Degree: MPH-45

Field of Study: Epidemiology

Practicum Project Abstracts 2023

Project Title	Project Summary or Abstract
Clinical prediction model for anal high-grade squamous intraepithelial lesion (HSIL) screening	Background: Timely treatment of anal high-grade intraepithelial lesions (HSIL) prevents progression to anal cancer. Available screening tools include anal cytology and high-risk HPV testing, but they have inconsistent and suboptimal performance. This study aimed to develop a clinical prediction model to optimize anal cancer screening. Methods: Patients' medical records from two institutions were reviewed to identify candidate predictors of HSIL. A prediction model was built using elastic net and internally validated with five-fold cross-validation. External validation was performed in a population from a third institution. The initial candidate predictors were age, sex, HIV status, history of genital HPV-related disease, immunosuppressant use, anal cytology, anal high-risk HPV status, and interaction terms between HIV status and high-risk HPV infection, and HIV status and history of genital HPV-related disease. Results: Among 536 patients included in the model development, 382 (71%) were HIV-positive, 168 (31%) were women, and mean age was 49.2 (SD 12.1). The prevalence of HSIL was 21% (114/536). The following predictors were selected: age, sex, anal cytology, immunosuppressant use, history of genital HPV-associated disease, and the two interaction terms. The AUROC in the test set was 0.80. The external validation set consisted of 242 patients, of whom 224 (93%) were male, 159 (66%) were HIV-positive, and mean age was 50.5 (SD 13.5). The prevalence of HSIL was 37% (90/242). In this dataset, the AUROC was 0.73 (95% CI 0.67; 0.80). Conclusions: This clinical prediction model demonstrated a promising performance, and it can be particularly useful when HPV genotype is unknown.
Association of Frailty Score and Decision to Pursue Conservative management in older adults with advanced kidney disease	Introduction: Patients with chronic kidney disease have a higher risk of being frail. Frailty predicts decreased survival in older adults once they initiate hemodialysis. To date, no study has looked at using frailty in dialysis decision making. Methods: This study investigated the association between educating patients on their frailty score and dialysis decision making in patients over 65 years seen in a renal palliative care clinic. Patients

	were educated on their frailty status, measured using the Fried Frailty Index (FFI). Data was collected between August 2022-February 2023. The outcome was choice of dialysis or conservative management. Multivariate logistic regression was used to calculate odds ratios (OR) and 95% confidence intervals (CI). Secondary analysis evaluated the odds of transitioning to hospice care and loss of an activity of daily living. Results: Twenty patients were included in this study. Of the 15 patients with FFI 4-5, 14 chose conservative management and 1 chose dialysis. Of the 5 patients with FFI 0-3, 3 chose conservative management and 2 chose dialysis. FFI 4-5 had an OR of 14.57 (95%CI 0.53,402.69) compared to FFI 0-3 for choosing conservative management and an OR of 0.20 (95%CI 0.00,10.68) for choosing dialysis. The OR for transitioning to hospice care and losing an activity of daily living in FFI 4-5 vs. 0-3 were 1.70 (95%CI 0.11,25.05) and 5.34 (95%CI 0.41,70.15), respectively. Conclusion: Patients who are educated that they are more frail are more likely to choose conservative management. The small sample size limits the generalizability of the findings.
Quantifying the cardiovascular burden of extreme heat: A meta-analysis of 400 laboratory-based heat exposure studies	Background: Heat waves are associated with increased fatalities from major cardiovascular events. This has been attributed to cardiac strain occurring secondary to thermoregulatory increases in skin perfusion. However, our understanding of these adjustments has come primarily from laboratory-based research employing encapsulated heating modalities. We evaluated whether cardiac strain seen in this work reflects that experienced during exposure to high ambient temperatures. Methods: We systematically reviewed published literature to identify studies examining heart rate and secondary cardiac outcomes in volunteers rendered hyperthermic with water-perfusion suits (encapsulated) or exposure in a climate chamber (unencapsulated). Meta-analyses were conducted to evaluate whether relations between core temperature and cardiac outcomes were modified by heating modality. We also estimated associations between ambient heat index and thermal and cardiac responses. Results: 586 effect estimates from 406 studies were included. Heart rate was 7 beats/min [95% CI: 3, 13] greater in the perfusion suit vs. climate chamber studies ($P < 0.001$). Similarly, heat-induced rises in cardiac output, systolic pressure, and rate pressure product were exacerbated in suit studies ($P \leq$

	0.036). In the chamber studies, core temperature and heart rate increased up to 1.0°C [0.8, 1.3] and 32 beats/min [26, 37] (P < 0.001) in conditions experienced in deadly North American heat waves (heat index: 50-67°C). Conclusions: Our understanding of the effect of heat on cardiovascular strain comes from encapsulated heating modalities, which we show overestimate heat-induced cardiac burden. To support public health research on extreme heat, we provide the first empirical estimates demonstrating considerable thermal and cardiac strain is experienced during heat waves.
Differences in Clinical Care and Outcomes in Admissions with Cardiogenic Shock to Cardiac Intensive Care Units in the United States and Canada: Insights from the CCCTN Registry	Background: Cardiogenic shock (CS) is associated with 30-40% in-hospital mortality. Significant inter-hospital heterogeneity in therapies have been described related to the lack of high-quality evidence. Little is known about the contemporary differences in care practices and outcomes of patients with CS in the United States (US) and Canada. Methods: The Critical Care Cardiology Trials Network (CCCTN) is research network of tertiary cardiac intensive care units (CICUs). Between 2017 and 2021, consecutive CICU admissions during 4 annual 2-month periods were captured. Data from 29 American and 6 Canadian sites were submitted to the coordinating center (TIMI Study Group, Boston, MA). Results: Among 17852 CICU admissions, 18% had CS (n=3,297, 19% US vs 14% Canada). The underlying cause of CS was related to acute myocardial infarction in 26% of patients (25% US vs 42% Canada, p less than 0.0001). US and Canadian CS patients had similar baseline risk, as measured by Sequential Organ Failure Assessment (SOFA) score (7.0, p=0.77). Invasive hemodynamic monitoring and temporary mechanical circulatory support (MCS) were used more frequently in the US. Adjusted for age, sex, SOFA, presence, location of cardiac arrest and transfer status, in-hospital mortality was lower for patients in the US vs. Canada overall (29.2% vs 38.7%, p=0.0025; adjOR 1.53, 95% CI 1.16-2.02). Conclusions: In a contemporary North American registry, management of patients with CS was heterogenous between the US and Canada. Differences in the use of critical care therapies, including invasive monitoring and MCS, may contribute to the variation in outcomes.
Epstein-Barr-Virus DNA associated with	Background: Conjunctival-squamous-cell-carcinomas (cSCC) represent a sub-type of ocular-squamous-cell-neoplasia. Zimbabwe reports incidence rates of cSCC >30-fold higher than the global

