offered to caregivers of patients 0-10 years-old who screened positive for FI using Hunger Vital Signs. We collected baseline sociodemographic and referral data at baseline and 3 months. Caregivers completed the USDA 18-item household food security questionnaire (higher scores indicate less food security) at baseline and 3-months. Descriptive statistics were used to evaluate the cohort.

Results: 125 families enrolled, and 116(92%) of the children had public insurance (Table 1). At baseline, the mean USDA score was 4.5 (SD 3.7), 81(71%) scored "low" or “very low” levels of food security, 106(84%) received WIC and/or SNAP and 81(65%) accepted NYCP referrals while 7(6%) were already enrolled. Those who accepted a referral had a higher baseline USDA score (5.0 vs 3.6, p=0.04) and tended to have WIC and/or SNAP at a lower percentage (81% vs 93%, p=0.07) compared to those who declined a referral (Table 2). At 3 months, 30(38%) referred families were enrolled as NYCP clients. Among those who did not become clients, the most common reasons were caregivers not completing enrollment after initial intake with NYCP (49%), and lack of connection with NYCP for initial intake (27%). Only 12% reported losing interest in pantry enrollment (Table 3).

Conclusion: Families with FI who accepted a referral to NYCP had lower food security at baseline compared to those who declined referrals. Furthermore, over 15% of families were not receiving WIC or SNAP at baseline, presenting an opportunity for intervention to improve access to food resources among this population with FI. Future studies will evaluate the impact of onsite enrollment in WIC and SNAP on FI status, as well as the impact of increased case management capacity at NYCP.

ABSTRACT 72

THE INFLUENCE OF ACCESS TO CARE ON RADIATION THERAPY UTILIZATION AMONG OLDER WOMEN WITH BREAST CANCER.

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Background: In 2004, the Cancer and Leukemia Group B (CALGB) C9343 trial compared outcomes among women aged ≥ 70 who had stage I, estrogen-receptor positive (ER+) breast cancer (BC) who received a lumpectomy and hormonal therapy, treated with and without radiation therapy (RT). While the trial found that overall survival was not different between groups, RT use did not significantly decline after its publication. We investigated regional variation in RT utilization in the United States (US) and its association to access to healthcare among women aged ≥ 70 diagnosed with localized ER+ BC after partial mastectomy (PM) between 2004–2020.

Methods: To examine regional variation in the use of RT and its association with access to healthcare, we extracted data from the Surveillance, Epidemiology, and End Results 17 registry. From 2004 – 2020, 105,694 women aged ≥ 70 years who received a PM for localized ER+ BC across 199 US counties with a population > 50,000 were identified. Access to healthcare was measured using six socioeconomic (SES) variables: median household income, % with high school education, % of families above poverty line, % with bachelor's degree, % speaking English, and % employed, measured from 2015-2019. A multivariable linear regression model tested for association between each variable and RT use. A composite SES score was calculated as the sum of z-scores across all six variables and we identified the top 20 and bottom 20 scoring counties. SES score was used as a surrogate for access to healthcare and was correlated to RT use using a linear regression model.

Results: The percentage of women aged ≥ 70 receiving RT after PM for localized ER+ BC varied across counties from 19.0% to 84.6%. In 2004, receipt of RT was similar between the top 20 and bottom 20 counties (67.8% vs 65.2%, respectively). This decreased after publication of CALGB C9343; by 2020 receipt of RT was 58.7% for the top 20 and 49.2% for the bottom 20 SES counties (Table). In linear regression analysis, SES was significantly associated with RT use ($p<0.0001$). In multivariable linear regression analysis, only % above high school education was significantly associated with RT use ($p=0.0205$).

Conclusions: Among women aged ≥ 70 with localized ER+ BC who underwent PM and who were candidates for omission of RT, those who lived in higher SES counties were more likely to receive RT from 2004 – 2020.

ABSTRACT 73

INFLUENCE OF CERVICAL LEVEL FUSED ON SUBSIDENCE OF CAGE AND ALLOGRAPH IN ANTERIOR CERVICAL DISCECTOMY AND FUSION.

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Study Design: Retrospective cohort.

Objective: This study aims to evaluate the relationship between the cervical levels fused and the degree of subsidence following anterior cervical discectomy and fusion (ACDF) procedures.

Background: Subsidence following ACDF may worsen clinical outcomes. Previous studies have linked lower cervical levels with higher rates of subsidence, but none have quantified the relative degree of subsidence between levels.

Methods: Patients who underwent ACDF from 2016 to 2021 at a tertiary medical center were included in this study. Lateral cervical radiographs from the immediate postoperative period and the final follow-ups were used to calculate subsidence. Analysis of variance was used to examine the association between cervical levels fused and subsidence. Multivariable linear regression analysis controlled for age, sex, smoking status, osteopenia/osteoporosis, number of fused levels, cage-to-body ratio, and cage type while examining the relationship between the cervical level fused and subsidence.

Results: This study includes 122 patients who underwent 227 levels fused. There were 16 (7.0%) C3–C4 fusions, 55 (24.2%) C4–C5 fusions, 97 (42.7%) C5–C6 fusions, and 59 (26.0%) C6–C7 fusions. There was a significant difference in the degree of anterior subsidence between cervical levels fused ($P = 0.013$) with a mean subsidence of 1.0 mm (SD: 1.6) for C3–C4, 1.1 mm (SD: 1.4) for C4–C5, 1.8 mm (SD: 1.5) for C5-C6, and 1.8 mm (SD: 1.6) for C6–C7 fusions. Relative to C6–C7 fusions, C4–C5 ($P = 0.016$), and C3–C4 ($P = 0.014$) fusions were associated with decreased anterior subsidence, whereas C5–C6 ($P = 0.756$) fusions were found to have similar degrees of anterior subsidence in the multivariable analysis.

Conclusion: We found upper cervical levels experienced a smaller degree of anterior subsidence than lower levels, after controlling for demographic and implant characteristics. Surgeons can consider using larger cages at lower cervical levels to minimize these risks.

ABSTRACT 74

COMORBIDITY ASSOCIATIONS IN PATIENTS WITH SJÖGREN'S SYNDROME: A CROSS-SECTIONAL STUDY OF THE ALL OF US DATABASE.

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Background: Sjögren's Syndrome (SS) is a systemic autoimmune disease characterized by lymphocytic infiltration of exocrine glands and extraglandular involvement. SS is associated with autoimmune, rheumatic, metabolic, and psychiatric conditions, necessitating a comprehensive understanding of its comorbid burden for optimal clinical management.

Objective: To identify comorbidities significantly associated with SS compared to non-SS patients using data from the All of Us (AoU) database and evaluate implications for diagnosis and management.

Methods: This cross-sectional study used the AoU controlled tier dataset v7, stratifying participants into SS (n = 3,875) and non-SS (n = 406,389) cohorts. Multivariate logistic regression assessed associations between SS and various comorbidities, adjusting for age, sex, race, and coexisting conditions. Adjusted odds ratios (aORs), 95% confidence intervals, and P-values (<0.05) were calculated to determine statistically significant associations.

Results: Autoimmune diseases demonstrated the strongest associations with SS, including systemic lupus erythematosus (aOR = 9.84, 95% CI: 8.92–10.83), rheumatoid arthritis (aOR = 5.13, 95% CI: 4.70–5.58), and systemic sclerosis (aOR = 10.78, 95% CI: 9.03–12.82). Significant associations were also observed for fibromyalgia (aOR = 3.64, 95% CI: 3.33–3.97), psoriatic arthritis (aOR = 3.67, 95% CI: 1.84–6.58), and oral candidiasis (aOR = 2.32, 95% CI: 2.02–2.64). Dermatologic conditions included psoriasis (aOR = 1.44, 95% CI: 1.25–1.65) and alopecia areata (aOR = 1.94, 95% CI: 1.40–2.62). Generalized anxiety disorder was also significantly associated (aOR = 1.12, 95% CI: 1.02–1.23). Notably, essential hypertension was inversely associated with SS (OR = 0.38, 95% CI: 0.35–0.42), while major depressive disorder showed no significant relationship (OR = 1.20, 95% CI: 0.54–2.27).

Conclusion: These findings highlight the complex comorbid burden of SS, aligning with existing literature on its strong associations with autoimmune and inflammatory conditions. However, the inverse association with hypertension and the lack of significance for major depressive disorder contrast with prior studies. This underscores the need for a multidisciplinary approach to SS management, particularly in diverse populations. Future research should address sample size constraints and potential data incompleteness.

ABSTRACT 75

ABORTION OPTIONS FOLLOWING FLORIDA'S 6-WEEK BAN: A WEBSITE CONTENT ANALYSIS OF US ABORTION PROVIDERS.

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Background: After the Dobbs decision, Florida represented a major destination for patients seeking in and out-of-state (OOS) abortion care. However, in May 2024, Florida changed their abortion limit from 15 to 6 weeks, curtailing abortion access for over 50% of abortion patients.

Objective: The purpose of this study was to evaluate what information is available to abortion patients on Florida and OOS abortion facility websites.

Methods: A list of active abortion clinics was compiled from the National Abortion Federation (NAF) directory, the Planned Parenthood directory, the UCSF ANSIRH database, and the Caitlyn Myers Database. Abortion clinics from Florida and the 9 most-visited states by Florida patients were included. Each clinic was summarily reviewed by two separate coders, with a third coder to resolve discrepancies. Florida clinics were assessed for explanations of Florida's new policies (including exceptions), services consistent with the new policies, and resources for accessing OOS. OOS clinics were reviewed for services offered up to 15 weeks, explanations of state policies, and explicit guarantees of abortion services and financial resources for OOS patients. Logistic regression analyses were performed to compare the aforementioned variables between OOS clinics stratified by affiliation and location.

Results: 50 Florida and 448 OOS abortion clinics were included. Most Florida clinics explained the 6-week ban (66%) and its exceptions (54%) and advertised services consistent with these rules (72%), although most unaffiliated clinics did neither. While all Planned Parenthoods and 58% of NAF clinics provided resources for finding OOS care, no unaffiliated clinics did so.

For OOS clinics, 67% explained their state's policies, but less than 50% offered services up to 15 weeks or explicitly guaranteed services for OOS patients. Compared to unaffiliated clinics, Planned Parenthoods (OR = 2.84, $p < 0.01$) and NAF clinics (OR = 7.88, $p < 0.01$) were more likely to guarantee services for OOS patients, as well as to offer financial resources (PP: OR = 4.53, $p < 0.01$) (NAF: OR = 4.84, $p < 0.01$). No significant differences were observed for the aforementioned variables using services up to 15 weeks or states with waiting periods as stratifications.

Conclusion: Most Florida and OOS clinic websites sufficiently explained their state's policies. However, unaffiliated clinics were unlikely to provide support or guarantees for patients seeking OOS care.

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COMMERCIALIZATION STRATEGIES FOR EARLY-STAGE MEDICAL DEVICE STARTUPS: PATHWAYS TO MARKET ENTRY.

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Background: Illuminant Surgical is an early-stage MedTech startup developing a next-generation surgical navigation system to improve surgical accuracy. Due to limited resources to compete in dominated markets, early-stage startups often fail during commercialization preventing their technology from reaching the patient.

Objective: This study investigates two phases of commercialization for MedTech startups through a scoping review and provides actionable recommendations for market entry.

Methods: A two-phase research strategy was employed to better understand the landscape and common commercialization strategies used by MedTech startups. Phase 1: Industry Analysis: A targeted review of reports from McKinsey, JP Morgan, and Deloitte was conducted using Google searches (e.g., "MedTech commercialization strategies"). Ten reports, two white papers, and ten advisor articles were selected based on relevance and credibility. Phase 2: Competitive Analysis: Competitor strategies were examined via the FDA 510(k) Premarket Notification database, BusinessWire press releases, and SEC filings (DEFM14A, 8-K). Additionally, 100 M&A-tagged articles from OrthoWorld were analyzed for acquisition trends, including deal size, company stage, and commercialization milestones. Data consistency was ensured through cross-referencing primary sources.

Results: MedTech commercialization follows phases: Pre- and Post-FDA Clearance, each with distinct strategies for market entry:

Pre-FDA Clearance: Focus on brand positioning through conferences, journal publications, and key opinion leader engagement to build credibility and demand.

Post-FDA Clearance: Shift to direct engagement with hospital decision-makers (C-suite, Value Analysis Committees, surgeons). Three commercialization pathways were identified: 1) Direct Distribution: In-house sales teams maximize control but require high capital; 2) Indirect Sales via Distributors: Partnering with product-focused distributors lowers upfront costs but limits revenue and autonomy, and 3) Indirect Sales via Established MedTech Companies: Leverages established networks but typically follows initial market traction.

Conclusion: Our findings highlight strategic trade-offs, guiding startups in selecting optimal commercialization pathways. MedTech startups should prioritize brand-building pre-FDA and direct distribution post-FDA for maximum value. Next steps include securing pilot sites and building a sales and clinical support team.

ABSTRACT 77

AN ASSESSMENT OF THE UNDERSTANDING AND FEARS OF PATIENTS UNDERGOING UPPER AND LOWER ENDOSCOPIES IN RURAL UGANDA.

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Introduction: Gastrointestinal cancers are a leading cause of morbidity and mortality in Sub-Saharan Africa. Increasing access and utilization of endoscopic procedures is a top priority in the global health sphere. Prior research suggests patients' understanding of their procedure may be a barrier to accessing essential surgical procedures. This study, from Kyabirwa Surgical Center (KSC), an ambulatory surgery center in rural Uganda, examines patients' knowledge and perspective of endoscopy as a potential barrier to participating in endoscopic procedures.

Methods: All KSC patients scheduled for an upper GI endoscopy or colonoscopy were invited to participate in a survey of their demographics, level of knowledge, and subjective opinions regarding their endoscopic procedure. All patients received a standard consultation explaining the procedure and its risks and benefits.

Results: A total of 75 patients were surveyed between August 2022 – January 2023. The average age of the participants was 54 years and 56% (n=42) of participants were women. 92% of patients (n=69) had never had an endoscopy before and 73% (n=55) of patients were scheduled for an Upper GI endoscopy while the remaining 27% (n=20) were scheduled for a colonoscopy. The primary indications for most of the procedures were diagnostic, addressing symptoms such as hematochezia and dysphagia. Most patients had a basic understanding of what an endoscopy is (n=60, 80%) and its diagnostic purpose (n=65, 87%). However few patients knew of the most common side effects (n=11, 15%) or if they would have a surgical scar (n=20, 27%). Overall, 46.7% (n=35) of patients were moderately or severely fearful of getting an endoscopy. Additionally, 45.3% (n=34) of patients were moderately or severely fearful of receiving anesthesia during their endoscopic procedure. Despite this fear, most patients (85.3%, n=64) stated that they understood the benefits of the procedure either very well or extremely well.

Conclusions: Most patients at KSC understood the role that an endoscopic procedure plays in their care and its potential benefits. Despite this, many patients continued to have high levels of fear associated with both the endoscopic procedure and with receiving anesthesia during their procedure. Future patient education should focus on addressing patients' fears as well as the risks of undergoing an endoscopy, which may improve the utilization of surgical services.

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IMPACT OF SOCIAL DEPRIVATION AND DUAL ELIGIBILITY ON POSTOPERATIVE OUTCOMES IN PATIENTS 65 AND OLDER UNDERGOING SHOULDER ARTHROPLASTY.

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Introduction: There has been a rise in anatomic (aTSA) and reverse total shoulder arthroplasty (rTSA) among older adults. While studies have examined outcomes in the Medicare population, the impact of social deprivation remains understudied. This research uses the Social Deprivation Index (SDI) and dual Medicare-Medicaid eligibility to assess how social deprivation affects TSA outcomes nationally, deepening understanding of socioeconomic influences.