conjunctival squamous cell carcinomas from Zimbabwe.	average. HIV-infection increases cSCC risk, implicating an, as yet unknown, infectious etiology. We evaluated presence of viral DNA for multiple herpes viruses and HPV types in tissue from conjunctival eye lesions. Methods: We conducted a case-control study that retrieved formalin-fixed-paraffin-embedded (FFPE) blocks from histologically confirmed cSCC and pre-cancer cases, from histopathology archives in Zimbabwe, from 2015 to 2019. Benign eye lesions were included as controls, matched by sex and age. DNA extraction and testing was performed using the Luminex-bead-based-assay. Virus associations were calculated as odds ratios using a multivariable logistic regression model, adjusting for age and sex, on STATA V17.0. Results: A total of 345 cases and controls were included in the study; 226 cases (78 precancers and 148 invasive-cancers) and 119 controls. No significant differences in mean age and gender were observed by case status. Mean age for all participants was 47.8years (SD=15). The most detected virus was EBV1, showing strong association with cSCC (aOR 5.58; 95% CI 2.99-10.42) and marginal association with pre-cancer (aOR 2.13; 95% CI 1.00-4.51). HPV6 was associated with benign lesions (aOR 0.25; 95% CI 0.08-0.75). Conclusions: EBV, an established carcinogen, likely plays a role in conjunctival cancer. Our data do not support an association between conjunctival pre-cancer and cSCC lesions, and mucosal HPV or beta HPV, despite these viruses being a focus of prior investigations. As expected, HPV 6 was detected more in benign lesions.
Benefit of perioperative chemotherapy and radiotherapy in soft tissue sarcoma in recurrence and survival. A systematic review and comparative meta-analysis	Background: Perioperative adjuvant therapy is commonly used in completely resected soft tissue sarcomas management to decrease recurrence risk and increase survival rates, but its efficacy is uncertain. We aimed to evaluate the impact of adjuvant therapy on local recurrence (LR), disease-free survival (DFS), and overall survival (OS) in soft tissue sarcoma patients through a comprehensive search of multiple databases. Methods: Extracted data was used to calculate hazard ratios (HR) for LR, DFS, and OS using a random-effects model. A meta-regression and Egger's test were conducted to explore PH assumptions and publication bias, respectively. Restricted mean survival time (RMST) analysis was also performed after digitalization of published Kaplan-Meier plots to collect individual patient data. Results: A total of 2,973 patients from 21 studies were included in the analysis. No statistically

	significant differences were found in OS (HR = 0.803, 95% CI 0.593 to 1.089, p = 0.158) or LR (HR = 0.743, 95% CI 0.525 to 1.050, p = 0.092). However, DFS showed significant benefit (HR = 0.550, 95% CI 0.398 to 0.759, p < 0.001); albeit marginally (RMST = 1.674 months, 95%CI 0.785 to 2.563, p < 0.001). Meta-regression analysis of DFS found PH assumption was not met (p = 0.021). Egger's test suggested publication bias with respect to DFS (p < 0.001). Conclusions: Perioperative adjuvant therapy may have modest effects on LR, DFS, and OS in patients with resectable soft-tissue sarcomas, albeit non-significant. Findings suggest that adjuvant therapy may not offer significant benefit in terms of prolonging survival or preventing recurrence. These results have significant implications for clinical practice, and further research is needed to identify effective treatment strategies.
Impact of Synoptic Operative Reporting as a Quality Indicator for Thyroid Surgery	Background: Narrative operative reports (NORs) often lack important information that can influence the management of benign and malignant thyroid disease. This study aimed improve information consistency by validating a synoptic operative report (SOR) for thyroid surgery. Methods: A nationally developed SOR was piloted by 5 thyroid surgeons over 6 months. Overall completeness between pre-pilot NORs and SORs was compared using the Wilcoxon rank sum test and linear regression adjusting for diagnosis (benign vs. malignant), procedure type (partial vs. total thyroidectomy), and surgeon volume (< 25 vs. >= 25 thyroidectomies/year). Chi-square and Fisher's exact analyses assessed the associations between item-specific reporting frequencies and report type. Results: Amongst 144 NORs and 77 SORs, 39% were reported for malignant disease. Median overall completeness was significantly higher in SORs (100[100-100]%) compared to NORs (70[47-75]%, p < 0.001) with comparable results when stratified by benign (SOR:100[100-100]%; NOR:70[70-77]%, p < 0.001) or malignant disease (SOR:100[100-100]%; NOR:47[41-65]%, p < 0.001). Adjusting for confounders, SORs were 33.67% (95% CI 30.17-37.17, p < 0.001) more complete than NORs. Anatomic structures including the status of the recurrent laryngeal nerve were reported consistently in both SORs (100%) and NORs (98%, p=0.75). Cancer-specific items including gross extrathyroidal extension, invasion of structures, presence and location of gross residual disease were 100% reported

	in SORs, compared to 38% ($p < 0.001$), 32% ($p < 0.001$), 15% ($p < 0.001$), and 7% ($p < 0.001$) in NORs, respectively. Conclusions: Implementation of an SOR for thyroid surgery enhanced overall completeness and delivery of cancer-specific information, which can improve quality of postoperative care. Future investigation of SOR user satisfaction may help encourage its widespread adoption.
The Role of vitamin D deficiency and race as independent risk factors for COVID-19 disease severity	Background: Vitamin D deficiency and the risk of COVID-19 infection, hospitalization, and death, are common among Black and African Americans. Deficiencies in vitamin D levels are associated with increased risk of infection, disease severity, and mortality due to COVID-19. The objective of this study is to examine whether vitamin D deficiency is an independent risk factor for COVID-19 related outcomes among racial/ethnic minority groups. Methods: This is a retrospective cohort study of adults (>=18 years) with laboratory-confirmed COVID-19 diagnosis and documentation of vitamin D measurements up to one year prior to COVID-19 testing. Vitamin D deficiency was defined as serum 25-hydroxy vitamin D concentrations less than 20 ng/mL. Multivariable analyses examined the association between vitamin D deficiency and COVID-19 related hospitalization, ICU admission, and death, controlling for age, sex, and race/ethnicity. Results: A total of 15,623 COVID-19 positive patients had a documented vitamin D measurement. In multivariable analyses, vitamin D deficiency was associated with an increased odds of COVID-19 hospitalization (OR, 1.52; 95% CI: 1.39-1.68; p
Association of food security and phthalate exposure: Findings from NHANES 2001-2018	Food insecurity (FI) is defined as having low or very low food security. FI is associated with increased consumption of highly processed and fast foods, which are known to contain contaminants such as phthalates. Phthalates are synthetic chemicals used to impart desirable properties to plastics. Phthalates are known to have numerous adverse health impacts such as endocrine disruption, obesity, and Type II diabetes. A direct association between FI and phthalate exposure has not been studied. Data from 2001-2018 of the National Health and Nutrition Evaluation Survey (NHANES), a nationally

	representative survey, was used. Household food security and urinary phthalate metabolite concentrations for 9 metabolites were collected for all participants. Analyses accounted for sampling structure using survey weights. Linear regression was performed to analyze the percent difference in mean phthalate metabolite concentration among households with marginal to very low food security compared to households with high food security. Primary model was adjusted for age, gender, education, and cycle year. Sensitivity analyses stratified the primary model by age and gender. Decreasing food security was associated with a higher mean concentration of urinary phthalate metabolites. The effect was most pronounced for MnBP, MiBP, and MBzP, which are present in processed and fast foods. Women had higher percent changes in mean concentration of phthalate metabolites than men. Phthalate exposure driven by decreasing food security is a potentially modifiable pathway. Interventions to increase food security and/or decrease dietary phthalate exposure could potentially reduce the prevalence of related health effects, especially in already overburdened populations.
Predicting Survival After Hepatocellular Carcinoma Resection Using Deep Learning on The Cancer Genome Atlas Histological Slides	BACKGROUND: Poor understanding of factors associated with HCC prognostic outcomes currently limits the ability of clinicians to appropriately target therapeutic interventions according to risk level. This is limiting the success of HCC treatments: the majority of cases treated with curative resection or ablation experienced recurrence within 5 years. Artificial Intelligence (AI), which is capable of identifying patterns between thousands of parameters, could be used to develop granular risk stratification tools that more accurately predict prognostic outcomes, enabling clinicians to more effectively target treatments to higher risk patients. METHODS: This study investigated whether a model based on convolutional neural networks called CHOWDER trained on histology images and survival data can a) accurately discriminate between high and low risk groups for survival and b) predict survival more accurately than a composite score consisting of baseline clinical, biological, and pathological features. RESULTS:After a median follow-up of 120 months, the hazard ratio for death in the group determined to be high risk by CHOWDER is 2.19; 95% confidence interval [CI], 1.50 to 3,21; $P < 0.005$ compared to the low risk group. CHOWDER significantly outperformed the composite score with a mean c-index of

	0.7 compared to the composite score with a mean c-index of 0.58 (p=0.04). CONCLUSION:These findings suggests that artificial intelligence applied to histological images can help refine the prediction of HCC prognosis.
Long-term outcomes of sentinel lymph node biopsy following neoadjuvant chemotherapy	Background: Sentinel lymph node biopsy (SLNB) alone is now frequently offered to women with initially node-positive breast cancer who convert to pathologically node negative (nodal pCR) following neoadjuvant chemotherapy (NAC), despite limited long-term data regarding the oncologic safety of this approach. The aim of this meta-analysis was to evaluate the long-term oncologic outcomes associated with SLNB alone following NAC for initially node-positive breast cancer. Methods: A systematic review and meta-analysis was conducted according to PRISMA guidelines. Medline (Ovid), Embase, and Cochrane Central Registry were systematically searched for studies comparing women undergoing SLNB or ALND following NAC for initially clinically node-positive breast cancer. Included studies reported one of the following outcomes: axillary (AR), locoregional (LRR) or distant recurrence (DR); disease-free survival; overall survival. A random effects meta-analysis was used to calculate weighted pooled estimates for all outcomes. Variability across studies due to heterogeneity was estimated using I2 statistics. Results: Nine observational studies were eligible for meta-analysis, including data for 3,003 patients . No significant differences were observed in AR (pooled risk ratio (RR) 1.02 (95% CI: 0.46-2.29, I2=0.0%), LRR (RR 0.70, 95% CI: 0.45-1.10, I2=0.0%), nor overall mortality (RR 0.66, 95% CI: 0.33-1.33, I2=0.0%) between patients undergoing SLNB alone versus ALND after NAC for initially node-positive breast cancer. Conclusions:

	Among patients who achieve a nodal pCR with NAC, SLNB alone does not result in significantly different oncologic outcomes compared to ALND.
Mental health state during the COVID-19 pandemic and its association with COVID-19 vaccine uptake	Background: The unprecedented crisis of COVID-19 generated stress and modified lifestyles, which contributed to poor quality of life. Past studies have emphasized that perceived stress can have negative impacts on attitudes toward the COVID-19 vaccination. Methods: This is a cross-sectional study conducted in Puerto Rico between November 2020 and June 2021. Data were collected using an automated surveillance system. The survey tool consisted of a primary questionnaire and 3 additional modules. A total of 531 participants were included in our analysis. To understand the association between mental health state during the pandemic and vaccination against COVID-19, we used a multivariate logistic regression model. Results: The mean age of the participants was 51.15 years. Among participants who reported having poor mental health status during the pandemic, most (43.42%) had income less than $20,000, 17.1% reported that they or their family member was physically sick due to COVID-19, and 65.8% of the participants also reported they had faced a reduction in capacity to make money. Most participants who were unvaccinated had an income below $ 20,000. Our logistic regression model showed that those who had excellent mental health status were 58% less likely (OR = 0.42, 95% CI:0.21 – 0.82) to get vaccinated against COVID-19 compared to those who had poor mental health status. Conclusions: Contrary to expectations, our results suggest that people who reported having an excellent mental health state might have been more likely to refuse the vaccine or delay taking the vaccine.
Intraoperative Technical Performance Score Predicts Outcomes Following Congenital Cardiac Surgery	Background: The utility of the intraoperative technical performance score (IO-TPS) in predicting outcomes after congenital cardiac surgery remains unknown. Methods: Data from patients undergoing surgery for congenital heart disease from January 2011 to December 2019 at a single institution were retrospectively reviewed. Intraoperative echocardiograms were used to assign IO-TPS for each index operation (class 1, no residua; class 2, minor residua; class 3, major residua). The primary outcome was a composite of in-hospital mortality, transplant, unplanned reintervention in the anatomic area of repair, and new permanent pacemaker implantation. Secondary outcomes included postdischarge (late) mortality or transplant and

	unplanned reintervention. Associations between IO-TPS and outcomes were assessed using logistic (primary) and Cox or competing risk (secondary) models, adjusting for preoperative patient- and procedure-related covariates. Results: The primary outcome was observed in 784 (11.5%) of 6793 patients who met entry criteria. On multivariable analysis, IO-TPS was a significant predictor of the primary outcome (class 2: odds ratio, 1.7 [95% CI, 1.4-2.0; P < .001]; class 3: odds ratio, 6.0 [95% CI, 4.0-8.9; P < .001]). Among 6661 transplant-free survivors of hospital discharge observed for up to 10.5 years, there were 185 (2.8%) deaths or transplants and 1171 (17.6%) reinterventions. Class 3 patients had a greater adjusted risk of late mortality or transplant (hazard ratio, 2.2; 95% CI, 1.2-4.2; P = .012) and late reintervention (subdistribution hazard ratio, 2.5; 95% CI, 1.8-3.3; P < .001) vs class 1 patients. Conclusions: IO-TPS is significantly associated with adverse early and late outcomes after congenital heart surgery and may serve as an important adjunct for self-assessment and quality improvement.
Risk Factors for the Development of Surgical Site Infections in Africa: A Secondary Analysis of the ASOS-2 Trial	Background: The African Surgical Outcomes-2 (ASOS-2) Trial was a cluster-randomized trial of 28,892 patients in 33 African countries that followed hospitalized surgical patients postoperatively until discharge censured at 30 days. The most common complication was surgical-site or body-cavity infection (SSI). Methods: A secondary analysis of the ASOS-2 Trial was performed. All study patients were included. Complete case analysis was used for missing data. The primary outcome was SSI. Exposure variables included age, sex, ASA Physical Status, and medical comorbidities in addition to surgical type, indication, urgency, and severity. Univariate logistic regression was performed for each exposure variable. Three-level mixed effects logistic regression with random intercepts for each hospital cluster nested in the country was used with each exposure variable alone and with other variables in a multivariate model. Results:

	Major risk factors included ASA IV Physical Status, major surgical severity, infection as an indication, and many surgical types, most notably gastrointestinal or hepatobiliary surgery. Moderate risk factors included ASA III Physical Status, diabetes, intermediate surgical severity, urgent or emergent procedures, trauma or noncommunicable disease as an indication, and certain surgical types. Obstetric and otolaryngology procedures had the lowest risk of SSI. Conclusions: Many risk factors are associated with SSI in African patients. However, prospective studies specifically focused on identifying risk factors for SSI in African surgical patients are needed.
Examining the Cumulative Protective Effects of Socioeconomic Status on Smoking in a Nationally Representative Sample of Racial and Ethnic Sexual Minorities (SM)	Background: Socioeconomic status (SES) is protective against smoking. However, the Minorities' Diminished Returns Theory posits that SES have a weakened effect for those with minoritized identities because of systems of oppression. This study examined if BIPOC identity moderated the relationship between SES and smoking among sexual minorities (SM). Methods: We used Wave 5 (December 2018-November 2019) of the Population Assessment of Tobacco and Health Study. The exposure was SES index (educational level, household income, home ownership, health insurance; count 0-4). The primary outcomes were cigarettes per day (CPD; count) and past 30-day e-cigarette use (binary). Secondary outcomes were ever cigarette and e-cigarette use, lifetime cigarette use, and number of e-cigarette puffs. The moderator was race/ethnicity. Weighted logistic regression and zero-inflated negative binomial regression models with two-way SES-race/ethnicity interactions were implemented in Stata 17SE. Analyses were restricted to N=2,670 SM. Results: BIPOC identity moderated the SES-smoking association. Whereas higher SES was associated with lower smoking probability for other racial/ethnic SM groups relative to non-Hispanic Whites, for Hispanic/Latine SM higher SES index was associated with elevated odds of past 30-day e-cigarette use (OR=1.95; 95% CI=1.46-2.60), ever cigarette use (OR=1.55; 95% CI=0.11-0.40), lifetime cigarette use (OR=2.23; 95% CI-1.59-3.13), past 30-day cigarette use (OR=1.72; 95% CI=1.29, 2.28), and ever e-cigarette use (OR=1.89; 95% CI=1.37-2.62).