Methods: Medicare Limited Data set (2016-2021) identified patients over 65 undergoing elective aTSA or rTSA with inpatient admission. Criteria required Part A+B enrollment for 12 months pre- and postoperatively, with diagnoses of osteoarthritis, rotator cuff issues, or shoulder instability. Socioeconomic status was assessed using the SDI, grouped into three tiers (low 20%, middle 60%, top 20%). Dual Medicaid eligibility was noted. Postoperative outcomes included extended hospital stay, discharge, 30- and 90-day readmission, and 30-day and 1-year complications. Adjusted associations between SDI or dual eligibility were analyzed using mixed-effect generalized linear models, reporting odds ratios (ORs) and 95% confidence intervals (CIs).

Results: Overall, 162,100 patients (42.64% male, 57.36% female) were included, with 30.63% undergoing aTSA and 69.37% rTSA. Medicaid eligibility was 5.09%. Patients in the least deprived SDI group had lower odds of extended stay (OR: 0.88), 30-day (OR: 0.94) and 90-day readmissions (OR: 0.93), and 30-day complications (OR: 0.83). The most deprived group had higher odds of 30-day complications (OR: 1.14). Dual Medicare-Medicaid eligibility increased risks for extended stay (OR: 1.87), PAC discharge (OR: 2.62), 30-day (OR: 1.51) and 90-day readmissions (OR: 1.59), 30-day complications (OR: 1.34), and 1-year complications (OR: 1.38), all with $P<0.0001$.

Conclusion: This study underscores integrating social determinants of health into surgical planning for older adults undergoing shoulder arthroplasty to reduce disparities and improve outcomes. Higher county-level social deprivation and dual Medicaid eligibility are linked to poorer outcomes, with patient-level indicators showing stronger associations.

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HOW BEST TO TREAT MEDIUM SIZED VESTIBULAR SCHWANNOMAS: RADIOSURGERY VERSUS SURGICAL RESECTION FOR 2 TO 2.5CM TUMORS.

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Background: Vestibular schwannomas are common benign skull base tumors that can cause hearing loss, tinnitus, vertigo, and facial nerve dysfunction. As these tumors grow, risks increase for brainstem compression, hydrocephalus, and death. Treatment options vary based on tumor size and symptom severity. Radiosurgery is less invasive than surgical resection but has limited efficacy for larger tumors, with a guideline limit of 2.5 cm to avoid brainstem edema. The treatment choice for medium-sized tumors (2–2.5 cm) remains unclear with current guidelines. Post-treatment outcomes were assessed to determine whether radiosurgery or surgical intervention should be recommended.

Methods: This retrospective cohort study at a single institution included patients treated for acoustic neuroma from 2009 to 2020. Data on demographics, symptoms, tumor characteristics, treatment details, post-treatment complications, and comorbidities were collected. Post-treatment outcomes were assessed within one year of treatment, including: vertigo, tinnitus, facial palsy, and paresthesia. Patients with tumors measuring 2.0–2.5 cm were analyzed using Chi-squared tests and t-tests.

Results: Among 62 patients, 46.8% (n=29) underwent surgery, and 22.6% (n=14) had radiosurgery. No significant differences were found ibn preoperative or postoperative symptoms overall. Surgery and radiosurgery differed significantly in hospital stay length (4.04 vs. 0.33 days; $p<0.001$), age at diagnosis (50 vs. 64 years; $p<0.001$), and rates of post-operative facial palsy ($p<0.001$). Surgery led to 14 new cases of facial palsy but exhibited trends to higher rates of vertigo (81.8% vs 16.7%; $p=0.06$) and tinnitus (45.4% vs 0%; $p=0.03$) remission.

Conclusions: Both treatments have advantages and limitations for medium-sized vestibular schwannomas. Surgery is better for vertigo and tinnitus reduction but has higher risks of facial palsy and longer recovery. Radiosurgery presents fewer complications but is less effective for symptom control. More research is needed to guide treatment for these tumors.

ABSTRACT 80

IMPLEMENTING VALUE-BASED CARE IN FEDERALLY QUALIFIED HEALTH CENTERS: CHALLENGES, BEST PRACTICES, AND POLICY RECOMMENDATIONS.

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Introduction: Yuvo Health supports Federally Qualified Health Centers (FQHCs) in transitioning from a fee-for-service (FFS) to a value-based care (VBC) model, which ties reimbursement to care quality rather than service volume. While VBC has the potential to improve patient outcomes and reduce healthcare costs, FQHCs have been slow to adopt it due to financial constraints and risk aversion.

Objective: This study examines key challenges and strategies for VBC implementation in FQHCs through insights from Yuvo Health employees. Findings aim to inform policies and operational strategies to support this transition.

Methods: Five semi-structured interviews were conducted with Yuvo Health employees from care management, analytics, risk, and performance departments, all with VBC experience. Virtual 30-minute interviews focused on goals, challenges, and long-term strategies for implementing VBC in FQHCs.

Results: Key themes were identified amongst the interviews regarding challenges and strategies for VBC implementation. Barriers to adopting VBC included resource constraints: 4/5 interviewees emphasized the lack of adequate personnel, technology, and financial resources as major barriers. 3/5 interviewees stressed the importance of patient participation particularly when social determinants of health are involved. 3/5 pointed to the lack of awareness and understanding of VBC among both healthcare professionals and the public. Recommendations for the future included increased funding and resources: 3/5 called for more funding to support FQHCs in hiring staff, investing in technology, and enhancing infrastructure. 2/5 emphasized the need for government policies that incentivize VBC and mandate a shift away from FFS. 2/5 highlighted the need for strategies that address social determinants of health and empower patients to participate actively in their care. 2/5 emphasized the importance of raising awareness and educating both healthcare professionals and the public about VBC.

Conclusion: Transitioning FQHCs to VBC requires addressing financial, operational, and awareness barriers. Integrating VBC training in medical education can close knowledge gaps and enhance patient engagement. Targeted policies that incentivize or mandate a shift from FFS to VBC will encourage adoption and mitigate financial risk. Addressing social determinants of health, increasing funding, and further research on scalable strategies remain crucial for sustainable VBC implementation.

ABSTRACT 81

EXAMINING PROVIDER LEVEL DIFFERENCES IN LABOR LENGTH AMONGST AN NTSV COHORT.

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Objective: Length of labor is an important metric used to characterize a labor course and guide clinical decision-making. Here we examined disparities in labor length between provider groups among a cohort of nulliparous, term, singleton, vertex (NTSV) pregnancies. Secondarily, we analyzed associations between length of labor and the incidence of cesarean delivery (CD), to elucidate the effect of labor length.

Methods: A retrospective analysis of all NTSV deliveries between 12/2019 and 2/2020 was conducted at an urban academic medical center in NYC. Scheduled CDs were excluded. Five provider practice groups were identified and were as follows: Midwifery, MFM Specialist, Faculty Practice Private, Hospital-Employed Laborist, Non-faculty Practice Private. Labor progression was followed by extracting time points from the electronic medical record. Analysis of Variance (ANOVA) examined differences in mean labor measure lengths among the provider practice groups. Multivariable logistic regression models examined associations between these measures and mode of delivery, while adjusting for maternal age at delivery and associated covariates.

Results: A total of 862 NTSV patients underwent a trial of labor during the study period; 299 (34.7%) delivered via CD with 69 (23.1%) reaching full dilatation. Patients cared for by the laborist obstetric group had a longer average second stage of labor compared to any other practice-type group (4.1 hrs, SD 1.1, $p = 0.03$). Mean lengths of the second stage of labor were similar amongst the four other provider groups, ranging from 3.5 to 3.7 hrs, SD 1.2-1.6.

Patients who delivered via CD had significantly shorter average lengths of time from admission to delivery, admission to epidural and length of second stage of labor ($p < 0.001$). In the multivariable models, longer time from admission to epidural resulted in lower odds of CD (0.96, 95% CI 0.93, 0.996). Importantly, a longer second stage of labor was associated with a significantly lower likelihood of CD (aOR 0.39, 95% CI 0.30, 0.50).

Discussion: Among a NTSV cohort, disparities exist between provider practice-level groups regarding length of labor. Additionally, we establish that longer second stages of labor are associated with lower odds of cesarean delivery. These insights may guide provider and institutional efforts to reduce CD and improve patient outcomes. Further research should examine the perinatal health consequences of these disparities.

ABSTRACT 82

DO LEG-FOCUSED EXERCISES IMPROVE ARM AND HAND FUNCTION FOR INDIVIDUALS WITH NEUROLOGICAL DISORDERS? A SCOPING REVIEW.

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Background: Interlimb coupling between arms and legs involves spinal neural circuits that help regulate posture and coordinate movements. While several studies have explored using arm exercises to aid leg rehabilitation after neural injury, less attention has been given to the reverse: using leg exercises to improve arm function.

Objective: This scoping review summarizes existing literature on this potential therapeutic strategy for individuals living with neurological conditions.

Methods: We conducted an article search across five databases (PubMed, Embase, CINAHL, Scopus, Cochrane Central), along with secondary references and nine grey literature databases (Google Scholar, medRxiv, ANZCTR, EU-CTR, Clinicaltrials.gov, WHO Library, WHO-GIM, WHO-ICTRP, ProQuest) from 01/01/1947 to 11/29/2023. Included sources targeted human adults with neurological conditions conducting leg-focused exercises with an arm-specific outcome measure. All were written in English. At least two reviewers independently screened all articles.

Results/Discussion: A total of 13 studies met review criteria: 12 research studies and 1 inactive clinical trial. Studies involved 6 to 101 participants living with deficits due to stroke or Parkinson's Disease. Participants performed various leg-focused exercises from a single session up to 100 sessions, followed by assessments that included tests of upper extremity function. The clinicaltrials.gov registered study was not further considered due to the lack of detail on arm-specific outcomes. Six of the remaining 12 studies showed benefit of leg exercise on arm function; mostly as incidental findings. This scoping review highlights a gap in research regarding the use of leg training to activate arm motor circuits. Future research should explore this approach as a novel method for neurorehabilitation.

ABSTRACT 83

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

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Purpose: Anastomotic stricture is a common pediatric complication following esophageal atresia (EA) repair, requiring endoscopic therapies such as dilation, intralesional steroid injection, and electrocautery incisional therapy (EIT). Stricture response to these interventions is unpredictable, often necessitating repeated procedures. Existing stricture classification tools focus solely on diameter and lack predictive capability for therapy response. We developed a novel stricture classification tool that considers multiple physical characteristics, and we evaluate its predictive capability in pediatric anastomotic strictures.

Methods: An IRB-approved retrospective review at Boston Children's Hospital included 70 pediatric EA patients with at least two endoscopies. Before intervention, the stricture classification tool is used and the endoscopist scores the stricture at the beginning of each endoscopy according to its starting diameter, length, and degree of intrusion of the anastomotic scar band in 4 quadrants around the circumference of the anastomosis. Diameter changes (ΔD mm) between procedures were normalized to follow-up intervals and used to evaluate therapeutic effectiveness.

Results: Mixed-effects regression analyses were performed. The study included 148 scored endoscopies. Multivariable analyses showed stricture symmetry and scar intrusion were significantly associated with therapeutic effectiveness. Both stricture symmetry and stricture intrusiveness correlated with larger gains in diameter over time ($p=0.03$, $p=0.02$, respectively). In an EIT subgroup univariate analysis, starting diameter, steroid injection treatment and symmetry were each associated with significant changes in diameter over time ($p=0.001$, $p=0.01$, $p<0.001$, respectively).

Conclusion: Understanding the impact of readily ascertainable physical features of stricture on that stricture's behavior can help clinicians predict how a stricture will respond to endoscopic therapy. Symmetry and scar protuberance emerged as key predictors, highlighting the importance of tools that aid the endoscopist to create personalized treatment strategies for esophageal anastomotic stricture. Further large-scale, prospective randomized studies are needed to confirm these findings.

ABSTRACT 84

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

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Background: Sexual dysfunction is prevalent among breast cancer patients, and preserving sexual health is vital for overall well-being and quality of life. While radiotherapy (RT), a key component of breast conservation, has been linked to sexual toxicity, the contribution of RT on the nipple-areolar complex (NAC) to sexual toxicity has not been explored. This study examined the relationship between cumulative RT dose and NAC function during sexual activity, using patient-reported outcomes, to inform clinical care and improve quality of life following cancer treatment.

Methods: Adult female and gender-diverse patients who received local RT for breast cancer ≥ 12 months prior, reported breast-involved sexual activity in the last 30 days and completed the Breast Sensorisexual Function (BSF) questionnaire were included in this study. BSF items allowed participants to rate measures of function (satisfaction with sensation, pleasure from contact) and dysfunction (pain, discomfort) on a 5-point Likert scale. Dosimetric parameters D95%, D50% and D2% were extracted, representing the minimum dose to the most irradiated 95%, 50% and 2% of the NAC. Correlations with function and dysfunction were evaluated with Spearman's correlation coefficient (Rs) as follows: strong ≥ 0.6, moderate 0.4–0.59, weak 0.2–0.39.

Results: 42 sexually active participants, with a mean cumulative D50% of 39Gy (SD 8Gy), were included in this analysis. Among the participants, 70% reported suboptimal (some, little or no) satisfaction with the sensation in their breasts, while 40% reported minimal or no pleasure from contact during sexual activity. Additionally, 24% of participants reported experiencing discomfort or pain. D95% demonstrated a moderate negative correlation with satisfaction with sensation (Rs = -0.46), while D50% showed a weak negative correlation (Rs = -0.38) and D2% showed no correlation. D95% alone exhibited a weak negative correlation with pleasure from breast contact (Rs = -0.32). Weak correlations were also observed between D50% and D2% and reports of breast discomfort (Rs = 0.38; Rs = 0.22) and pain (Rs = 0.33; Rs = 0.24), whereas D95% showed no correlation.

Conclusions: These preliminary findings suggest a potential relationship between higher RT doses and changes to breast sensorisexual function. This study represents an initial step toward clarifying the impact of RT on sexual function in breast cancer patients.

ABSTRACT 85

DESIGNING AN INCLUSIVE ENROLLMENT PROCESS FOR AN IMMIGRANT COMMUNITY HEALTH PROGRAM.

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Background: Medical care in the US often concerns immigrants, especially undocumented ones, due to limited insurance. This is especially true in New York City, home to a diverse immigrant population. To address migrants' primary care and social needs, the MAPS program (Migrant Access to Primary Care & Social Support) was created at NYC Health + Hospitals/Elmhurst in collaboration with two local community-based organizations (CBOs) - Voces Latinas and Make the Road NY. The primary care goals of MAPS are to improve overall health outcomes through timely access to primary medical care, which will be accomplished through healthcare navigation and access to social services. The social service goals are connecting individuals to ancillary healthcare, legal, employment, and food services while integrating them into an existing immigrant community. At the end of the program, MAPS will conduct a retrospective analysis to measure health outcomes.

Objective: The goal of this project was to design the eligibility criteria and inclusive intake process for the MAPS program.

Methods: The eligibility criteria were established to be recently immigrated adults and children with chronic medical conditions and significant social needs. Through research and team conversations with our CBO collaborators, an intake form was created to screen for the eligibility criteria and common concerns of immigrants. Due to the recent rise in Latin immigrants, a job description was made for a Spanish-bilingual hospital navigator to help participants address appointments, billing, and medication issues and aid navigation between hospital and CBOs. After completing these, a flyer was made to recruit participants. To aid recruitment of up to 200 participants, a flyer was created which will be disseminated in high-traffic areas and through the help of the CBOs.