	Conclusions: Higher SES elevated smoking risks in SM groups. Future research is needed on the context of SES and smoking among Hispanic/Latine SM, including discriminatory experiences and institutions that may influence their smoking behavior.
The effect of Covid-19 infection control measures on the risk of surgical site infection in adult patients who underwent appendectomy in Philippine General Hospital: Data from the Surgical Site Infection Surveillance Program	Background: Philippine General Hospital (PGH) adapted stringent infection control measures to mitigate the transmission of the virus in the hospital during the COVID-19 pandemic. This study aimed to evaluate the impact of the stricter infection control measures on the risk of surgical site infection following appendectomy before and during the COVID-19 pandemic. Methods: This was a single center retrospective cohort study using prospectively collected data in the PGH Surgical Site Infection Surveillance Program from January 2019-December 2022. Multivariable logistic regression was done to investigate the association of stricter infection control using timing of surgery (pre-COVID and during COVID) and SSI while holding other factors constant. Results: Among 895 patients, 836 (93.4%) were included in the complete case analysis, with 21.8% overall incidence of SSI. 517 (61.8%) underwent appendectomy pre-COVID (mean age 30.8 [SD 11.1]; 69.8% male; 22.7% SSI) and 319 (38.2%) underwent surgery during the pandemic (mean age 33.1 [SD11.8]; 71.4% male; 20.4% SSI). The odds of developing SSI post-appendectomy during the pandemic were not significantly lower compared to pre-pandemic (OR 0.87, [95% CI 0.62,1.24], p = 0.44). However, when stratified on intraoperative findings, the odds of developing SSI during COVID were significantly lower among patients with non-perforated appendix (OR 0.52, [95% CI 0.28, 0.97], p=0.04). Conclusions: These findings suggest that implementation of stricter infection protocol during the pandemic may be associated with lower surgical site infection rates in post-appendectomy patients for non-perforated appendix. Whether which component of the protocol lead to this effect requires further research.
Be Kind to Your Behind: A randomized controlled trial	Background: Perianal conditions of fissures and hemorrhoids affects up to 50% of North Americans during their lifetime. These patients suffer from pain, bleeding, and itching. Treatments include sitz-

on bidet use in the treatment of perianal disease	baths, fiber, and creams. Anecdotally, water bidets may offer some benefit for hemorrhoidal and fissure symptoms. Methods: This was a randomized-controlled trial. Patients presenting to general surgeons suffering from either hemorrhoids or fissures, of any grade, were randomized to either bidet or no-bidet use for 12 weeks. Patients' symptoms were measured at baseline (0 weeks), 6 weeks, and 12-weeks through a self-reported proctological symptom score (PSS) and a SF-12 quality of life survey, which measures a physical component score (SF-12-PCS) and a mental component score (SF-12-MCS). A linear regression model was used to assess PSS and SF-12 scores at 12 weeks with bidet use, followed by a multivariate regression model adjusting for compliance, and a sensitivity analysis for hemorrhoids only or fissures only. Finally, a longitudinal regression model was used to assess the rate of symptom improvement. The study was powered for 120 patients to show a 20% improvement. 35/120 patients were enrolled with follow-up data for 24 patients. Results: After 12-weeks, bidets offered no improvement in PSS scores (19.33 vs 8.87, p=0.66), SF-12-PCS scores (48.80 vs 47.11, p=0.69), or SF-12-MCS scores (42.89 vs 43.67, p=0.87). A multivariate analysis adjusting for compliance also found no difference in any outcomes. A longitudinal analysis found PSS scores improved faster at the 6-week mark for bidet users (p=0.02). Conclusions: The preliminary analysis does not identify any significant differences in outcomes.
Acute Serum Androgen Levels and Post-Rehabilitation Functioning in Spinal Cord Injury: Swiss Spinal Cord Injury (SwiSCI) Inception Cohort Findings	Background: Spinal cord injury (SCI) patients face complications such as acute androgen deficiency, but its impact on post-rehabilitation functioning is unknown. This study examines associations between serum androgen levels and functioning after initial rehabilitation among SCI patients. Methods: Data were collected from participants in the SwiSCI inception cohort during their first specialized inpatient rehabilitation - including demographics, clinical characteristics, functioning quantified with the interval-based Spinal Cord Independence Measure version III (SCIM III), and serum levels of total testosterone, free testosterone, sex hormone-binding globulin, dehydroepiandrosterone, and dehydroepiandrosterone sulfate measured by enzyme-linked immunosorbent assays. Missing data were handled by multiple imputation. Multivariable exploratory regression analyses examined associations between baseline androgens and functioning at discharge, adjusting for demonstrated confounders. Results: Participants (N=80; 15(19%) female) had a median follow-up of 167 days (IQR=128-224).

	Lower baseline free testosterone levels were significantly associated with lower functioning at discharge. In males, a one standard deviation increase in free testosterone (4 pg/ml) resulted in a 34% greater discharge functioning (95% confidence interval (CI): 14.68-48.97, p=0.002). The association persisted after adjusting for confounders (β=25.1, CI: 7.09-39.55, p=0.009). A significant association for total testosterone (β=34.2, CI: 17.55-47.49, p < 0.001) was observed after excluding individuals with metabolic syndrome. No associations were found for other androgens nor among females, nor was there evidence of effect modification by age. Conclusions: This exploratory study found lower acute free testosterone levels associated with reduced post-rehabilitation functioning in male SCI patients. Further research is needed to confirm findings, understand mechanisms, and explore interventions targeting androgen deficiency.
Dose-response effect of cigarette smoking on asthma-related emergency care visits: a US nationwide cross-sectional study	Background: There is a paucity of data investigating the dose-response effect of cigarette smoking on asthma-related emergency room or urgent care (ER/UC) visits. Methods: We conducted a cross-sectional analysis of adult smokers with asthma (≥100 cigarettes in a lifetime, smokes every day or some days) using National Health and Nutrition Examination Survey collected from 2009 to 2018. Our primary aim assessed the association between cigarette consumption as a continuous variable and asthma-related ER/UC visits using multivariable logistic regression, with adjustment for baseline characteristics. We estimated the attributable risk percent based on the odds ratio (OR) [=(OR-1)/OR] due to smoking and calculated the predicted dose-response probability for ER/UC visits based on the number of cigarettes consumed. Results: We obtained data for 466 adult cigarette smokers with asthma (mean age 43 years; female 68%; non-Hispanic White 68.2%), representing 3.77 million adults. Of these smokers, 18.2% had asthma-related ER/UC visits. Smokers who consumed 1 additional cigarette/day experienced 1.04 times the odds of requiring ER/UC visits (adjusted OR 1.04; 95 CI% 1.01-1.07) compared to smokers who did not. This adjusted OR of 1.04 is equivalent to an attributable risk percent of 3.8%, which suggests that 3.8% of ER/UC visits could be eliminated if smokers decreased consumption by 1 cigarette/day. Our prediction model projected that higher cigarette consumption was associated with a higher probability of asthma-related ER/UC visits (1 cigarette/day=12%, 10 cigarettes/day=15%, 20 cigarettes/day=20%).

	Conclusions: This study demonstrated a positive association between higher cigarette consumption and a higher risk of severe asthma exacerbation requiring ER/UC visits.
Assessing Workplace Breastfeeding Support Among Pharmacist Mothers in a U.S. Population	Background: Anecdotally, pharmacist mothers experience significant barriers to expressing breastmilk at work, but there is limited published data on this topic. The aims of this study are to assess the current level of breastfeeding support among U.S. pharmacist mothers and to compare the level of support experienced by mothers in different pharmacy job settings. Methods: A cross-sectional study was conducted using a convenience sample (n = 271) of U.S.pharmacist mothers recruited through social media to take an electronic survey. Pharmacy job setting was split into retail (independent and chain) and non-retail (hospital and other). Breastfeeding support was assessed by the validated Workplace Breastfeeding Support Scale (WBSS). The primary outcomewas the mean WBSS score with secondary outcomes including the mean scores of the four component dimensions of the WBSS: break time, environmental support, technical support, and workplace policy. Lower WBSS scores indicate less breastfeeding support. Statistical tests were performed in Stata and included Chi-squared tests, Fisher's exact tests, and multivariable linear regression. Results: This study showed a highly statistically significant association ($p < 0.001$) between working in a retail pharmacy job setting and lower mean WBSS scores. In addition, three of the four WBSS sub-dimensions (break time, environmental support, and technical support) had a highly statistically significant association with retail pharmacy job setting; differences in the break time dimension were the most notable. Conclusions: U.S. pharmacist mothers, especially those working in retail chain pharmacies, experience challenges with expressing breastmilk at work
Investigating the impact of prenatal care on the incidence of cleft lip and palate: a multinational case-control study	Background: Cleft lip and palate (CLP) is the most common congenital birth defect of the head and neck. Several lifestyles and environmental factors have been implicated in the etiology of CLP. Evidence supporting these risk factors, however, is almost exclusively derived from high income country populations. In this study, we aim to investigate access to prenatal care as a potential risk factor for CLP in the low and middle income (LMIC) country context. Methods: We performed a retrospective case-control study within a multinational population of LMIC children. Cases were defined as children with non-syndromic CLP who presented to a series of

	charitable cleft missions between the ages of 6 months and 4 years. Controls were defined as newborns delivered at public hospitals within the same catchment area and within 1-week of case identification. Exposure variables were measured by structured interviews and included a maternal history of access to prenatal care and timing of prenatal care initiation. Analysis involved univariable and multivariable logistic regression. Results: We identified 3,186 cases and 2,852 controls spanning eight LMICs. After adjusting for confounding, we found that the risk of CLP among LMIC mothers who accessed prenatal care was less than that among those who did not access prenatal care by a factor of 0.46 ($p < 0.001$). We also found that the risk of CLP among LMIC mothers increased by a factor of 1.28 for every 1-month delay in initiating prenatal care ($p < 0.001$). Conclusions: Early maternal access to prenatal care results in reduced risk of CLP within an LMIC population.
Clinical outcome, disease severity, cost of hospital care and length of stay between MRSA sepsis and MSSA sepsis infection	Background: Sepsis due to Methicillin Resistant Staphylococcus aureus (MRSA) can cause poor clinical outcomes and increased length of hospital stay compared to sepsis due to Methicillin Sensitive Staphylococcus aureus (MSSA). Due to discordance among various studies in this regard, we conducted this study to determine the differences in clinical outcome, disease severity, cost of hospital care, and length of stay between MRSA sepsis and MSSA sepsis patients. Methods: We studied adult patients with MRSA or MSSA sepsis in the National Inpatient Sample (NIS) 2019 database, a nationally representative sample of all patient discharges from the US hospitals in 2019. We compared the clinical outcome, disease severity, cost of hospital care, and length of stay, adjusting for age, gender, race, primary payer, comorbidities (diabetes, renal failure and heart failure). Results:

	The study identified 6740 MRSA sepsis and 6964 MSSA sepsis patients. MRSA sepsis did not have increased clinical severity (aOR = 1.08 , 95% CI 0.99– 1.18 ,p=0.087) compared MSSA sepsis , but MRSA sepsis was associated with higher mortality (aOR = 1.16, 95% CI 1.04–1.29 , p=0.006), increase in disposition to facility than home (aOR = 1.19, 95% CI 1.09–1.30 , p=0.00) , two third of a day of additional hospitalization (95% CI 0.33–0.98 , p=0.00) and $6109 of additional cost (95% CI 1644–10573 , p=0.007) compared to MSSA sepsis. Conclusions: MRSA sepsis and MSSA sepsis had no significant difference in the clinical severity. However, MRSA sepsis patients had significantly higher mortality, increased disposition to other facility, higher cost of care and increased length of stay compared to MSSA sepsis.
Effect of Medicaid Expansion on Trauma Patients at Extreme Risk of Mortality	Abstract Background: The Affordable Care Act Medicaid expansion in 2014 has had a profound effect on healthcare delivery in the United States. This study investigates how Medicaid expansion affected the outcomes of trauma patients at extreme risk of mortality. Methods: Interrupted time series analysis with a control group, examined inpatient discharges from 2007 to 2020. The National Inpatient Sample provided over 103 million discharge records. Study cohort included patients aged 18 to 64. Primary exposure was Medicaid expansion stratified by high (Northeast, Midwest, West) and low (South) implementation regions with the low implementation region serving as control. Principal outcome was the monthly mortality rate. Results: The study included 70,381 trauma patients at extreme risk of mortality, corresponding to 346,659 National Inpatient Sample weighted patients. Overall mortality decreased .08% (95% CI -.103 to -.048; P = 0.001) per month before expansion. The downward trend in mortality was not impacted by the Medicaid expansion. Despite an increase in Medicaid per capita spending in both regions, enrollment increased only in the high implementation region. Based on national estimates, overall deaths decreased by 186 per month (95% CI 165 to 208; P= 0.001) at additional costs of $103,170 per life saved. Conclusions: Mortality decreased over the study period and Medicaid expansion did not alter this

	trend. Expenditures increased in both regions, regardless of enrollment rate. This suggests that other factors beyond Medicaid expansion may have contributed to a decrease in mortality. Further research is needed to identify these factors and their impact on healthcare outcomes.
Laparoscopic vs. open pancreaticoduodenectomy : initial institutional experience	Background: Laparoscopic pancreaticoduodenectomy (PD) is an emerging surgical technique in Canada. Perioperative outcomes associated with initial institutional experience with this technique have not been described. Methods: This was a Retrospective analysis of a prospectively maintained institutional database of sequential laparoscopic PD patients and data contained in the NSQIP Targeted Participant Use Data File (PUF) for Pancreatectomy 2019 - 2022. The propensity score was based on age, sex, BMI, comorbidities, pathology, pancreatic duct diameter and gland texture. Participants were matched based on their propensity score and the average effect of the treatment was used as the estimate for outcomes associated with laparoscopic PD. Results: 60 laparoscopic PD were performed at our institution from 2019 – 2021. 33% (n = 20) were converted to open. On PSM analysis, there was no significant difference between laparoscopic and open PD among the NSQIP collaborative for LOS (11.4d vs. 8.5d, p = 0.09), POPF (39.6% vs. 22.6%, p = 0.063), DGE (9.4% vs. 15.1, p = 0.4), superficial SSI (11.3% vs. 5.6%, p = 0.31), deep SSI (18.7% vs. 15.1%, p = 0.59), 30d readmission (24.5% vs. 18.9%, p = 0.47), or 30d mortality (3.8% vs. 3.8%). Laparoscopic PD was associated with higher 30d reoperation rate (13.2% vs. 1.9%, p = 0.03). Conclusions: Laparoscopic PD remains in the early stage of the learning curve. Despite equivalence to open PD in the majority of outcomes, improvement must be made in reoperation rates. Ongoing analysis is needed to elucidate whether outcomes become superior as technique refines over time.
Characterizing Opioid Initiations & Predictors of Long-Term Opioid Use: a retrospective cohort study using Alberta's Prescription Drug Monitoring Program data, 2012 - 2022	Background: The opioid crisis continues with over 34 000 deaths reported in Canada in 2022. While opioids are essential medications, they carry a significant risk of harm including the development of tolerance, hyperalgesia, and opioid use disorders (OUD). The aims of this study were to: 1) explore trends for all and new opioid patients; 2) describe characteristics of opioid starts; and, 3) identify predictors long-term opioid use. Methods: Using Prescription Drug Monitoring data from Alberta, Canada (Jan 2013- Dec 2023) we conducted a retrospective cohort study among opioid patients for a descriptive analysis and logistic regression to predict patient risk of continued opioid use at 1 year (primary outcome), 1.5 year and 3