Reflections: Challenges that came up during the creation of the intake form included establishing objective ways of evaluating social needs, deciding what medical conditions to include, being descriptive yet concise, and not overlooking commonplace immigrant concerns. There were also concerns about reaching the eligible population. The CBOs were critical in navigating and overcoming these challenges.

Conclusions/Future Plans: The participants will be monitored over the next year, during which their needs will be addressed. A retrospective analysis will evaluate health outcomes at the program's conclusion.

ABSTRACT 86

A QUALITATIVE ANALYSIS OF THE BARRIERS TO AND FACILITATORS OF ACCESSING IMMUNOTHERAPY FOR TRIPLE NEGATIVE BREAST CANCER FROM THE PERSPECTIVE OF SURGICAL ONCOLOGISTS.

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Background: Triple-negative breast cancer (TNBC) is an aggressive and difficult-to-treat type of breast cancer. Immune checkpoint inhibitors (ICIs) targeting programmed death-ligand 1 have improved pathological complete response rates to chemotherapy in patients with high-risk, early-stage, or metastatic TNBC. However, ICIs are less likely to be administered to low-income, uninsured, or African American patients. We interviewed surgical oncologists about barriers to and facilitators of TNBC ICI access since they are often patients' first point of contact.

Methods: Surgical oncologists (N=11) treating NYC metropolitan area breast cancer patients were recruited from March 2020 to September 2023 for 20–30-minute audio-recorded, semi-structured interviews about immunotherapy access. Audio recordings were transcribed and checked for errors. Three coders independently coded each interview and met to reach consensus on themes. Reporting of findings followed the Consolidated Criteria for Reporting Qualitative Research (COREQ).

Results: Surgical oncologists represented diverse backgrounds (Black n=2, White n=8, Other/Hispanic n=1) and settings (academic medical center n=7, public hospital n=4). Six themes emerged: (1) Visa status as a deterrent to ICIs and an incentive for invasive surgeries, N=3; (2) ICI potential to increase breast-conserving surgery, N=1; (3) Need for pre-surgical assessment of endocrine side effects from ICIs, N=1; (4) Need for ongoing training about recently FDA-approved ICIs, N=5; (5) Clinician bias against educating patients with low health literacy about ICIs, N=4; (6) Variability in surgeons' perception of their role in treating patients with ICIs, N=2. Themes did not differ by surgical oncologist demographics.

Conclusion: Themes revealed barriers to ICI access that ranged from societal (e.g., immigration policy) to clinician (e.g., surgeon knowledge) levels. Results highlight a need for proactive navigation support for patients with visas, ongoing ICI education for surgical oncologists, patient education on ICIs tailored to health literacy, and clear training on the surgical oncologist's role in treating patients receiving ICIs. Future directions include creating a survey to quantify the prevalence of these barriers and facilitators among a larger sample of surgical oncologists.

ABSTRACT 87

CREATING A SAFER AND MORE INCLUSIVE MOUNT SINAI FOR PEOPLE WHO USE DRUGS.

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Stigma and discrimination toward people who use drugs (PWUD) is pervasive and continues to inflict harm in both the Mount Sinai and US healthcare system at-large. This harm often manifests in the hospital setting, including oppressive hospital policies toward PWUD, negative perceptions of PWUD among healthcare providers, stigmatizing language and stereotypes being used in documentation, and inequitable and unequal care toward PWUD. Instead of promoting understanding, shared decision making and collaboration, hospital policies regarding PWUD—including Mount Sinai's—often emphasize punitive measures and restrictions, limitations to autonomy, denial of healthcare, criminalization of patients with substance use history, and the escalation of policing, adversarial interactions, and surveillance; this ultimately transforms the hospital into a carceral environment that furthers mistrust in healthcare, erodes patient-provider relationships, and increases OUD burden. Clearly, addressing hospital-based discrimination and stigma toward PWUD and drug use is urgent. Thus, we conducted an assessment and revision of current Mount Sinai policies on in-hospital substance use. Review of Mount Sinai policy on in-hospital substance use from the 1980s to today found a preference for increased surveillance, reliance on biases, and enforcement as opposed to medical management as first-line measures. As such, a new policy that emphasizes harm reduction and patient-first approaches was drafted and is currently under review by Mount Sinai Hospital and Legal Action Center.

ABSTRACT 88

PREDICTION AND EFFECT OF ELEVATED INTRAOPERATIVE MEAN PULMONARY ARTERIAL PRESSURE DURING LIVER TRANSPLANT.

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Introduction: Liver transplantation (LT) is contraindicated in patients with a mean pulmonary arterial pressure (mPAP) ≥ 35 mmHg due to >90% mortality risk. Despite transthoracic echocardiography (TTE) screening for portopulmonary hypertension (PoPH), some LT recipients exhibit intraoperative mPAP ≥ 35 mmHg. This study examines whether preoperative hemodynamic data can predict intraoperative mPAP elevation and its impact on intraoperative hemodynamics and outcomes.

Methods: This retrospective study included adult liver-only or liver-kidney transplants at our institution (August 2019–May 2024), excluding repeat transplants, patients <18 years, fulminant liver failure, or multiorgan transplants. Demographic, lab, and clinical data were collected. Patients were classified as elevated mPAP (≥35 mmHg prior to incision) or controls. Primary outcomes included preoperative TTE and right heart catheterization (RHC) findings, postreperfusion syndrome, perireperfusion vasopressor use, and case cancellation. Secondary outcomes included need for milrinone/nitric oxide (NO) therapy and TTE findings. Statistical analyses included chi-square, t-tests, logistic regression, and negative binomial regression ($p<0.05$ significant).

Results: Of 659 patients, 102 had elevated mPAP. This group exhibited higher median RVSP on TTE (36.0 vs. 28.0 mmHg, $p<0.001$) and mPAP on RHC (30.0 vs. 22.0 mmHg, $p=0.005$). They also had increased rates of case cancellation (6.9% vs. 0.4%, $p<0.001$), postreperfusion syndrome (38.2% vs. 27.9%, $p=0.014$), milrinone use (10.8% vs. 2.1%, $p<0.001$), and NO therapy (6.9% vs. 1.6%, $p=0.006$). They had higher rates of right ventricular dysfunction (8.8% vs. 1.8%, $p<0.001$) and tricuspid regurgitation (13.7% vs. 5.0%, $p=0.002$). However, logistic regression showed no association between elevated intraoperative mPAP and postreperfusion syndrome (OR 1.48, 95% CI 0.85-2.53, $p=0.157$). Adjusted negative binomial models found no association with perireperfusion norepinephrine bolus (RR 0.97, 95% CI 0.58-1.71, $p=0.911$) or infusion (RR 1.25, 95% CI 0.60-2.38, $p=0.530$).

Discussion: RVSP on TTE and mPAP on RHC may predict intraoperative elevated mPAP. Elevated mPAP was correlated with increased case cancellation rates and increased milrinone/NO therapy during LT. The lack of significant differences in postreperfusion syndrome or perireperfusion vasopressor requirements suggests that preoperative testing effectively selected PoPH patients for LT despite intraoperative mPAP.

ABSTRACT 89

HEMATOPOIETIC AGING PROMOTES LUNG CANCER BY FUELING IL-1A-DRIVEN EMERGENCY MYELOPOIESIS.

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Background: Most cancers are diseases of aging. But the lack of an unbiased inquiry into the cellular basis for the link between aging and tumorigenesis has left the study of cancer incomplete. Filling this gap in knowledge could help characterize the early stages of tumorigenesis and aid the design of cancer prevention strategies.

Objective: Non-small cell lung cancer (NSCLC) is strongly associated with aging. As it is the most common cause of cancer-related mortality, we sought to decipher the effect of aging on the host response to NSCLC pathogenesis.

Methods: We combined heterochronic bone marrow transplant studies with an orthotopic model of primary lung adenocarcinoma and single-cell RNA sequencing to generate the first atlas of aging and cancer. We also performed multi-omic profiling of both primary tissue specimens to establish that mechanisms uncovered by our preclinical models are conserved in human cancer.

Results: We show that aging of the immune system, regardless of the age of the stroma, drives lung cancer progression ($p<0.0001$, one-way ANOVA). Hematopoietic aging exacerbates emergency myelopoiesis and results in the extramedullary accumulation of myeloid progenitors in lung tumors ($p<0.0001$, one-way ANOVA). These cells are a primary source of IL-1a that sustains the age-enhanced myelopoietic response in old mice ($p=0.0002$, unpaired student's t-test). Disrupting this feedback loop early during tumor initiation not only slowed tumor growth but also normalized myelopoiesis ($p=0.0004$, one-way ANOVA). We discovered that the increased proclivity of aged myeloid cells to produce more IL-1a is due to an age-associated decline of DNA methyltransferase 3A (DNMT3A) ($p=0.008$, unpaired student's t-test). In patients, we show that emergency hematopoiesis is enhanced with age and cancer stage ($p=0.0045$, one-way ANOVA); from older patients, circulating HSPCs exhibit a decrease in DNMT3A, and immature monocytes produce more IL-1a ($p=0.0636$, unpaired student's t-test). In human lung lesions, we identified an enrichment for monocyte-derived macrophages that act as a major source of IL-1a and is associated with aging ($p=0.0457$, unpaired student's t-test), poorer survival ($p=0.002$, Cox regression analysis), and recurrence of cancer ($p=0.0175$, unpaired student's t-test).

Conclusion: We established that the relationship between aging and the host response to lung cancer is an immunologically-driven one. Our study not only rationalizes an IL-1-based intervention to deter pathogenic myelopoiesis that is worsened with age, but also defines a therapeutic window for such an approach. Our findings have direct relevance to the design of immunoprevention trials and to our understanding of aging, DNMT3A mutation-driven clonal hematopoiesis, and lung cancer.

ABSTRACT 90

EXAMINING ATTITUDES TOWARDS IMPLEMENTING ULTRASOUND EDUCATION ACROSS TRAINING STAGE AND SPECIALTY.

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Research on ultrasound (US) education has increased sevenfold from 2010 to 2020, reflecting increased interest in integrating US training into undergraduate medical education (UME). This study examines attitudes toward optimal timing for expert-developed curricular content implementation across training stages and specialties.

An anonymous online survey was distributed via email at a single academic institution (June-October 2024). Medical students, attending physicians, and residents/fellows in US-intensive specialties (Internal Medicine (IM), Emergency Medicine (EM), Obstetrics/Gynecology (Ob/Gyn) and Radiology) were included. Attending physicians with minimal US use and/or no teaching role were excluded. The survey evaluated attitudes on US education and the optimal learning stage (preclinical, clinical, resident, fellow, or never) for 111 US skills. Students received a simplified version of the physician survey, and all responses were analyzed.

The primary outcome was consensus on optimal timing to learn US skills. Differences across training stages and specialties were also analyzed. Consensus was defined as >50% agreement on a single stage. If no stage exceeded 50%, but the top two responses were sequential (e.g., preclinical to clinical), it was classified as a joint learning stage. Non-sequential top responses indicated no consensus. De-identified data were analyzed using R and Microsoft Excel.

65 attendings, 98 residents/fellows, and 77 medical students participated. Attendings and residents/fellows agreed on 46 of 111 skills (41.4%). When disagreeing (65/111), residents/fellows often (45; 69.2%) chose earlier stages than attendings. Residency was cited 90 times by attendings (81.8%), 64 for residents/fellows (57.7%), and 4 for students (13.3%). Fellowship was chosen for 10 skills by attendings (9%) but never by residents/fellows or students.

There was no consensus across specialties. Ob/Gyn and Radiology physicians favored later stages, with 85.6% and 74.8% of responses indicating residency, and 39.6% and 5.4% fellowship. IM and EM physicians favored earlier stages, with 27.0% and 18.9% of responses indicating preclinical training, and 79.3% and 80.2% clinical training.

Earlier-stage trainees preferred earlier US training, while specialties with technical US applications (OB/GYN, Radiology) favored later stages. These findings reveal varied perspectives on US education and inform efforts to develop a standardized, longitudinal US curriculum in UME.

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CROSS SECTIONAL ANALYSIS OF HIDRADENITIS SUPPURATIVA PATIENTS IDENTIFIES INCREASED RISK OF CARDIOVASCULAR DISEASE WITH RISK REDUCTION WITH BIOLOGIC THERAPY.

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Background: Recent work has suggested that Hidradenitis Suppurativa (HS) is associated with increased inflammation and cardiovascular disease (CVD) outcomes.

Methods: We utilized the TriNetX Research Network, a global database of electronic health records, to conduct a retrospective, cross-sectional case-controlled study. We compared adult patients diagnosed with HS to matched controls without a history of HS and evaluated inflammatory markers (c-reactive protein, erythrocyte sedimentation rate) as well as the odds ratios (OR) for being diagnosed with CVDs. To assess whether biologic use can modulate CVD risk, we also compared outcomes in HS patients treated with biologics to those not on biologics.

Results: We identified a total of 194,691 patients with HS and 194,961 propensity score-matched controls without HS. Patients with HS had an increased odds of atherosclerosis (OR: 1.583, 95% CI 1.499-1.642) cardiomyopathy (OR:1.583, 95% CI 1.469-1.620), acute myocardial infarction (OR: 1.82, 95% CI 1.710-1.905), angina pectoris (OR: 1.578, 95% CI 1.483-1.679), hyperlipidemia (OR: 1.094, 95% CI 1.075-1.112) and chronic ischemic heart disease (OR: 1.55, 95% CI 1.507-1.595) compared to controls. Biologic medication for HS treatment reduced the presence of CVD outcomes in HS patients on Biologics compared to HS patients not on Biologics. We identified a total of 12,474 patients with HS on Biologics and 12,474 propensity score-matched controls with HS not on Biologics. Patients with HS on Biologics had decreased odds of atherosclerosis (OR: 0.778, 95% CI 0.648-0.935), acute myocardial infarction (OR: 0.71, 95% CI 0.581-0.867), angina pectoris (OR: 0.679, 95% CI 0.529-0.871), hyperlipidemia (OR: 0.735, 95% CI 0.687-0.786), and chronic ischemic heart disease (OR: 0.752, 95% CI 0.671-0.843) compared to HS patients not on biologics. Prevalence of patients with elevated CRP (OR: 2.692, 95% CI 2.614-2.772) and elevated ESR (OR: 1.872, 95% CI 1.829-1.916) levels were seen in patients with HS compared to matched controls.

Conclusion: CRP and ESR were significantly elevated in HS patients compared to matched controls. This study identified significant associations between HS and several CVD diagnoses in a large-scale study. Immunomodulatory treatment may significantly reduce CVD in HS patients compared to their matched controls.

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IMAGING BIAS IN CONGENITAL HEART DISEASE: SEGMENTAL LOCALIZATION ANALYSIS OF DISCREPANCIES BETWEEN CARDIAC CT AND CMR.

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Background: Cardiac CT (CCT) is important for anatomic evaluation of patients with congenital heart disease (CHD) prior to pulmonary valve replacement (PVR). However, volumetric and functional criteria for PVR are derived from cardiac MRI (CMR). Systematic differences between CCT and CMR volumes are underexplored in patients with CHD.

Methods: We conducted a retrospective review of CHD patients with CMR and CCT less than 180 days apart. Ventricular volumes were recontoured by blinded experts and global agreement was compared. Right ventricular regional differences in contours were assessed in 12 different segments through coregistration of corresponding 2D SAX slices. Agreement of CCT with CMR-defined criteria for PVR was also assessed.

Results: Twenty-nine patients (mean age 33 years, 48% tetralogy of Fallot, 24% congenital pulmonary stenosis, 83% evaluated for PVR) had average CMR RVEDV 152 mL/m^2, RVESV 80 mL/m^2, RVEF 49%, and RVEDV:LVEDV 1.86:1. CCT measured significantly higher RVEDV (mean difference (MD) +17 mL/m^2), RVESV (MD +17 mL/m^2), and RVEDV:LVEDV (MD +0.1) with no difference in stroke volume. There was also significantly lower RVEF (MD -5%) by CCT. The greatest difference in contours originated from the basal and mid-inferior RV. CCT had 90 to 100% sensitivity/NPV to identify CMR-defined RV PVR thresholds, but had lower specificity and PPV.

Conclusion: CCT measures higher RV volumes and lower EF compared to CMR (i.e. more adversely-remodeled). Given that differences originate primarily from the basal and inferior RV, mechanisms may include inferior stretch due to differences in breathing-instruction, volume load from CT contrast, and misidentification of end-systole. CMR-derived PVR thresholds applied to CCT would lead to more proactive intervention. “Adjusting” CCT volumes by the observed difference between modalities is a reasonable approach. These findings highlight the need for CCT-specific volumetric recommendations for PVR.

ABSTRACT 93

MAPPING ENVIRONMENTAL EXPOSURES IN NEW YORK CITY.

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Background: The exposome is a measure of one's environmental and occupational exposures, particularly those that harm health. New York City (NYC) is subject to polluted air, hazardous materials, toxic chemicals, and pests. Resulting health manifestations include asthma, COPD, and heart disease. Though holistic markers of environmental risk (PM2.5) are commonly analyzed, this study aimed to map specific sources of exposure unique to NYC.

Research Question: What are the patterns of environmental exposure across NYC?

Methods: We consulted members of the Community and Household Infant-Maternal Exposure Study (CHIMES) Community Advisory Board (CAB) about unique environmental exposures they believed to negatively impact health in NYC. We obtained publicly available census-tract level datasets for air, chemical, traffic, and waste exposures. We then ran a latent class analysis (LCA) with the *Mclust* package in R to define subclasses of census tracts with distinct exposure patterns. We fit models with 3–6 classes and identified the best fit by BIC and ICL parameters.

Results: We identified 5 latent classes amongst NYC census tracts as the best fitting model. Socioeconomic disadvantages are highest in Class 3 and lowest in Class 1. Classes 4 and 5 experience greater exposures from industrial sites, autobody repair shops, waste management sites, and hazardous waste-releasing sites. Classes 3 and 5 are closer to traffic and transportation exposures (airports, above-ground subway stops, etc.) and have higher rates of indoor air pollutants (lead, mold, kerosene fuel). Outdoor air quality is poorest in Classes 1 and 5, which also have the least greenspace. "D" redlined housing presence is lowest in class 2, the least notable for high exposures of any kind. Manhattan appears to be mostly Class 1. The Bronx appears to be mostly Class 3. Brooklyn and Queens fall into a mix of Class 2 and 4. Staten Island is predominantly Class 4.

Conclusions: Environmental exposures appear to be distributed by place of residence, with poorer neighborhoods more highly exposed to toxicants like industrial sites, toxic waste, above-ground subway stations, mold, and lead. Exposures are also linked to historic redlining, suggesting that racist policies have shaped exposures over generations. Next steps in this study will evaluate associations between class membership and health outcomes data, which, if found, would emphasize an urgent need for policy to address environmental exposures.

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DEMOGRAPHIC ANALYSIS OF HOSPITAL AT HOME.

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Background: The Center for Medicare and Medicaid Services (CMS) enables hospitals to provide inpatient-level care at home through Acute Hospital Care at Home (AHCAH). A CMS report on 9/30/24 revealed demographic differences between AHCAH patients and traditional inpatients from the same hospitals. AHCAH patients were more likely to be white and less likely to be Medicaid recipients. We examined the demographics of patients participating in our institution's Hospital at Home (HaH) to assess if similar disparities are observed.

Methods: 744 patients were admitted to HaH from 11/1/2023 to 10/31/2024. We analyzed HaH patient demographics, including age, race/ethnicity, preferred language, and primary/secondary Medicaid insurance. We compared these results to the demographics of our institution's brick-and-mortar inpatients using a two-proportion z-test.

Results: The analysis of patients transferred into HaH revealed the following demographic characteristics: mean age of 68 years; 28% self-identified as White, 20% as Black, 35% as Hispanic, 7% as Asian, and 11% as Other; 26% indicated a language preference other than English; and 20% of patients' primary insurance is Medicaid, with 44% of patients covered by primary/secondary Medicaid insurance.

Analysis of patient demographics between HaH patient and our health system's brick-and-mortar inpatient populations revealed different results to the CMS report. For race/ethnicity, among inpatients 36% identified as White (vs 28% HaH), 14% Black (vs. 20% HaH), 17% Hispanic (vs 35% HaH), 7% Asian (vs 7% HaH) and 26% Other (vs 11% HaH). HaH had a higher proportion of Hispanic patients ($Z=12.4$, $P<0.001$) and Black patients ($Z=5.3$, $P<0.001$) compared to our inpatient population. Significantly more HaH patients (26%) indicated preference of a language other than English vs inpatient (13%) ($Z=7.5$, $P<0.001$). There was no statistically significant difference in the proportion of patients with primary Medicaid insurance with 20% HaH patients vs 18% inpatients ($Z=1.3$, $P=0.197$).

Conclusion: Our findings differ from CMS, with HaH demographics reflecting our health system's overall demographics/high-need patient base and also demonstrating a more diverse patient population in HaH compared to our health system. Our HaH patient population reflects the diversity of the neighborhood served by our institution and is accessible to individuals with limited resources, supporting the feasibility of providing HaH care to diverse and low-resourced patients.

ABSTRACT 95

EVALUATING THE EFFECTIVENESS AND STRUCTURE OF THE LIVING WITH LOSS SERIES: A PROGRAM EVALUATION.

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Background: Grief can significantly impact emotional well-being, often leading to isolation, anxiety, and difficulty managing daily life. These challenges are particularly pronounced in communities with limited mental health resources. The HOPE Center in East Harlem developed the *Living with Loss* series, a structured grief support group, to address these concerns. Given the need for such services in underserved areas, evaluating the program's effectiveness and identifying areas for improvement was essential. This study assessed the program's impact on reducing isolation and enhancing coping strategies among participants.

Research Question: How did participants perceive the *Living with Loss* series in reducing feelings of isolation and improving coping mechanisms? Additionally, how might the program's structure be improved to better meet participant needs?

Methods: Nine women who had experienced the loss of a loved one participated in the study after completing the *Living with Loss* series. The eight-session program, facilitated by a licensed psychologist, focused on themes such as emotional triggers, self-care, and journaling. Semi-structured interviews were conducted, audio-recorded, and transcribed using a combination of manual transcription and the iPhone *Voice Memos* application. Thematic analysis was used to identify key themes.

Results: Participants valued the group setting for reducing loneliness and fostering connection. One shared, *"You feel alone in your grief… But then, to hear other people experiencing grief in different ways… It was very helpful to feel like you have a community."* Journaling was also impactful, as another noted, *"I shared things in the group that I have never shared with anyone. When I shared that, I slept like a baby because I did not realize how much weight I was holding."*
However, some felt the sessions were too short, making it difficult for everyone to share. Suggestions included extending session length and implementing more structured facilitation.

Discussion: The *Living with Loss* series effectively reduced isolation and improved coping strategies. Participants appreciated the group setting, journaling, and shared experiences. While concerns about time management and facilitation were noted, the program was generally seen as beneficial. Future iterations could consider extending session length and refining facilitation and number of participants to ensure all participants have adequate time to share.

ABSTRACT 96

MAPPING GLUT2 AND PDX1 REGULATION IN PANCREATIC BETA CELLS BY HARMINE RESPONSIVE ELEMENTS.

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Background: Diabetes affects over 38 million people in the US, and its prevalence is rapidly increasing. Our country has a pressing need for new diabetes therapies. Pancreatic beta cell mass and function are diminished in both type 1 and type 2 diabetes. Our lab has shown that harmine, a small molecule DYRK1A inhibitor, induces higher rates of human pancreatic beta cell proliferation than occurs during neonatal development, and unique to harmine among the DYRK1A inhibitors, promotes beta cell differentiation. Of the beta cell marker genes that increase with harmine treatment, pancreatic and duodenal homeobox 1 (PDX1) and solute carrier family 2 member 2 (SLC2A2 aka “GLUT2”) are the most dramatic, with 5- and 15-fold increases, respectively. GLUT2 is a transporter essential for glucose sensing and PDX1 is a master regulator of beta cell identity and the major regulator of GLUT2. These proteins warrant further study to elucidate the mechanism of differentiation induction by harmine. Increasing the number and quality of pancreatic beta cells could have enormous therapeutic potential for people with diabetes.

Research Objective: To identify the region(s) of the promoter of the PDX1 gene - a transcription factor for SLC2A2 and master regulator of pancreatic beta cell identity - that is required for harmine to initiate its transcription and upregulation.
- To identify the co-regulators with action at the promoter regions identified.

Methods: We built luminescent reporter constructs with promoter regions from PDX1 and SLC2A2 on the pGL4.20 luciferase plasmid using PCR selection and restriction endonuclease cloning. We focused on the PDX1 construct as the upstream regulator. We transfected INS1 cells, a rat insulinoma cell line, with the constructs and treated them with harmine. We then measured gene activity by luminescence microplate reader. We identified the areas of highest activity by PCR-directed deletion mutagenesis and repeated transfection, treatment, and luminescence measurement.

Results: We confirmed that four areas of the PDX1 promoter, previously described in the literature, are most active in driving gene expression after harmine administration. While area IV, the furthest upstream of the PDX1 gene, showed initial promise, none of the areas emerged as the strongest single driver of PDX1 activity. Our results are limited by using mouse cell lines, so future research could focus on human pancreatic beta cells and PDX1 mutagenesis by CRISPR or viral infection.

ABSTRACT 97

CD4+, CD8+ TCR-GD+ CUTANEOUS T-CELL LYMPHOMAS SHOW DISTINCT BIOMARKER PROFILES IN SINGLE-CELL ANALYSES.

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Primary cutaneous T-cell lymphomas (CTCL) display a high degree of clinical and transcriptomic heterogeneity between patients, making the detection of relevant biomarkers difficult. To overcome this challenge, we performed intra-patient comparisons of the top expanded clone versus the remaining TCR+ polyclonal infiltrate in a single-cell RNA sequencing dataset, that spanned lymphomas of CD4+ (n=7), CD8+ (n=4) and TCR-γδ+ (n=7) malignant T-cell phenotypes. With this method, we were able to identify genes that were mutually upregulated or downregulated across cases. In CD4+ MF, we found consistent upregulation of three genes—GTSF1, previously associated with advanced-stage CTCL and type 2 polarization of malignant clones; NME1, an endonuclease encoding gene linked to T-cell activation; and CDCA7, which has been implicated in malignant lymphoid tumor growth. Conversely, eight genes were consistently downregulated, including BTG1 and TXNIP, both of which are involved in the negative regulation of cell proliferation, as well as FTL, CYTOR, GBP5, and GSTP1, the latter being a tumor suppressor frequently hypermethylated in multiple malignancies.

Among CD8+ aggressive epidermotropic cytotoxic T-cell lymphoma samples, no common upregulated genes were observed, but four genes were consistently downregulated: SELL, IL7R, CD4, and THEMIS. THEMIS downregulation was further validated by analysis using ARCHS4, a platform for mining publicly available RNA-sequencing datasets, which revealed that genes co-expressed with THEMIS—including CD8A, CD8B, GZMA, GZMB, GZMH, PRF1, KLRB1—are strongly associated with cytotoxic T-cell populations. Additional THEMIS-co-expressed genes, such as CD28, CD2, TIGIT, GZMK, and SH2D1A, were also found to be mutually downregulated across most, but not all, Berti's lymphoma samples, suggesting a role in CD8+ T-cell maintenance and function.

In TCR-γδ+ MF malignant clones, we observed a distinct expression pattern characterized by upregulation of GNLY, a cytotoxic peptide; IL32, a proinflammatory cytokine that may support malignant T-cell survival; and TRDC, consistent with the expected TCR-γδ+ phenotype. Downregulation of CD2 and CD7, markers of normal T-cell lineage, was also noted.

These findings provide insights into the molecular heterogeneity of CTCL subtypes and uncover recurrent gene expression patterns that may contribute to disease progression and potential therapeutic targets.

ABSTRACT 98

CHARACTERIZATION OF CEREBRAL ATROPHY IN PATIENTS UNDERGOING MINIMALLY INVASIVE ICH EVACUATION.

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Introduction: Intracerebral hemorrhage (ICH) is especially lethal and has a 40% mortality rate at 1 month. Minimally invasive surgical treatment (MIS) has increasingly emerged as a treatment modality for certain patients.

Hypothesis: While patients with intracerebral hemorrhage experience an accelerated rate of cerebral atrophy following hemorrhage, the cerebral atrophy rate of patients treated with MIS has not been quantified and is integral to correctly identifying, triaging, and treating high-risk patients for MIS.

Methods: The study will include 226 adult patients aged 18 years or older who presented with ICH between December 2017 and 2021 at the Mount Sinai Health System (New York, NY) and underwent MIS. Data will be accrued through review of retrospectively recorded institutional registries and patient radiographic reports. Cerebral volume and atrophy will be calculated using volumetric segmentation software (3D Slicer). Additionally, operative details of hematoma evacuation will be included. Descriptive statistical analysis will be performed using R version 4.3.1.

Results: 30 patients were initially identified with a longitudinal radiographic followup of 116 scans. The mean preoperative hematoma volume was 43.76 ± 28.04 mL, and mean postoperative hematoma volume was 8.83±13.32 mL. The mean preoperative cerebral volume was 1,256.17 ± 155.01 mL and mean postoperative cerebral volume was 1,230.01±149.33 mL. The postoperative followup to baseline cerebral volume ratio was 0.99±0.03. The cerebral brain volume (CBV) was 1,204.10±134.00 mL at three months, and the follow-up to baseline volume ratio (CBVr) was 0.96±0.06 (n=19). The CBV was 1,139.35±177.48 mL at six months, and the CBVr was 0.95±0.08 in (n=7). The CBV was 1,146.28±128.62 mL at six to twelve months, and the CBVr was 0.97±0.07 (n=5). The CBV was 1,226.24±151.86 mL at twelve months, and the CBVr was 0.95±0.04 (n=8). The CBV was 1,224.77±188.79 mL at twelve to twenty-four months, and the CBVr was 0.91±0.02 (n=6). The CBV was 1,168.14±121.37 mL at twenty-four months, and the CBVr was 0.94±0.04 (n=8). After twenty-four months, the CBV was 1,238.24±145.93 mL, and the CBVr was 0.95±0.05 (n=5).

Conclusion: Volumetric segmentation of NCCT radiographic follow-up provides a valid technique for assessing cerebral atrophy following MIS ICH evacuation. Further data collection and analysis is required to assess the specific impact of MIS and procedural outcome on cerebral atrophy and corresponding clinical outcome.

ABSTRACT 99

CONTINUOUS TIME NEURAL ORDINARY DIFFERENTIAL EQUATION PREDICTS RNFL PROGRESSION IN PRIMARY OPEN ANGLE GLAUCOMA PATIENTS.

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Purpose: Glaucoma is characterized by the progressive thinning of the retinal nerve fiber layer (RNFL); however, the factors influencing this progression are not well known. Progression is hard to quantify as patient measurements are limited by patient availability and often medical datasets contain irregularly spaced measurements. This project developed a machine learning (ML) tool to predict patient RNFL progression, using a method that is specialized for irregularly sampled dynamic data and allows future prediction and exploration within the feature space.