	years. Results: Of 3, 558, 025 opioid initiations, 64.4% of had no subsequent opioid dispense, while 2.4% progressed to long-term use. Codeine, tramadol and oxycodone were most common starting opioids. Patients aged 65 years and over had the highest opioid initiations rate per 1000 population. Drug-use history, e.g. previous multi-doctoring [OR 8.51; 95% CI: 8.07 – 8.98] and multiple-pharmacy episodes [OR 6.59; 95% CI: 5.50 – 7.91)], was most predictive of long term use, followed by prescription-related characteristics. Compared with codeine, Fentanyl had 6.4 times the odds of long-term continuation followed by morphine and hydromorphone. Benzodiazepine or stimulant use in the previous 180 days and any previous opioid use increased odds of progression to long term opioid use by 1.8, 1.3 and 1.2 times, respectively. Conclusions: Long-term opioid use prediction can help reduce opioid exposure risks as primary prevention.
Racial survival disparities in DLBCL: Analysis of SEER data from 2010-2019	Background: The purpose of this study was to quantify the association between race (White, Black, American Indian/Alaska Native [AIAN], Asian or Pacific Islander [API]) and cancer-specific mortality among diffuse large B-cell lymphoma (DLBCL) patients. Methods: A retrospective observational study was conducted using the National Cancer Institute's 2000-2019 Surveillance, Epidemiology, and End Results (SEER) Research Plus data. Survival analyses were used to evaluate cancer-specific mortality among 4 racial groups. Cox proportional hazards regression was used to assess the difference in cancer-specific mortality across race groups adjusting for age, sex, marital status, income, rurality, and Ann Arbor Stage. Results: The analytic sample included adult US patients with DLBCL from 2010 to 2015 (N = 25,495). The majority were White (82.8%), followed by API (9.3%), Black (7.4%), and AIAN (0.5%). Age, sex, marital status, and income differed across race groups at diagnosis. The crude 2-year cancer-specific mortality for blacks was 29%, 25% for whites, 24% for American Indians/Alaska Natives, and 29% for API. Accounting for differences in patient characteristics resulted in an increased hazard risk (HR) of cancer-specific mortality for Black and Asian compared to whites (HR 1.28; 95% CI 1.18 to 1.40; and HR 1.19; 95% 1.11 to 1.29, respectively). The HR of cancer-specific mortality comparing American Indian/Alaska Natives to whites was 1.00; 95% CI .73 to 1.38. Conclusions: The study highlights various sociodemographic features at diagnosis that reflect

	disparities. It may be feasible to address some of the observed differences at diagnosis and this may translate to better outcomes among patients with DLBCL.
Digital Media Exposure and Suicidality Among Female High School Students	Background: Teenage mental health is a significant public health concern; suicide is the third leading cause of death among 15-24 year olds. Digital media use has been implicated in the mental health crisis among teens. This research aimed to examine the association between digital screen time and suicidality in US female high school students. Methods: A retrospective, cross-sectional study design with data from the 2013-2019 Youth Risk Behavior Survey was used. 21,496 respondents who had at least one of four non-missing suicidality survey responses and non-missing data regarding digital screen time, body weight perception, or weight change were included. Digital screen time, the number of hours respondents engaged in digital media use, was dichotomized as 0 to < 3 hours (unexposed n=11,918) and 3 to 5 + hours (exposed n=9,578). The primary outcome was a composite "suicidality" endpoint comprised of suicidal ideation, suicide plan, suicide attempts, and injurious attempts in the last year. Multivariable logistic models to calculate OR and 95% CI were used to estimate the association between digital media use and suicidality. Results: Suicidal ideation, planning suicide, or attempting suicide was more common among the exposed. In the adjusted analysis of screen time and suicidality, the exposed had increased odds of suicidality ($p < 0.001$) compared with the unexposed. Study results provide evidence of an association between increased digital screen time and suicidality in female high schoolers. Prolonged digital media exposure should be treated as a marker for elevated risk for suicidality in teenage females, warranting parental/health care provider monitoring.

Descending Pain Inhibition: Diagnoses and Affecting Factors	Background: Centralized pain is the hyperactivity of the nervous system often due to impaired descending pain inhibition (DPI). DPI and its association with pain diagnoses and demographic factors are woefully understudied. We compare age, biological sex, and DPI across diagnoses of new daily persistent headache (NDPH) in adolescents and pain post-total knee arthroplasty (TKA) in adults. Methods: Cross-sectional secondary data analyses were performed across two study populations via logistic regression. Post-TKA adults included were ≥ 50 years old. NDPH patients were 10-17 years old. Inclusion criteria included available height, weight, BMI, sex, age, pain scores, and quantitative sensory testing (QST) at the 3-month visits described by each study. Participant responses to QST for OA (NDPH) and CPM (TKA) determined DPI status (binary variable). Results: 94 of 248 TKA participants met inclusion criteria for secondary analysis. Median age and NRS scores were 67 and 5.67, respectively. 44.83% were CPM responders. Univariate analysis demonstrated a significant relationship between pain severity and CPM status (OR 1.29, p-value 0.023). Controlling for BMI modestly weakened the relationship (OR 1.28, p-value 0.032). There was no significant interaction between BMI and obesity status. 32 of 45 NDPH participants met criteria for analysis. Median age and NRS scores were 16 and 6.0, respectively. 81.25% were OA responders. Univariate analysis demonstrated an opposite but non-significant relationship between pain severity and OA status (OR 0.56, p-value 0.09) that was significant when controlling for BMI (OR 0.29, p-value 0.046).
Epiretinal Membrane Formation Following Rhegmatogenous Retinal Detachment Repair: A Retrospective Cohort Study	Background: This study aimed to investigate the association between the risk of epiretinal membrane (ERM) formation and type of initial surgery following rhegmatogenous retinal detachment (RRD) repair. Methods: This retrospective cohort study included eyes with RRD treated between 2011 and 2023 at Massachusetts Eye and Ear via pars plana vitrectomy (PPV), scleral buckle (SB), PPV+SB, or pneumatic retinopexy (PnR). The primary outcome was the risk of ERM formation, while the secondary outcome was the risk of ERM requiring surgery. Univariable and multivariable Cox regression was performed,

	and a hazard ratio (HR) and 95% confidence interval (95%CI) were reported. Results: Overall, 395 eyes were included. The mean age was 58.57±12.78 years and most patients were male. A significant association was observed between a lower risk of ERM formation following SB compared to PPV in the univariable analysis (HR = 0.22, 95%CI = 0.08-0.60, p = 0.003), however there was no significant association between treatment modality and ERM on multivariable Cox regression controlling for confounding factors (p = 0.26). ERM formation was found more commonly in patients who were older (p = 0.001), those with worse best corrected visual acuity at baseline (p=0.003), and those with macula-on RRDs (p < 0.001). Conclusions: Surgical modality does not have a significant association with the risk of ERM following RRD repair when adjusting for confounding variables. Age, baseline visual acuity, and macular status have important associations with risk of ERM formation.
Mortality Risk Factors in TB/HIV Co-infected Patients using Machine Learning	Background: According to the WHO (2023), Tuberculosis has ended the lives of more than 1.6 million people in 2021, making it the 2nd highest infectious killer after COVID and since tuberculosis is preventable and treatable, it would be of value to be able to predict who is more at risk from dying when living with a Tuberculosis/HIV coinfection. Methods: An observational, retrospective cohort study was conducted. After merging TB and HIV datasets from the National Health Service of the Dominican Republic, there are a total of 1,457 TB/HIV coinfected patients during the April 2019-August 2022 period. Primary outcome is death during the period. A Cox regression model was fit using elastic net with the option of using cross validation to select the correct amount of shrinkage using R. Results: Of the 1,457 patients that were identified the mean age was 42.95 years (SD 11.966) coinfected patients. The geographical locations of the cases include DR Health Regions 0 with 524 (36%) cases, Region 2 with 309(21.2%) Region 5(288 (18.4%) and other regions 336(23%). 900 (61.8%) were female, 23 (1.6%) died, and 944 (64.8%) have insurance. The model yielded a p-value of 0.856393, with a c-index of 0.5913. Conclusions: The Kaplan Meier Curve shows that the high risk and low risk strata have confidence intervals that overlap, indicating that there is no survival advantage pertaining to any of the two