Methods: An ordinary differential equation (ODE) is an equation that specifies the rate of change of a system. This project used a neural ODE (nODE), a ML method that trains a neural network to learn the rate of change of a system based on an input state which is then processed using an algorithmic ODE solver to predict the state of the system at any point in time. The model predicted progression of RNFL thinning using a state that consists of hemodynamic measurements including blood pressure, Optical Coherence Tomography Angiography (OCTA), and Visual Field Data. The dataset consisted of 29 primary open-angle glaucoma patients who underwent OCTA imaging at two office visits at 1.78 years (+/- 0.69) apart on average, with a max of 2.89 years

Results: The nODE was able to accurately capture the dataset progression with an average absolute error of 3.78 μm [95% CI= 2.24-5.32] obtained using 3-fold cross-validation. The best-performing model was visualized on a random patient chosen from the testing dataset with different values of systolic blood pressure (SBP), intraocular pressure (IOP), and diastolic blood pressure (DBP) to show how these values may impact progression (Figure 1). For the patient in Figure 1, the RNFL thinning increased with increasing SBP, with increasing IOP, and with decreasing DBP.

Conclusions: This pilot project demonstrated the use of a continuous-time neural model to extract information from irregularly sampled OCTA scans. Speculative predictions are made for each patient, identifying a subset of non-progressing patients at higher risk of progression in a clinically relevant time of 5 years. The model predicted individual RNFL progression using different physiological measurements (i.e. higher SBP increased the rate of RNFL progression for one patient, yet the magnitude of this change differed between patients) potentially allowing patient-specific treatment recommendations.

ABSTRACT 100

EVALUATING THE 2023 EUROPEAN ASSOCIATION OF THE LIVER'S GUIDELINES FOR INTRAHEPATIC CHOLESTASIS OF PREGNANCY: RISK STRATIFICATION AND OUTCOMES IN 4,000+ U.S. PATIENTS.

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Background: Intrahepatic cholestasis of pregnancy (ICP) is the most common liver disease unique to pregnancy, varying in incidence based on population and associated with adverse fetal outcomes. We assessed the prevalence and outcomes of ICP categories defined by the 2023 EASL guidelines in a diverse U.S. population.

Methods: We conducted a retrospective cohort study (Jan 2009-Apr 2024) using data from our diverse health system. Suspected ICP patients were identified by pregnancy records with total serum bile acids (TSBA) ordered and categorized based on EASL guidelines: Group A (normal TSBA, ALT/AST), Group B (elevated ALT/AST, normal TSBA), or Group C (TSBA > 19, normal or elevated ALT/AST). Adjusted multinomial and binary logistic analyses identified predictors and outcomes for each group.

Results: Among 178,889 pregnancies, we identified 4,764 (2.7%) cases of suspected ICP, involving 4,240 unique patients. Of these, 875 (21%) had TSBA ≥ 10 and 83 (2%) were ≥ 100. The cohort (36% White, 23% Hispanic, 12% Asian, 10% Black) was classified as Group A (64%), B (25%), or C (11%). Ursodiol prescriptions: 10% of A, 25% of B, 67% of C. Mean age (32.5 yrs) and BMI (29) were similar across groups. Hispanic ethnicity was associated with Group C versus A (RRR 1.72, 95% CI: 1.31-2.24) and B (RRR 1.50, 95% CI: 1.12-2.01). Compared to A, pre-existing liver disease was associated with a higher likelihood of being in Groups C (RRR 5.12, 95% CI: 3.17-8.26) and B (RRR 1.94, 95% CI: 1.44-2.61). Odds of post-pregnancy liver disease were highest in B (OR 3.24, 95% CI:1.97-5.34) versus A. Group C had higher odds of preterm birth compared to A (OR 10.93, 95% CI: 8.20-14.56) and B (OR 4.06, 95% CI: 2.99-5.50). Within C, preterm birth rates increased with TSBA: 44% with TSBA < 40, 50% with TSBA ≥ 40 and <100, and 69% with TSBA ≥100 (p = 0.003).

Conclusion: This study evaluates the applicability of the 2023 EASL guidelines for suspected ICP, demonstrating how group characteristics can guide risk stratification. Our findings suggest that both elevated TSBA (Group C) and elevated LTs alone (Group B) warrant surveillance. Identifying elevated LTs alone as a potential surveillance indicator has global relevance, offering an accessible screening tool when TSBA may be unavailable. The association of ICP with Hispanic ethnicity and pre-existing liver disease highlights the need for targeted screening, while post-pregnancy liver disease risk emphasizes the importance of long-term follow-up.

ABSTRACT 101

EVALUATING HOSPITAL STAFF PERCEPTIONS OF COMMUNITY-BASED DOULA CARE: A MIXED-METHODS STUDY ON BIRTH OUTCOMES AND PROGRAM INTEGRATION.

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Background: Community-based doulas promote birth equity by providing culturally sensitive care that addresses challenges faced by marginalized populations and improves maternal and infant health outcomes. The Helping Promote Birth Equity through community-based doula care program (HoPE) was implemented at two safety-net hospitals in Queens, NY. This study examines hospital staff perceptions of doulas, which is essential for successful program integration into standard clinical care.

Methods: Using a mixed-methods approach, we surveyed obstetrics staff and conducted qualitative interviews at two safety-net hospitals to assess hospital staff perspectives on the HoPE program. Participants included maternity care providers at the two hospitals where HoPE had been implemented. To ensure diverse representation, we used purposive sampling to recruit individuals from various training backgrounds, including MDs, midwives, nurses, and social workers. Quantitative data were analyzed in SAS using descriptive statistics and chi-square tests, while qualitative data were examined in Dedoose using thematic analysis based on the RE-AIM framework.

Results: Among 82 hospital staff surveyed, 57% had interacted with HoPE doulas during patient care. Moderate-to-high agreement was found regarding the program's implementation, with 59% rating it appropriate, 65% finding it feasible, and 68% considering it an acceptable intervention. Midwives and MDs had the highest acceptability scores, though differences by provider role and doula exposure were not statistically significant. Qualitative interviews (n=8) revealed that while most staff viewed the program as beneficial, early misconceptions and concerns about doulas' roles initially caused hesitancy. Training improved understanding, but some staff felt greater exposure to doulas was needed for better integration. Key benefits included emotional and physical support for patients, improved patient-provider communication, and increased access to community resources.

Conclusion: Understanding hospital staff perceptions is essential for successfully integrating doula programs. While HoPE was seen as appropriate and feasible, lower acceptability highlights the need for clearer role delineation, staff education, and improved workflow integration. Addressing these barriers through training, better communication, and expanded doula access can enhance program sustainability and impact, ultimately promoting equitable and patient-centered maternity care.

ABSTRACT 102

ASSOCIATIONS BETWEEN PREHABILITATION AND POSTOPERATIVE HEALTHCARE UTILIZATION FOR TOTAL HIP OR TOTAL KNEE ARTHROPLASTY IN MEDICARE BENEFICIARIES.

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Background: Prehabilitation has potential to improve outcomes in value-based care models. We examined the associations between receipt of prehabilitation (physical therapy [PT] services within 30 days preoperatively) and postoperative healthcare utilization in a national cohort of fee-for-service Medicare beneficiaries.

Methods: This retrospective cohort study used the 5% fee-for-service claims from the Medicare Limited Data Set to identify unilateral elective inpatient total hip arthroplasty (THA) procedures (n = 25,509) and total knee arthroplasty (TKA) procedures (n = 40,091) from January 1, 2016 to September 30, 2021. Associations between prehabilitation and postoperative healthcare utilization were analyzed in mixed-effects generalized linear models adjusting for patient-level and hospital-level factors. We report adjusted odds ratios (OR) or % differences.

Results: Prehabilitation (13.1% THA, 13.1% TKA) was not significantly associated with institutional post-acute care discharge, 30-day emergency department visits, or 90-day readmissions. For TKA, prehabilitation was significantly associated with decreased odds of an extended hospital length of stay (OR = 0.86, $P = 0.02$) and reduced length of stay in an institutional post-acute care facility (-5.71%, $P = 0.004$). In both THA and TKA, prehabilitation was associated with decreased use of 90-day home health physical and/or occupational therapy (THA: OR = 0.82, $P = 0.001$; TKA: OR = 0.67, $P < 0.001$). In contrast, prehabilitation in both cohorts was associated with increased odds of receiving any 90-day outpatient PT (THA: OR = 2.08, $P < 0.001$; TKA: OR = 2.48, $P < 0.001$) and an increased number of 90-day outpatient PT visits (THA: +4.04%, $P = 0.01$; TKA: +5.21%, $P < 0.001$).

Conclusion: Prehabilitation was associated with some decreases in postoperative healthcare utilization, particularly for TKA. Associations of preoperative physical therapy with increased postoperative outpatient physical therapy may reflect variation in referral patterns or patient access. These results highlight the importance of continued research into the impact of prehabilitation on healthcare utilization, patient outcomes, and episode costs. Additionally, further research should identify which patients would benefit the most from prehabilitation to increase the value of care.

ABSTRACT 103

PATIENT CHARACTERISTICS ASSOCIATED WITH SPINAL CORD STIMULATOR SUCCESS.

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Introduction: Chronic back pain is a leading global cause of disability. Spinal Cord Stimulators (SCS) are effective for refractory back pain by modulating the dorsal spinal cord. Patients undergo a temporary trial before permanent implantation if pain improves. Identifying candidates likely to benefit is essential for optimizing outcomes.

Methods: After obtaining Institutional Review Board approval, we analyzed electronic medical records of 189 individuals in the Mount Sinai Health System experiencing chronic back pain and either had a successful percutaneous trial (with subsequent implantation) or an unsuccessful trial (without subsequent implantation). Patient demographics, medication use, morphine milliequivalents/day (MME/day), prior surgeries, comorbidities, and functional metrics were obtained. We identified factors significantly associated with successful SCS trials and subsequent lead and generator implantation using descriptive statistics and multivariate logistic regression models. We used a mixed effect model with interaction term between generator implantation and time controlling for baseline comorbidities to examine association between generator implantation and average pain score, for a span of 12 months.

Results: Factors significantly associated with successful SCS trials included increased age ($p = 0.04$), BMI > 30 ($p = 0.02$), diabetes mellitus ($p = 0.03$), longer median duration of pain ($p = 0.02$), and MME > 50/day ($p = 0.01$). SCS success itself was associated with greater MME/day use ($p = 0.03$). Based on multivariate logistic regression model, patients with a history of previous spine surgery had a significantly higher likelihood of SCS success (OR 2.4, CI 1.1-5.5, $p = 0.04$). Patients with > 50 MME/day were significantly associated with SCS success (OR 4.4, CI 1.5-15.1, $p = 0.01$). Permanent implantation led to a significant 28% pain reduction over 12 months ($p = 0.001$). Smoking history and Medicaid insurance status were significantly associated with SCS explantation (OR 3.4, CI 1.1-11.4, $p = 0.04$; OR 6.7, CI 1.4-39.9, $p = 0.02$). Duration of pain was significantly associated with a decreased likelihood of SCS explantation (OR 0.84, CI 0.71-0.96, $p = 0.02$).

Conclusion: Analysis of medical records from 189 patients within the Mount Sinai medical system revealed significant patient-related factors associated with a successful SCS trial and also explantation.

ABSTRACT 104

THE IMPACT OF AN IMMEDIATE DIEP FLAP COMBINED WITH A SYMMETRIZING PROCEDURE ON COMPLICATION RATES, REVISION PROCEDURES AND TOTAL LENGTH OF RECONSTRUCTION.

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Background: Simultaneous contralateral symmetrization procedures can be performed to achieve symmetry in unilateral Deep Inferior Epigastric Perforator (DIEP) flap breast reconstructions. While itthese may reduce the number of surgeries and length of stay (LOS), the risk of increased revisions, complications, and total reconstructive sequence compared to delayed symmetrization remains debated. This study aims to compare the varying aspects of immediate and delayed symmetrization in unilateral DIEP flap reconstructions.

Hypothesis: Combining the DIEP flap procedure with the symmetrizing procedure does not increase the likelihood of complications, total length of operation time, and total hospital stay. However, the total length of reconstructive sequence and number of revisions will be greater for patients receiving a delayed symmetrization procedure.

Methods: A retrospective chart review of patients who underwent DIEP flap reconstruction from 2019 to 2023 was conducted. Demographic and perioperative data were collected, including length of operation, LOS and reconstructive sequence length. Surgical outcomes included 30-day surgical site infections, dehiscence, seroma, hematoma, flap loss, reoperations, 90-day readmissions and revision surgeries. Regression analyses assessed associations, and statistical significance was set at $p<0.05$.

Results: Among 297 patients, 43% underwent contralateral symmetrization, of which with 70% undergoing was simultaneous and 30% undergoing delayed. Revision surgery was performed in 46% of simultaneous cases versus 98% of delayed cases ($p<0.001$). Simultaneous symmetrization had a significantly longer operative time ($p=0.008$) at the index procedure, however, no difference in hospital stay ($p=0.821$) or complications ($p=0.466$) was observed. Analysis of the mean reconstructive sequence demonstrated a significantly shorter length for simultaneous symmetrization than delayed (152 ± 238 days vs. 446 ± 377 days, $p<0.001$).

Conclusion: Simultaneous contralateral symmetrization procedures had a shorter reconstructive sequence and a lower revision rate compared to the delayed group. Furthermore, no difference in the rate of postoperative complications or LOS was noted between the two groups. These findings suggest performing symmetrization concurrently may offer both aesthetic and logistical advantages, making it a more efficient option for patients seeking streamlined breast reconstruction with fewer surgical interventions.

ABSTRACT 105

DIETARY INTAKE OF VITAMIN C AND PRESENCE OF *H. PYLORI*: A POOLED ANALYSIS WITHIN THE STOMACH CANCER POOLING (STOP) PROJECT.

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Background: Nearly half of the global population is infected with Helicobacter pylori (*H. pylori*), with higher prevalence in developing regions and areas of lower socioeconomic status. While vitamin C has demonstrated both preventative and therapeutic potential against *H. pylori* through antioxidant properties, urease inhibition, and enhancement of gastric mucosal defense, current evidence on their relationship remains inconsistent.

Objective: To evaluate the association between dietary vitamin C intake and *H. pylori* infection through a pooled analysis of case-control studies within the Stomach Cancer Pooling (StoP) Project, accounting for potential confounding factors.

Methods: Our analysis included 5,198 case-control studies (4,267 cases, 931 controls) from the StoP Project. Dietary vitamin C intake was assessed through food-frequency questionnaires and standardized using country-specific food composition databases. Mixed-effects logistic regression models were employed to calculate incidence rate ratios (IRRs) and 95% confidence intervals (CIs), adjusting for total caloric intake, fruit/vegetable intake, demographics (e.g., sex, age), lifestyle factors (e.g., smoking status), and socioeconomic factors (e.g., education).

Results: Individuals in the highest quartile of dietary vitamin C intake, after adjusting for demographics and baseline total caloric intake, showed no significant difference in the incidence of *H. pylori* infection compared to those in the lowest quartile (IRR: 0.99; 95% CI: 0.94–1.05). However, after adjustment for fruit and vegetable intake, a marginal but significant inverse association emerged (IRR: 0.94; 95% CI: 0.89-0.99; $p < 0.05$). This significant inverse association persisted even after further adjustment for education and subsequently for smoking status (IRR: 0.95 (95% CI: 0.91–0.99; $p < 0.05$).

Conclusion: This pooled analysis suggests a modest inverse association between dietary vitamin C intake and H. pylori infection, with a protective effect emerging after adjusting for overall fruit and vegetable consumption. Given these findings, vitamin C supplementation may serve as a preventive strategy in high-risk populations and as an adjunct to standard H. pylori therapy. Healthcare providers should consider assessing and optimizing vitamin C intake in individuals at risk for or infected with H. pylori, particularly in regions with a high infection burden or limited access to standard treatment options.

ABSTRACT 106

EXPLORING THE PRELIMINARY EFFECTIVENESS OF A CASH TRANSFER TO STREET-CONNECTED YOUNG WOMEN TO INCREASE HOUSING STABILITY IN WESTERN KENYA.

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Background: In Kenya, street-connected young people (SCY) face myriad adverse health, social, and economic inequities, including a lack of adequate housing. Housing First is an evidence-based approach that combines financial assistance with supportive services to promote stable housing and improved wellbeing. Unconditional cash transfers (UCT) are flexible funding mechanisms that may help deliver Housing First principles. An UCT program combined with peer support was piloted in western Kenya between June 2023 to March 2024. We sought to explore the preliminary effectiveness of the program on the housing and wellbeing outcomes of SCY.

Methods: We utilized a purposive sample to interview ten street-connected young women who participated in the program across three sites in western Kenya: Eldoret, Huruma, and Kitale. The program provided monthly payments of 2,000 KSH for six months. Interviews were audio-recorded, transcribed, and translated into English as needed. Data were analyzed using ATLAS.ti through thematic analysis, employing a hierarchical coding structure to identify broad concepts, emerging themes, and variations.

Results: Participants aged from 18-27 years (median: 22.5; IQR: 20-25). Our analysis generated four main themes: meeting basic needs, economic empowerment, challenges and risks, and personal growth. Participants used the cash transfers to secure housing, buy food, and support their children, addressing their most immediate concerns: "My child now has a place where she can't feel cold." Many invested in small businesses or secured employment, aiming to build financial independence. However, some faced difficulties with financial mismanagement and theft, highlighting the potential risks associated with cash transfers. Despite these challenges, the program fostered confidence, resilience, and hope for a more stable future: "Since now I have a job I can depend on my own in life."

Conclusion: The findings highlight how unconditional cash transfers can improve the lives of street-connected young women by addressing basic needs, promoting economic empowerment, and fostering personal growth. While challenges exist, many participants used the funds to create housing stability and pursue empowering goals. Thus, direct UCT programs, when paired with guidance and resources, have the potential to empower young women to build more secure and independent futures.

ABSTRACT 107

LAND ELEVATION AND THYROID CANCER IN U.S. METROPOLITAN STATISTICAL AREAS.

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Background: Land elevation has been postulated as a factor in oncogenesis. Nevertheless, the literature has conflicting results as some studies suggest a protective effect at higher altitudes due to factors such as high natural background radiation (NBR), lower oxygen concentration (OC), and low barometric pressure (BP) while others report increased cancer incidence in high-altitude regions.

Objective: The underlying objective of this study was to investigate the association between land elevation and thyroid cancer incidence in U.S. metropolitan statistical areas (MSAs) from 1999- 2020.

Methods: Thyroid cancer incidence data from 80 MSAs were obtained from the CDC Wonder database. Median land elevation for each MSA was calculated, and corresponding NBR, OC, and BP values were derived from online calculators from the Environmental Protection Agency and Baillie Laboratory. Spearman's rank correlation was employed to evaluate links between thyroid cancer incidence and these environmental factors.

Results: Negative trendlines were uncovered for BP and OC with thyroid cancer incidence and a positive trendline was uncovered for altitude with thyroid cancer incidence. However, there was no significant correlation found between thyroid cancer incidence and NBR ($r=0.008$, $p=0.941$), OC ($r=-0.154$, $p=0.174$), BP ($r=-0.083$, $p=0.466$), or altitude ($r=0.095$, $p=0.400$).

Conclusions: Although previous research demonstrates environmental factors at high altitudes may affect cancer incidence, this study found no significant correlations between these factors and thyroid cancer. Future research should explore non-linear relationships and additional environmental variables.

ABSTRACT 108

INFLAMMATION AND CONTRAST-ASSOCIATED ACUTE KIDNEY INJURY IN PATIENTS UNDERGOING PERCUTANEOUS CORONARY INTERVENTION.

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Background: Contrast-Associated Acute Kidney Injury (CA-AKI) is a relatively common complication of percutaneous coronary intervention (PCI) and has been associated with prolonged hospitalization, chronic renal impairment, and increased mortality. Although the etiology of CA-AKI is likely multifactorial, inflammation could be a major contributor to its development and progression. Among the many pro-inflammatory biomarkers, C-reactive protein (CRP) has demonstrated to be a powerful predictor of systemic inflammation. To date, the long-term outcomes and incidence of CA-AKI based on inflammatory state for a broad cohort of patients undergoing PCI have remained underexplored.

Objective: Therefore, in this study we examined the relationship between CRP levels and the incidence of CA-AKI, as well as the prognostic impact of CRP levels for patients undergoing PCI at a large volume tertiary care center.

Methods: All consecutive patients who underwent PCI for stable CAD between January 2012 and December 2022 at The Mount Sinai Hospital (New York, USA) were included. Patients were excluded if they presented with a known high inflammatory disease state, were on renal replacement therapy, or had a baseline hsCRP value > 10 mg/L. Patients were divided into 2 groups, those who developed CA-AKI and those who did not. CA-AKI was defined as an increase in serum creatinine by ≥ 50% or ≥ 0.3 mg/dL within 48 hours after PCI. Patients were further stratified into 2 subgroups based on inflammatory state – high-inflammatory state (HIS) if hsCRP > 2 mg/L at time of index PCI and low-inflammatory state (LIS) if hsCRP was ≤ 2 mg/L. The primary outcome of this analysis was all-cause mortality within 1 year after PCI.

Results/Discussion: A total of 11,803 patients undergoing PCI between January 2012 and December 2022 were included. The incidence of CA-AKI did not differ significantly in patients with a HIS compared to those with a LIS (2.4% vs. 2.0%; p = 0.237). At 1-year follow-up, significantly increased rates of all-cause mortality were observed in patients who experienced CA-AKI with a HIS as compared to a LIS (10.4% vs. 2.3%; HR: 4.75 [95% CI, 1.32-17.0]; p = 0.017). The presence of a HIS may not elevate the risk of developing CA-AKI but it may generate a milieu that augments the effects of the various pathophysiologic sequelae underlying CA-AKI, including renal medullary hypoxia, oxidative stress, radiographic contrast media induced cytotoxicity, or endothelial dysfunction.

ABSTRACT 109

SCOPING THE FIRST AID KNOWLEDGE OF U.S. MEDICAL STUDENTS.

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Background: First aid (FA) is life-saving, yet there is a lack of recent data on US medical students' (MS) knowledge of it. Non-US studies demonstrate that MS lack these skills, but this may not apply to US MS given our differing undergraduate medical education. We aim to describe FA knowledge among US MS.

Methods: We distributed a survey to MS at the Icahn School of Medicine at Mount Sinai via email lists, asking MS to rate their comfort performing 11 FA skills on a 5-point scale.

Results: We received 92 responses (19.1% response rate). 37.0% of respondents were M1s, 29.4% M2s, 14.1% M3s, and 19.6% M4s. 68.5% had no prior first aid experience, 16.3% had prior certification in EMS, 10.9% had other prior first aid training such as Basic Life Support, and 4.4% had relevant personal experience such as having an allergy requiring an epinephrine auto-injector. The % of MS "comfortable" (4/5, 5/5) with each skill was low: naloxone 54.4%, epinephrine auto-injector 50.0%, scene safety 50.0%, chest compressions 45.7%, airway positioning 41.3%, automated external defibrillator 35.9%, noninvasive positive-pressure ventilation 34.8%, tourniquet 34.8%, patient assessment 32.6%, cervical spine stabilization 22.8%, and Heimlich maneuver 22.8%. We compared the number of comfortable students to those "uncomfortable" (1/5, 2/5) using Fisher's exact test. We found no significant difference between preclinical (M1/M2) and clinical (M3/M4) MS' comfort for any skill except assessment ($p<.001$) and airway positioning ($p<.001$). 58.1% of clinical MS reported comfort with those skills. MS with prior FA certification were more comfortable with all skills except patient assessment and naloxone use ($p<.005$). MS with prior EMT certification were significantly more comfortable with patient assessment than their peers ($p<.001$). Though only 4 clinical MS reported previous FA training, there was significantly improved comfort with manual c-spine stabilization between those students and clinical MS without prior training ($p=.022$).

Conclusion: We found that MS lacked comfort with basic FA and that comfort did not improve with time in medical school. Further study regarding the impact of previous experience and clinical rotations is needed, and this survey should be expanded to other medical schools. This study shows that an educational intervention to address this lack of comfort is warranted.

ABSTRACT 110*

SYSTEMIC RISK FACTORS FOR INFECTIOUS KERATITIS.

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Background: Corneal ulcers, characterized by the loss of corneal tissue due to infection or injury, can lead to significant vision impairment if not promptly treated. Infectious keratitis from bacteria, fungi, viruses, or parasites invading the cornea is the primary cause of corneal ulcers. While local factors like contact lens wear, corneal trauma, and ocular surface diseases are well-known contributors to corneal ulcers and infectious keratitis, systemic factors may also influence susceptibility. Despite the potential significance of these systemic factors, large-scale studies examining their association with corneal ulcers still need to be completed.

Methods: This retrospective cohort study analyzed a random 5% sample of national Medicare beneficiaries from 2011-2015 and included inpatient, emergency, and outpatient claims for those aged 65+ with corneal ulcers (n= 2,688,114). Data were retrieved from the Denominator and Physician Supplier Part B file from the Center for Medicare and Medicaid Services. A multivariable logistic regression model assessed the outcome of corneal ulcers, considering factors such as age, sex, race, and systemic risk factors as exposure variables. Analyses were performed using R studio, with significance set at p-values ≤ 0.05. The primary outcome was the association between demographic characteristics (e.g. age, sex, race/ethnicity) and systemic risk factors on the incidence of corneal ulcers.

Results: Vitamin D deficiency [Odds Ratio (OR) 1.85], [95% Confidence Interval (CI)=1.72–2.00] and B-complex vitamin deficiency (OR = 1.49; 95% CI: 1.32–1.68) are associated with an increased risk of corneal ulcers. Older age (OR = 1.03; 95% CI: 1.03–1.04), depression (OR = 1.49; 95% CI: 1.30–1.70), opioid dependence (OR = 1.77; 95% CI: 1.13–2.62), and ulcerative colitis (OR = 1.90; 95% CI: 1.40–2.51) also had increased odds of developing corneal ulcers.

Conclusions: Nutritional deficiencies, along with age, depression, opioid dependence, and ulcerative colitis, were associated with higher odds of developing corneal ulcers. These findings are significant for clinical practice and public health, as they provide insight into vulnerable populations and can inform personalized treatment strategies, resource allocation, and future research to reduce the incidence of infectious keratitis in high-risk groups, such as older populations.

ABSTRACT 111

PREDICTIVE VALUE OF CIRCULATING TUMOR HPV DNA KINETICS IN INDUCTION THERAPY FOR HEAD AND NECK SQUAMOUS CELL CARCINOMA.

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Objective: Tumor tissue-modified viral (TTMV) DNA is a sensitive, highly specific biomarker for human papillomavirus-positive (HPV+) head and neck squamous cell carcinoma (HNSCC). However, TTMV clearance patterns in induction chemotherapy (IC) or chemoimmunotherapy (ICI) have not been well described. We aim to monitor the kinetics of TTMV responses to IC(I) and analyze the predictive implications for treatment outcomes.

Methods: This is a retrospective cohort study of patients with locally advanced, unresectable HPV+ HNSCC with high-risk features (e.g. extracapsular extension, T4, or >N2c) treated at a single institution between June 2020 and December 2024. Patients were treated with 3 cycles of IC (docetaxel-cisplatin-fluorouracil) or anti-PD1 ICI (docetaxel-cisplatin-Cemiplimab or docetaxel-cisplatin-Pembrolizumab). Depending on clinical trial enrollment, patients were followed by standard- or reduced-dose chemoradiation (CRT) alone or with adjuvant therapy. TTMV testing was done pre-treatment, after each cycle and CRT, and throughout surveillance and analyzed retrospectively.

Results: Twenty-eight subjects (26 male, 13 smokers) had a median pre-treatment TTMV of 1321 (range 27-90770, IQR 200-3217). Patients had a mean 33.7 months of follow-up and a mean 10.1 TTMV tests over the study period. 10/28 patients reached full TTMV clearance after one IC cycle (IC1), 8/28 after two cycles (IC2), 3/28 after three cycles (IC3), and 1/28 remained TTMV+ throughout IC and cleared after CRT. 6/28 had unknown kinetics due to missing data. All patients were TTMV-negative following completion of CRT. During surveillance, 6/28 patients developed both TTMV+ and PET+ recurrence (1 locoregional, 5 metastatic); of these, 2/6 had reached TTMV clearance after IC2, 2/6 after IC3, 1/6 after CRT, and 1/6 unknown. Rapid clearance after IC1 was associated with having no evidence of disease (p=0.046) and lower baseline TTMV (p=0.049). TTMV detection of recurrence had a mean lead-time of 115 days (range 0-340) over PET detection.

Conclusions: Recurrences occurred in patients who failed to clear plasma TTMV after one IC(I) cycle. Delayed TTMV clearance strongly predicted systemic failure and may help identify patients requiring more systemic therapy. Future studies should validate these findings in larger cohorts.

ABSTRACT 112

THE CORRELATION OF REFLECTANCE CONFOCAL MICROSCOPY WITH DERMOSCOPIC PATTERNS IN PATHOLOGICALLY CONFIRMED SPITZ NEVI: A DESCRIPTIVE STUDY OF 41 LESIONS.

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Background: Spitz nevi (SN) are benign melanocytic lesions with clinical and dermoscopic resemblance to melanoma. (1) There is existing literature that describes the differentiation of SN from Spitzoid melanoma (SMM) using dermoscopy and reflectance confocal microscopy (RCM). (2) Although the dermoscopic and RCM features of SN have been identified, the classification of corresponding patterns between dermoscopy and RCM of SN has, to our knowledge, not been demonstrated.

Methods: We evaluated dermoscopic and RCM images of 41 biopsy-confirmed Spitz nevi. We grouped the SN using established dermoscopic classifications—starburst, globular, reticular, homogeneous, multicomponent/atypical, and dotted vessels. (3) We then analyzed and matched the RCM features to their corresponding dermoscopic pattern. By correlating dermoscopic patterns to RCM findings, we aimed to enhance diagnostic precision and differentiate SN from spitzoid melanoma.

Results: The most frequently observed dermoscopic patterns were starburst and globular, which represented 43.9% and 24.4% of the total lesions, respectively. Both patterns demonstrated regular honeycomb or cobblestone patterns in the superficial layer on RCM and were combined to form Group 1. Within Group 1, 84.6% of the lesions showed dendritic cells and 81.2% exhibited spindled cells. Group 2 contained multicomponent SN, with 60.5% exhibiting spindled cells, and which displayed a disarranged cobblestone and honeycomb pattern on RCM. Group 3 was composed of the SN with dermoscopically homogeneous patterns, of which 90.5% had spindled cells.

Conclusion: Due to the rarity of spitzoid neoplasms, their RCM features haven't yet been correlated to their dermatoscopic counterparts. In order to improve non-invasive diagnostic accuracy of Spitz nevi and prevent unnecessary biopsies, our study aims to correlate Spitz nevi dermoscopic patterns with their corresponding RCM patterns. We found that each group of SN demonstrated varying levels of spindled cells on RCM. Future studies with larger patient cohorts will compare these different SN groups to SMM to aid in diagnosis.

ABSTRACT 113

ESTABLISHING ENVIRONMENTAL SUSTAINABILITY IN A RESOURCE-LIMITED SETTING: THE INNOVATIVE DESIGN OF KYABIRWA SURGICAL CENTER, AN AMBULATORY SURGERY FACILITY IN RURAL, EASTERN UGANDA.