	groups in the model. The model would require perhaps more variables in order to be suitable to be used.
f-reported color and glycemic control in Brazilian patients with type 1 diabetes: a multicentric cross-sectional study.	Background: Studies have shown the presence of disparities in the care provided to Black and Brown patients with diabetes compared to Whites in Brazil. However, few studies evaluated the role self-reported color plays on glycemic control in these patients. Therefore, we tested the hypothesis Black and Brown patients with type 1 diabetes (T1D) presented worse glycemic control than Whites. Methods: This was a cross-sectional study with 1760 patients with T1D conducted between August 2011 and August 2014 in Brazil. A multivariate linear regression model was used to compare the glycosylated hemoglobin (A1C) of self-reported Black and Brown individuals to self-reported White individuals. Multivariate logistic regression models were used to evaluate the relationship between self-reported color and types of prescribed insulin. Results: Black individuals presented a difference in A1C of 0.74% (p-value < 0.01) in the unadjusted model and of 0.58% (p-value 0.004) in the multivariate model compared to Whites. Blacks had 63% (95% CI: 30.4%-73.6%) and 34.2% (95% CI: 21%-55.7%) less odds of receiving analogues for bolus and basal insulin, respectively, than Whites in the adjusted models. Browns presented a difference in A1C of 0.42% (p-value < 0.01) in the crude model and 0.23% (p-value 0.039) in the adjusted model compared to Whites. Browns had 51.2% (95% CI: 40.1%-65.4) and 57.1% (95% CI: 44.5%-73.3%) less odds of receiving analogues for bolus and basal insulin, respectively, in multivariate models than Whites. Conclusions: Blacks and Browns presented with higher A1C than Whites. This difference remained statistically significant after adjustment for confounders.
The causal effect of mechanical ventilation on sepsis mortality in ICU patients	Background: Many mechanical ventilation interventions in Intensive Care Units (ICU) are not evidence-based and differ among socially defined races. We evaluated the causal effect of ventilation usage on mortality in ICU and investigated inequities between races using MIMIC-IV data. Methods: Sepsis patients were categorized based on their sequential organ failure assessment (SOFA) score at ICU admission. Mechanical ventilation was the primary exposure and race as the secondary exposure. The only outcome was in-hospital mortality. We compared differences in mortality due to ventilation using targeted maximum likelihood estimation (TMLE) model. We also

	used logistic regression to define the likelihood of receiving ventilation based on race. Differences in mortality were estimated using longitudinal targeted maximum likelihood estimation (LTMLE) model. Results: Among 31,781 admitted patients, median age was 65 years, 42.5% were women, and 67.6% were white. TMLE analysis showed an average 3.5% increase in mortality for patients with ventilation in the least severe SOFA group (score 0-5). Logistic regression indicated a lower likelihood for white patients to receive ventilation (OR 0.81 (95% CI 0.77 - 0.86)). Ventilation had a higher increase in mortality among non-white patients compared to white patients in SOFA group (score 0-5). Conclusions: Overuse of mechanical ventilation was observed in less sick sepsis ICU patients. Inequities were found between White and Non-white patients in ventilation treatment decisions. Non-white patients showed a higher increase in mortality after ventilation compared to white patients. This should question our approach of treating patients in the ICU where less might actually be more.
Pulmonary Hypertension associated with Interstitial Lung Disease: Is there a Role for Initial Combination Pulmonary Vasodilator Therapy?	Background: There are five clinical groups of PH. Initial combination pulmonary vasodilator therapy is the standard of care for group 1 PH. Only one medication is approved for group 3 PH, when it is associated with interstitial lung disease (PH-ILD). However, due to the poor prognosis, off-label treatment is common. We aimed to evaluate the efficacy and safety of initial combination therapy compared to monotherapy in patients with PH-ILD, the impact of baseline hemodynamics on treatment effect. Methods: Patients with PH-ILD treated at Mass General Brigham from 2018–2022 and received at least one pulmonary vasodilator were included. Initial combination therapy was defined as commencement of additional medication(s) within 90 days. The primary composite endpoint was death or lung transplantation. We performed time-to-event analyses, adjusting for confounding by propensity score regression. Subgroup analysis was performed to assess for effect modification. Results: 118 patients were included, 92 received intial monotherapy and 26 received initial combination therapy. There was no difference in the primary outcome; adjusted HR 0.88 (95% CI 0.40 - 1.96), p = 0.76. There was significant interaction between treatment and PVR; HR 0.37 (0.14 - 0.99) and 3.67 (1.27-10.63) for PVR > 5 and ≤ 5, respectively. Thirty-one percent of patients discontinued

	treatment, with no significant difference between groups. Conclusions: There was no difference in transplant-free survival with initial combination therapy vs. monotherapy in PH-ILD. There may be a positive effect in patients with more severe hemodynamics, similar to results of subgroup analysis from a recent clinical trial. Future trials should focus on this subgroup.
Patient Characteristics to Predict Response to Antihypertensive Medications in Severe Hypertension in Pregnancy: A Retrospective Cohort Study	Background: Hypertensive disorders of pregnancy (HDP) are a leading cause of maternal morbidity and mortality. Data on patient characteristics to predict antihypertensive treatment response in HDP are limited. The study aimed to identify patient characteristics associated with non-responsiveness to antihypertensive medications in patients with sustained, severe HDP. Methods: We performed a retrospective cohort study using electronic health record data from the obstetric service at a single institution from January-December 2021. Patients treated with parenteral labetalol or hydralazine for sustained, severe HDP, defined as a blood pressure ≥ 160/110 mmHg for at least 15 minutes, were included. Non-responsiveness was defined as a resolution of hypertension requiring more than two doses of antihypertensive therapy. Predictors considered included hemodynamic, laboratory, and demographic characteristics. Variables were selected by adaptive LASSO logistic regression with 10-fold cross-validation. Analyses were conducted in STATA 17.0. Results: We identified 200 patients with sustained, severe HDP during the study epoch, 86 of which were treated with hydralazine and 114 with labetalol. Twenty-seven patients (13.5%) were non-responders. Predictors of non-response included higher prenatal BMI (OR=1.07; 95% CI:1.02-1.12), mean arterial pressure > 125 mmHg (2.90; 1.10 to 7.62), and earlier gestational age (34 to < 37 weeks: 3.18[1.10-9.16]; < 34 weeks: 4.71[1.10-20.20]). Antepartum aspirin use and smoking history were non-zero coefficients. All other predictors were removed by LASSO. The cross-validated model C-statistic was 0.74. Conclusions: Patient characteristics can risk stratify patients with severe HDP to guide treatment decisions. External validation of these predictors and studies to assess predictors associated with individual agents are needed.
Associations between COVID-19, diabetes	Background: Patients with diabetes are at increased risk of severe acute COVID-19, however the long-term health impact of COVID-19 has not been well described in this population. One enduring impact

distress, and insulin non-adherence – a 2021 cross sectional National Health Interview Survey Study	may be diabetes distress, the emotional distress of living with diabetes and the burden of relentless daily management. Additionally, diabetes distress may manifest into harmful behaviors such as insulin non-adherence. Methods: This cross-sectional study evaluated the relationship between COVID-19 diagnosis and diabetes distress as well as the association between diabetes distress and insulin non-adherence. The study utilized self-reported data from 2021 National Health Interview Survey (NHIS), using complex sampling modeling and multivariable logistic regression. The primary analysis included 2831 individuals and secondary analysis included 874 individuals with diabetes representing an estimated 21,793,072 and 6,730,448 individuals nationwide, respectively. Results: COVID-19 diagnosis was not associated with diabetes distress in the multivariable analysis (OR 1.07, 95%CI, 0.81-1.44) after adjusting for age, sex, race/ethnicity, education, ratio of family income/poverty threshold, cardiovascular disease, asthma, and stroke. Individuals with diabetes distress had 1.97 times the odds (95%CI, 1.15 – 3.39) of skipping, delayed buying or taking less insulin due to concerns about money than those without diabetes distress after adjusting for age, sex, race/ethnicity, ratio of family income/poverty threshold, and insurance coverage. Conclusions: In this national cross sectional survey study, diabetes distress was significantly associated with insulin non-adherence. We did not find an association between diagnosis of COVID-19 and diabetes distress. Factors associated with diabetes distress that lead to insulin non-adherence should be explored in future studies.
Myocarditis in Cancer Patients Receiving Combination Checkpoint Inhibitor Therapy: A Pharmacoepidemiology Study	Background: Immune checkpoint inhibitors (ICI) have improved the clinical outcomes of several cancers but have also been associated with a greater risk of immune-related adverse effects, especially when used in combination. In particular, the frequency and outcomes of ICI-related myocarditis remain poorly described. Methods: A retrospective cohort study was conducted using medical and pharmacy claims data (2011 to 2022) from a large US health insurer to track patients receiving ICI. Unadjusted, adjusted, and propensity score-matched Cox regression models quantified the comparative risk of myocarditis between patients receiving combination therapy (nivolumab and ipilimumab) and those taking a single checkpoint inhibitor only. Kaplan-Meier curves were used to assess the cumulative risk of events over time.