Grace Travers, Saul Kibirango[1], Anna Kalumuna[1], Winfred Nannozi[1], Ronard Tusiime[1], Joseph Damoi[1], Angellica Giibwa[1], Reetwan Bandyopadhyay[2], George George[3], Michael Marin[1], Linda Zhang[2].
[1,2]Surgery, [3]Architecture. [1]Kyabirwa Surgical Center, Jinja, Uganda, [2]Icahn School of Medicine at Mount Sinai, New York, New York, [3]GKG Architecture, New York, New York.

Background: The healthcare industry is a leading contributor to climate change and resource depletion, and its footprint is growing given efforts to improve healthcare access worldwide. Low- and middle-income countries are most vulnerable to this environmental degradation due to their relatively weaker infrastructure and lack of resources. KSC was architecturally designed with the goal of zero carbon footprint, exemplifying how environmental sustainability can be achieved in low-resource settings.

This study describes the infrastructure and procedures that drive environmental sustainability at Kyabirwa Surgical Center (KSC), an ambulatory surgery facility in rural Uganda that has cared for over 20,000 patients since its 2019 inception. It will evaluate solar power and rain water usage, as well as potential cost savings.

Methods: In collaboration with Mount Sinai, Ugandan stakeholders constructed the 85,000 ft2 center with local materials and designed spaces to leverage natural resources such as sunlight and natural ventilation. The center also prioritized operational independence from the local power grid and water supply, using mainly solar power and rainwater. Specific treatment and storage protocols, like environmentally-conscious anesthesia regimens, were also implemented to minimize environmental footprint.

Results: In 2021-2023, KSC obtained only 0.2% of its power and 28% of its water from the town. Excluding installation, this saves KSC an estimated $6,169 in operating costs annually. These savings exceed annual solar panel and water system maintenance costs estimated at $5,771. Additionally, KSC conserved 15% of solar power produced and 92% of rainwater collected from 2021-2023 for future use.

An estimated 71% of procedures are completed under environmentally-friendly alternatives to general anesthesia, which contain more greenhouse gases. 33% of these procedures, including excisions, genitourinary procedures, and herniotomies, are carried out with local anesthesia alone.

Discussion: Given the healthcare sector's current contribution to the climate crisis, implementation of environmental sustainability initiatives is essential. KSC demonstrates that such initiatives are not only possible – but also often operationally more cost-effective – to implement in resource-limited settings with support from high-income countries. For a healthier future, healthcare leaders should consider implementing similar alternatives in both new and existing centers.

ABSTRACT 114

TRENDS IN HEALTH CARE ACCESS AND OUTCOME FOR PATIENTS WITH GLIOBLASTOMA OVER A DECADE.

Ruben Vega Perez, Nina Bickell[1], Lynne Richardson[2], Isabelle Germano[3].
[1]Population Health Science and Policy, [2]Emergency Medicine, [3]Neurosurgery. [1,2,3]Icahn School of Medicine at Mount Sinai, New York, New York.

Introduction: Increasing evidence supports that socio-economic differences adversely impact health outcomes. Although the prognosis for glioblastoma multiforme (GBM) patients remains poor with 5-year survival rates of 6%, recent data suggests that racial/socio-economic disparity might adversely impact their outcome. This study assessed trends in health care access and outcome for glioblastoma patients in a large metropolitan medical system.

Methods: The Cancer Surveillance, Epidemiology, and End Result (SEER) Tumor Registry for our New York City multi-center health system was queried for patients diagnosed with GBM at Mount Sinai between 2009-2019. Insurance type was used as a surrogate for socio-economic status (SES), defining active Medicaid insurance coverage as a proxy for low SES.

Results: A total of 543 patients, 45% women, met the inclusion criteria for this analysis. The overall mean age at diagnosis was 62±13 years. The overall racial/ethnic composition of our cohort was 56% white, 15% Latinx,11% Black, and 7% Asian/Pacific Islander benchmarked to national SEER data of 80% white, 10% Latinx, 6% Black and 4% Asian/Pacific Islander. Low SES patients comprised 26% of the overall population with a progressive growth over the years from 20% to 27%. The mean overall survival (OS) was 14.8 months ±0.8 (median 12.1). Latinx had the shortest OS (7.9 months) and Asian/Pacific Islander had the the longest (19 months). Patients with low-SES had a shorter OS compared to those with high SES; 12.7 versus 15.5 months, respectively.

Conclusion: The lower percentage of white patients in our cohort compared to previous data combined with an increased number of low-SES patients over the years, suggests that over time, our cancer center serves a more diverse and socioeconomically disadvantaged population. Our study suggests and adverse relationship between low SES and OS. Ongoing studies will further elucidate statistical significance for the observed shorter OS in the Latinx population in relation to other ethnic/racial groups.

ABSTRACT 115

DISEASE PROGRESSION OF MASH-HCC FOLLOWING MANNOSE SUPPLEMENTATION.

Camila Vicioso, Charles DeRossi[1], Bruno Cogliati[2], Scott Friedman[2], Jaime Chu[1].
[1]Pediatrics, [2]Medicine. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.

Background: Metabolic dysfunction-associated steatotic liver disease is the most common pediatric liver disease, afflicting an estimated 8% of children globally, with potential to progress to metabolic dysfunction-associated steatohepatitis (MASH) and hepatocellular carcinoma (HCC). In adults, HCC is a leading cause of cancer-related deaths globally. Currently, there are limited therapies for MASH and HCC, underscoring the need for investigation into their mechanisms and potential treatments. Mannose, a simple sugar, has shown promise in reducing tumor growth in other cancer types and in reducing fibrosis in liver disease models. However, its effectiveness in preventing or treating MASH-HCC remains unexplored. This study investigates the impact of mannose supplementation on the progression of MASH-HCC *in vivo* and *in vitro*.

Objective: We hypothesized that mannose supplementation would reduce fibrosis and lesions *in vivo*, and decrease cell proliferation and viability in HCC cell lines *in vitro*, indicating a therapeutic potential for mannose in MASH-HCC.

Methods: Mice were fed a high-fat, cholesterol and sugar diet (FAT-MASH) with weekly CCl_4 injections to induce MASH by 12 weeks and HCC by 24 weeks. Mice (n=5/group) were supplemented with either low (5%) or high (20%) doses of mannose in drinking water, starting at either the initiation of the FAT-MASH regimen (Prevention) or at 12 weeks (Reversal). Liver histology was analyzed by H&E and Sirius Red staining for fibrosis, and fibrosis quantity was scored using an AI algorithm. For *in vitro* studies, human hepatocyte (THLE5B) and HCC (HepG2, Huh7) cell lines were treated with varying doses of mannose. Cell proliferation and viability were measured at 24, 48, and 72 hours, and mannose phosphate isomerase (MPI) protein expression was evaluated by Western blot.

Results/Discussion: *In vivo*, mannose supplementation reduced fibrosis in treated groups compared to controls. Three mice developed preneoplastic lesions, independent of mannose treatment. *In vitro*, mannose did not significantly impact cell proliferation or viability, possibly due to sufficient MPI expression in all cell lines, which may limit mannose toxicity. These results indicate that while mannose supplementation reduces fibrosis, its effects on MASH-HCC progression are complex and warrant further investigation. Future studies with larger sample sizes and extended treatment durations are needed to further inform the role of mannose in MASH-HCC progression.

ABSTRACT 116

GUN VIOLENCE AND THE VOICES OF THE YOUTH ON COMMUNITY SAFETY IN THE TIME OF COVID-19 IN EAST HARLEM, NY: A YOUTH PARTICIPATORY ACTION RESEARCH CROSS-SECTIONAL STUDY.

Jacqueline Wallace, Rachel Chernet[1], Margaret Formika[1], Olusola Adeonigbagbe[2], Roseanne Flores[3], Robert Marchesani[4], Danielle Goldberg[5], Pamela Wridt[6], Danielle Laraque-Arena[7]. [1,2,5,6]Population Health Science and Policy, [3]Psychiatry, [4]Student Counseling, [7]Preventive Medicine. [1]SUNY Upstate Medical University, Syracuse, New York, [2,3]Hunter College CUNY, New York, New York, [4]Counseling In Schools Based at the Heritage School, New York, New York, [5]UNICEF USA, New York, New York, [6]Conscious Data Inc., Brooklyn, New York, [7]New York Academy of Medicine, New York, New York, Mailman School of Public Health and Vagelos College of Physicians and Surgeons, Columbia University, New York, New York.

Background: The USA has failed to codify the protection of children from gun violence (GV) as a human right. This study employs a youth participatory action research (YPAR) methodology, within the framework of the United Nations Convention on the Rights of the Child, to investigate the relationships between GV exposure, self-identified gender and perceptions of children's rights and safety.

Methods: An anonymous survey based on UNICEF USA's Child Friendly Cities Initiative interactive survey tool targeting adolescents was modified by East Harlem, high school student co-researchers in collaboration with near-peer graduate students. The 61-question survey was administered at an East Harlem high school. Analysis consisted of univariate, bivariate and logistic regression using SPSS®.

Results: A total of 153 students completed the survey: 48.4% self-identified as male and 45.8% as female. Most (79.1%) were aware that children have rights meaning they are recognized as individuals entitled to protection and participation in decisions affecting them, ensuring their dignity and well-being are prioritized. Thirty-five percent reported witnessing GV. There were differences in perception of safety based on gender and GV exposure. Fifteen percent of females reported never feeling safe at school compared to 3% of males ($p = 0.01$). Females were 2.2 times as likely as males to report transportation waiting areas as never safe ($p = 0.008$). Almost a third of females reported never feeling safe from sexual harassment in public, compared to 10% of males ($p = 0.004$). In multivariable logistic regression adjusted for gender, race/ethnicity and grade level, students who witnessed GV were 4.6 times more likely to report never feeling safe from violence (95% CI 1.7-12.4). Thirty percent of students who witnessed GV reported not attending school because of safety concerns. Students who witnessed GV had 2.2 times the odds of carrying a weapon to school (95% CI 1.1-4.5). These patterns continued for other perceptions of safety.

Conclusions: The students in this study affirmed their rights to participate and express their views on matters that may affect them. The study revealed differences in perceptions of safety by self-identified gender and identified gun violence as a major contributor of youth's perception of lack of safety. The study evinces the efficacy of employing a YPAR methodology to identify and answer youth concerns of community safety and prioritize honoring child rights.

ABSTRACT 117

HEMOGLOBIN DECREMENTS ARE ASSOCIATED WITH ISCHEMIC LESIONS AND POOR FUNCTIONAL OUTCOMES IN PATIENTS WITH INTRACEREBRAL HEMORRHAGE.

Emma White, Christina Rossitto[1], Zachary Weiner[1], J Mocco[1], Christopher Kellner[1], Fernanda Carvalho Poyraz[1].
[1]Neurosurgery. [1]Icahn School of Medicine at Mount Sinai, New York, New York.

Background & Purpose: Radiographic ischemic brain lesions and anemia are recognized as independent risk factors for poor intracerebral hemorrhage (ICH) outcomes. Low hemoglobin is presumed to impair oxygen delivery to the brain, and ICH patients develop a hemoglobin decrement during initial days of hospitalization. However, it remains unknown how hemoglobin decrements relate to MRI ischemic lesions. We hypothesized that acute hemoglobin decrements relate to MRI ischemic lesions and poor long-term functional outcomes.

Methods: Patients who underwent hematoma evacuation via Stereotactic Intracerebral Hemorrhage Underwater Blood Aspiration (SCUBA) technique were prospectively enrolled into an observational cohort study between December 2015 and September 2023. Patients with brain MRI within 15 days of ICH onset and serial hemoglobin assessments were analyzed. Our exposure was change in hemoglobin from admission to hospital day 4 (median time to MRI). Our outcomes were presence of MRI ischemic lesions on diffusion weighted imaging (DWI) and poor modified Rankin Scale (4-6) at 6 months. Multivariable logistic regression models assessed the relationships between exposure and outcomes, adjusting for sex, race, ICH score, Acute Physiology and Chronic Health Evaluation II score, antithrombotic use, time from admission to brain MRI, and prior DSA.

Results: Of 172 patients, mean age was 62.4 (SD 13.3), and the cohort was racially diverse. Mean baseline hemoglobin was 13.9 g/dL (SD 2.1), hemoglobin at day 4 was 11.6 g/dL (SD 2.0), and MRI ischemic lesions were identified in 49% of patients. Greater hemoglobin decrements were associated with MRI ischemic lesions (adjusted OR 0.73, 95%CI 0.57-0.92, p=0.009) and 6-month outcomes (adjusted OR 0.75, 95%CI 0.57-0.98, p=0.037).

Conclusion: Greater hemoglobin decrements after acute ICH are independently associated with remote ischemic lesions on brain MRI and with poor long-term functional outcomes. Further work is needed to assess if prevention of hemoglobin decrements after ICH can improve secondary brain injury and ICH outcomes.

ABSTRACT 118

NOVEL PER- AND POLYFLUOROALKYL SUBSTANCES ASSOCIATED WITH THYROID CANCER.

Jessica Yang, Haibin Guan[1], Maaike van Gerwen[2], Biban Gill[1], Lauren Petrick[1].
[1]Environmental Medicine and Climate Sciences, [2]Otolaryngology. [1,2]Icahn School of Medicine at Mount Sinai, New York, New York.

Thyroid cancer incidence has risen dramatically worldwide over the past four decades, suggesting a potential role of environmental factors in its etiology. Per- and polyfluoroalkyl substances (PFAS), a class of endocrine-disrupting chemicals (EDCs), have been implicated in thyroid cancer risk. However, most research has focused on a limited subset of PFAS, despite the existence of over 9,000 + reported PFAS compounds. Therefore, our study investigated the association between novel PFAS chemicals and thyroid cancer development using untargeted analysis of archived plasma samples. Plasma samples from thyroid cancer patients (n=88) and matched controls (n=88) were obtained from *BioMe,* a medical record-linked biobank at the Icahn School of Medicine at Mount Sinai. Participant plasma samples were collected either longitudinally (1–8 years before diagnosis, n=31) or cross-sectionally (within one year of diagnosis, n=57). Fluorinated chemicals were measured using liquid chromatography - high resolution mass spectrometry (LC-HRMS) and identified through FluoroMatch software. In total, twelve novel PFAS were detected with high confidence annotations. Logistic regression models, adjusted for age at collection, BMI, and storage time, identified three novel PFAS associated with an elevated likelihood of thyroid cancer in the longitudinal cohort (OR: 1.42–1.72, $p < 0.001$–0.03), while three PFAS were inversely associated (OR: 0–0.59, $p < 0.001$–0.006), suggesting potential differences in exposure patterns. In the cross-sectional cohort, two PFAS were significantly associated with thyroid cancer: MZ303.017_RT3.534 showed opposing effects across cohorts (decreased risk in cross-sectional OR: 0.85, $p = 0.05$; increased risk in longitudinal OR: 1.42, $p < 0.001$), while M353.018_RT0.917 was consistently associated with higher thyroid cancer risk (cross-sectional OR: 1.37, $p = 0.05$; longitudinal OR: 1.74, $p = 0.03$). These findings underscore the potential role of novel PFAS in thyroid cancer etiology and highlight the importance of exposure timing in epidemiological studies. The differences between longitudinal and cross-sectional results suggest that some PFAS may be involved in cancer initiation versus progression. Further research is needed to validate these associations, explore mechanisms of PFAS toxicity, and refine risk assessment models for thyroid cancer.

ABSTRACT 119

HEALTH RELATED SOCIAL RISK FACTORS ARE ASSOCIATED WITH LOWER SELF-REPORTED QUALITY OF LIFE IN PATIENTS ON HEMODIALYSIS.

Hailey Yetman, Lili Chan[1].
[1]Nephrology. [1]Icahn School of Medicine at Mount Sinai, New York, New York.

Research Question: How do unmet health related social risk (HRSR) factors affect quality of life (QoL) in people treated with hemodialysis (HD)?

Background: People treated with HD report lower QoL compared to patients not on HD. Patients with kidney disease have a high prevalence of HRSR factors. The association of HRSR and QoL in patients on HD remains understudied.

Methods: 324 patients on HD at five dialysis units were interviewed using the Kidney Disease Quality of Life (KDQOL-36) and the AHC Health-Related Social Needs Screening Tool (AHC-HRSN) to their access to housing, food, transportation, utilities, and safety. We calculated physical component score (PCS), mental component score (MCS), burden score, symptoms of kidney disease score, and effect of kidney disease score. Scores were analyzed using Python packages.

Results: Unmet HRSR was common with 56% of participants reporting at least one HRSR. All assessed QoL subscores, including PCS (mean 37.9, SD 10.9), symptom (mean 79.9, SD 14.8), effect (mean 72.7, SD 21.1), burden (mean 51.8, SD 29.5), and MCS (mean 52.3, SD 10.5) were lower in patients that reported an unmet social risk factor: PCS (mean 36.1, SD 10.1), symptom (mean 77.0, SD 15.0), effect (mean 68.5, SD 21.5), burden (mean 44.5, SD 28.3), MCS (mean 50.8, SD 11.1). Insecurity in housing and transportation most frequently emerged as significant variables associated with low QoL subscores, particularly burden score, on univariate (housing instability β=-17.826, $P<0.001$, transportation problems β=-13.084, $P<0.001$) and multivariate linear regression controlling for other surveyed patient characteristics (housing instability β=-17.057, $P<0.001$, transportation problems β=-13.042, $P<0.001$). Upon forward selection stepwise regression, housing insecurity and transportation problems emerged as significant variables associated with lower subscores for all scores except MCS.

Discussion: Unmet HRSR was prevalent, with 56% reporting at least one HRSR as compared to 49% in a study of patients enrolled in Medicare Advantage. Housing insecurity, reported by 24%, was significantly associated with all QoL measures. Transportation problems, reported by 21%, was significantly associated with 4 of the 5 sub scores.

Conclusion: Unmet HRSR, specifically housing instability and transportation problems, is significantly associated with lower QoL scores. Increased screening and intervention for unmet HRSR is necessary to improve QoL among patients on HD.

ABSTRACT 120

EVALUATING ORTHOPEDIC DISEASE RISK IN ELDERLY POPULATIONS THROUGH SLEEP PATTERNS: INSIGHTS FROM WEARABLE DATA IN THE ALL OF US RESEARCH PROGRAM.

Jennifer Yu, Brett Hayden[1].
[1]Orthopaedics. [1]Icahn School of Medicine at Mount Sinai, New York, New York.

Introduction: Sleep health has emerged as a critical factor in understanding mortality and disease, with a growing body of evidence linking poor sleep quality to adverse health outcomes. Yet, many studies rely on self-reported data, which can be biased and inaccurate, particularly among underrepresented elderly populations. To address this gap, our study utilizes long-term, objectively monitored sleep data to explore how sleep affects the orthopedic health of elderly patients.

Methods: The study analyzed registered-tier data from the All of Us Research Program, encompassing consenting adults aged 18 and older from across the United States. A total of 2,045 participants aged 60+ with chronic or degenerative orthopedic conditions, including osteoarthritis, spondylosis, and degenerative disc disease, were included. Phenome-wide association studies (PheWAS) were conducted using multiple logistic regression models, adjusted for key factors such as age, sex, activity levels, and the presence of sleep disorders (e.g., sleep apnea, insomnia) over the entire monitoring period.

Results: The study sample had a mean age of 63 ± 8.6 years, with 62% women. On average, participants slept 6.75 hours per night, with sleep composition consisting of 16.8% REM sleep, 10.9% deep sleep, 10.7% wakefulness, and 59.3% light sleep. A paired t-test revealed significant changes in sleep metrics following disease diagnosis, such as more time awake (+7.4 min) and a decrease in REM sleep. PheWAS analyses notably showed increased restless sleep and higher sleep variability were linked to greater odds of developing cervical spondylosis. Conversely, a higher percentage of time in light sleep—the predominant sleep state—was associated with reduced odds of developing various conditions, including cervical and lumbosacral spondylosis; shoulder, foot/ankle, and knee osteoarthritis, as well as vertebral disc disorders.

Conclusion: This study underscores the value of objectively monitored sleep data in understanding orthopedic disease risk among elderly individuals. The findings demonstrate significant shifts toward lighter sleep stages and increased wakefulness following disease diagnosis, suggesting disrupted sleep patterns. Moreover, the associations between poor sleep quality and increased risks of specific orthopedic conditions, alongside the protective effects of improved sleep, highlight the pivotal role of sleep for reducing disease risk within the elderly population.

ABSTRACT 121

PROSTATE CANCER CHARACTERISTICS AND OUTCOMES FOR MEDICARE RECIPEINTS WITH AND WITHOUT HIV.

Ryan Yu, Keith Sigel[1].
[1]Medicine. [1]Icahn School of Medicine at Mount Sinai, New York, New York.

Background: Prostate cancer is a leading cancer diagnosis in people with HIV (PWH) and a growing source of morbidity for this group. Despite the rising burden of prostate cancer among PWH, limited research on prostate cancer clinical characteristics, treatment, and outcomes has hindered HIV-specific management guidance. Therefore, we studied prostate cancer characteristics at diagnosis, treatment, and mortality by HIV status using data from the Surveillance, Epidemiology and End Results registry linked to Medicare claims (SEER-Medicare).

Methods: Using SEER-Medicare data (2004-2017), we identified PWH with prostate cancer (n=449) and an age at diagnosis- and race/ethnicity-matched comparator group of prostate cancer patients without HIV (PWoH; n=1,794). We then compared D'Amico prostate cancer risk group characteristics, treatment, and prostate cancer-specific causes of death by HIV status, adjusting for age and stratified by risk group. Last, as some prostate cancer treatments have been linked to adverse cardiovascular events, we compared the risk of these long-term events by HIV status and treatment modality using age-adjusted logistic regression models.

Results: PWH with prostate cancer had a median age of 65 (IQR: 57-69); despite matching PWoH were older with a median age of 67.5 (IQR: 61-72). Proportions of White (44%) and Black (43%) participants did not differ by HIV status. HIV infection was not associated with higher prostate specific antigen ($p=0.13$) but was associated with higher Gleason scores at diagnosis ($p<0.001$). PWH had different distributions of D'Amico and National Comprehensive Cancer Network risk scores at diagnosis with more high-risk cases than PWoH (both $p<0.05$) but no significant difference in the proportion of cases that were metastatic. There were also no differences in the use of first-line treatment modalities by HIV status. HIV was not significantly associated with worse all-cause or cancer-specific mortality for any NCCN-risk group localized cancers in the matched cohort. We did not find any difference in the long-term risk of incident cardiovascular events by HIV status in any treatment group in adjusted regression models.

Conclusion: In a population-based cohort, PWH were diagnosed with higher risk tumors than PWoH although this did not translate into worse mortality outcomes. These patients also showed no difference in prostate cancer treatment patterns by HIV status.

ABSTRACT 122

CO-DESIGNING A DIGITAL PATIENT EMPOWERMENT TOOL TO IMPROVE ENDOMETRIOSIS AND FIBROIDS CARE: INSIGHTS FROM PATIENTS AND PHYSICIANS.

Helena Zeleke, Michelle Ng[1].
[1]Product Design. [1]Neuemoon Health, New York, New York.

Background: Patients with endometriosis and fibroids frequently experience diagnostic delays due to symptom ambiguity and inconsistent provider screening. Digital tools have the potential to facilitate earlier diagnosis, but research is needed to identify features that best support patients and clinical decision-making.

Objective: To co-design a digital tool that helps patients identify and manage symptoms of endometriosis/fibroids, as well as communicate these symptoms to their healthcare providers in a way that improves care experiences.

Methods: Semi-structured Zoom interviews were conducted with four patients and four healthcare providers to explore diagnostic barriers and potential digital tool functionalities. Interviews lasted 20–60 minutes, focusing on experiences with symptom recognition, care pathways, and digital tool utilization. A literature review was also performed to identify best practices in digital tool development for endometriosis and fibroids. Key themes were synthesized to guide tool design.

Results: Patients valued online communities for peer support and sought tools to interpret test results independently. They described specialist visits as more thorough than those with general OB-GYNs and noted frequent dismissal of non-reproductive symptoms without specialist referrals. Specialists emphasized the need for biomarker-based screening and suggested standardized questionnaires to support primary care providers. OB-GYNs confirmed that routine screening for endometriosis and fibroids is uncommon unless patients explicitly report symptoms. The literature review identified evidence-based strategies and gaps in existing digital tools.

Conclusion: Findings informed three core design features: (1) a community-building platform for patient support, (2) a concise symptom questionnaire covering pain, bleeding, timing, and management strategies, and (3) a provider directory allowing patients to rate experiences based on respectfulness and consultation quality. These features aim to empower patients, enhance provider engagement, and improve diagnostic timeliness.

ABSTRACT 123*

MEASUREMENT OF GLOBAL SAGITTAL ALIGNMENT PARAMETERS IN PATIENTS WITH SPINE FUSION USING EOS FULL-BODY X-RAYS.

Alexander Yu, Samuel Cho[1].
[1]Orthopaedics. [1]Icahn School of Medicine at Mount Sinai, New York, New York.

Introduction: The introduction of biplanar X-ray systems has enabled the development of global sagittal alignment parameters. Studies have introduced cranial sagittal vertical alignment (CrSVA) parameters, which better correlate with patient outcomes than traditional methods. These parameters are effective predictors of postoperative outcomes following deformity surgery and may be useful in spinal fusion surgery—the most common procedure for elderly patients. However, the impact of spinal fusion on global sagittal alignment is not well-defined. This study aims to evaluate how fusion status, the number of levels fused, and the region of the spine fused influence global sagittal alignment.

Methods: A retrospective review was conducted on 1128 patients, collecting data on age, sex, prior spine surgery, and outcomes. Radiographic parameters of global spinal alignment, including CrSVA to the sacrum (CrSVA-S), hip (CrSVA-H), knee (CrSVA-K), and ankle (CrSVA-A), as well as cranium-hip-sacrum (CrHS), cranium-knee-sacrum (CrKS), and cranium-ankle-sacrum (CrAS) angles, were measured from biplanar full-body X-rays. Multivariable logistic regression models identified predictors of these radiographic parameters.

Results: The study included 395 patients with normal spine pathology and 167 who underwent spinal fusion. The normal group had a mean age of 49 years (48.1% men), while the fusion group had a mean age of 60.6 years (28.7% men). Radiographic parameters differed significantly between the groups. The fusion group showed higher CrSVA-S (4.29 cm vs. 3.1 cm), CrSVA-H (0.26 cm vs. -1.1 cm), CrHS (23.26° vs. 20.6°), CrKS (3.81° vs. 2.4°), and CrAS (1.27° vs. 0.8°). In the fusion cohort, age was linked to changes in CrSVA-S, CrSVA-K, CrHS, CrKS, and CrAS. Male sex was associated with increases in CrSVA-S, CrSVA-H, CrSVA-K, and CrSVA-A. The number of fused levels correlated with increases in CrSVA-S, CrHS, CrKS, and CrAS. Thoracic fusion reduced CrSVA-S, CrKS, and CrAS, while cervical and lumbar fusions showed no significant effect.

Discussion: Spinal fusion significantly impacts global sagittal alignment, especially with increased levels fused, affecting CrSVA and associated parameters. These results align with previous research, highlighting how spinal fusion alters sagittal alignment, influencing postoperative outcomes.

SECTION 3:

Student Index

Note: Names with astericks (*) are MSTAR abstracts that were presented in MSTAR Research Day on September 17, 2024.

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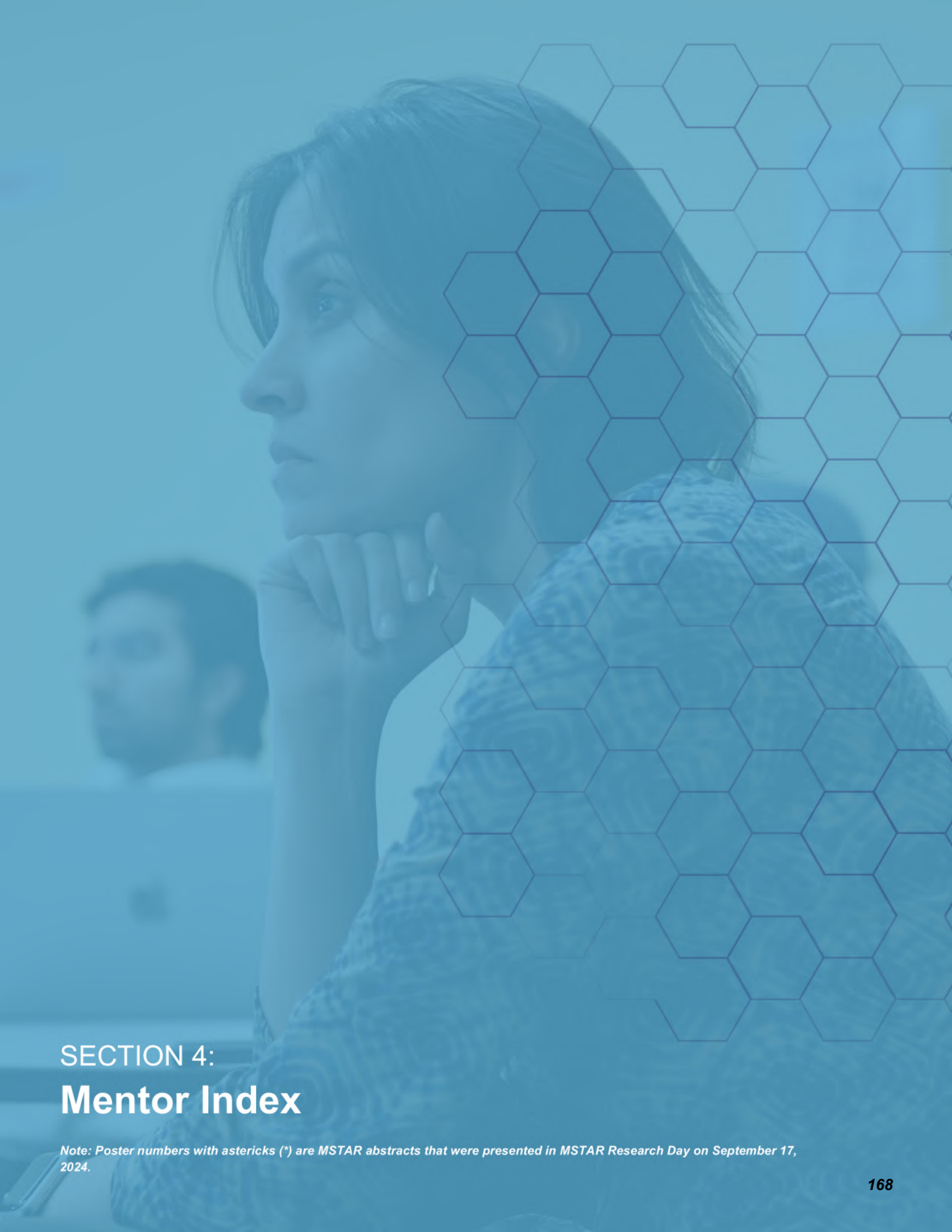

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