	Results: In the overall cohort of 53,018 patients, there were 148 cases of myocarditis, 33 (0.7%) occurring in patients on combination therapy and 115 (0.2%) occurring in patients on monotherapy. The risk of myocarditis per 1,000 patients was 7.40 in the combination therapy group and 2.37 in the monotherapy group (risk ratio 3.12, 95% CI: 2.12-4.60). Using a propensity score-matched model, the hazard ratio for myocarditis in the combination therapy group was 3.67 (95% CI: 1.76, 7.67; $p < 0.01$). Sensitivity analyses using high-dimensional propensity score matching were consistent with the main findings (Hazard Ratio 2.36, 95% CI: 1.17-4.78; $p < 0.02$). Conclusions: Combination therapy with two simultaneous checkpoint inhibitors was associated with an increased risk of myocarditis compared to the use of single agents. Increased clinical monitoring of patients taking combination checkpoint inhibitor therapy for cancer is warranted.
Maternal immune activation during pregnancy and the risk of autism spectrum disorder (ASD) and attention-deficit/hyperactivity disorder (ADHD) among offspring	Background: The incidence of ASD and ADHD is on the rise in the U.S. but the pathogenesis of these disorders is not fully understood. Pregnancy is a critical period that plays a vital role in shaping health and disease risks in the offspring. Maternal immune activation (MIA) during pregnancy may help determine the risk of neurodevelopmental disorders among offspring. Methods: This retrospective cohort study utilizes MarketScan insurance claims data, representing time-stamped health histories for over 200 million U.S. individuals and their eligible family members during 2003-2018. A birth cohort of 841,946 unique mother-newborn pairs was identified using a validated set of inclusion and exclusion criteria. The primary exposure MIA includes any bacterial, viral, sequelae, inflammation, misc., or immune event during the prenatal period, and ASD or ADHD diagnosis among offspring as outcomes. Cox proportional hazards regression model was used to study the association between MIA and risk of ASD or ADHD among offspring after adjusting for maternal age, newborn's sex, delivery mode, birth term, birth weight, seasonality of birth, and mean air pollution (PM2.5) exposure during the prenatal period. Results: 43.3% of pregnant mothers had ≥1 prenatal MIA event. 17,904 children (71.4% male) and 5,144 (80.6% male) were diagnosed with ADHD and ASD, respectively. After adjusting for covariates, prenatal MIA was associated with a HR of 1.25 (95% CI [1.22,1.29], p-value < 0.001) with ADHD and 1.09 (95% CI [1.03,1.15], p-value of 0.002) with ASD. Conclusions: MIA during pregnancy is associated with an increased risk of ASD and ADHD among offspring.

Overall survival for rural patients with advanced prostate cancer: a SEER investigation	Background: It is unknown if delays in management of metastatic prostate cancer exist in rural settings, and whether this is reflected in survival. This study aimed to examine differences in survival for patients with de novo metastatic prostate cancer, according to urban-rural status. Methods: This retrospective cohort study utilised the publicly available Surveillance, Epidemiology, and End Results database. Data on demographics, rural-urban status, histopathology, and survival were extracted for men aged 18-75, diagnosed with metastatic prostate cancer between 2009-2018. Patients missing rurality status or survival outcome-related data were excluded. Differences between urban and rural cohorts in overall survival were analysed using Cox regression and restricted mean survival time modelling. Subgroup analyses were performed for variant histological subtypes. Sensitivity analyses were performed for varying definitions of rurality. Results: Altogether, 21,291 participants were included. The cohorts of rural and urban participants differed in age, race, US region, and marital status. Cox regression failed to demonstrate associations between urban-rural status and overall (adjusted hazard ratio = 1.03, 95% confidence interval: 0.97-1.09). Restricted mean survival time modelling demonstrated that urban patients lived 2.29 months longer than rural patients (95% confidence interval: 0.61-3.97). Sub-analyses of neuroendocrine, intraductal, and other histological subtypes, did not demonstrate any association between urban-rural status and overall survival. A more selective definition of rurality led to a persisting difference in overall survival (2.70 months, 95% confidence interval: 0.66-4.75). Conclusions: This retrospective analysis demonstrated that U.S. individuals with metastatic prostate cancer who resided rurally died sooner compared to patients from urban areas.
Telehealth vs. In-Person Cardiology Consultations During COVID-19: A Comparative Analysis of	Background: During the COVID-19 pandemic telehealth was widely used to maintain patients' access to healthcare. It is unknown if the use of telehealth for cardiovascular patients affects the number and type of diagnostic tests ordered or patients' satisfaction. This study aims to compare the impact of

Diagnostic Test Ordering and Patient Satisfaction	telehealth on diagnostic test ordering and patient satisfaction in cardiology care. Methods: We conducted a retrospective observational study to investigate diagnostic test ordering, and prospective analysis to assess patient satisfaction. We included all new patients referred for cardiovascular consultation to a university-affiliated cardiology office from March to June 2020. Data was obtained from existing medical records, and patient satisfaction data was collected via validated patients and telemedicine satisfaction questionnaires. Results: Our study included 240 patients,137 in the “in-person” group and 103 in the “telehealth” group. Both groups had similar baseline characteristics, including age, sex, ethnicity, BMI, and pre-existing conditions. The mean number of diagnostic tests ordered after an in-person consultation was 1.28 ± 0.88, versus 1.27 ± 0.91 after a telehealth consultation. After adjusting for confounding variables, we found no significant difference in the total number or in the individual tests ordered between the two groups ($p = 0.93$). The proportion of patients that were satisfied/very satisfied (≥ 4/5) with the care received were 95.7% in the telehealth group, versus 87.5% in the in-person group ($p = 0.24$). Conclusions: Our findings suggest that telehealth and in-person consultations in cardiovascular care have similar diagnostic test ordering patterns and patient satisfaction levels.
Investigating the associations between genetic ancestry and neighborhood disadvantage on disparities on proportion of triple negative breast cancer in South Florida	Title: Investigating the associations between genetic ancestry and neighborhood disadvantage on disparities on proportion of triple negative breast cancer in South Florida Authors: Neha Goel MD and Timothy Rebbeck PhD Background: Triple-negative breast cancer (TNBC) disproportionately affects women of African ancestry and those living in socioeconomically disadvantaged neighborhoods. The interplay between genetic ancestry and social factors in relation to TNBC incidence remains unclear. This study aimed to investigate the association between genetic ancestry, neighborhood-level income, and TNBC.

	Methods: A prospective cohort of 502 women with breast cancer enrolled in the Miami Breast Cancer Disparities Study from 2020-2022. Genetic ancestry, median neighborhood-level income, genetic mutations, and tumor characteristics were assessed. Multinomial logistic regression was used to determine the relative risk (RR) between genetic ancestry and breast cancer subtype. Results: Of the 502 women, 333 (66.33%) had ER+/HER2- disease, 67 (13.35%) had ER+/HER2+ disease, 22 (4.38%) had ER-/HER2+ disease, and 80 (15.94%) had TNBC. On univariable analysis, the highest West African quartile (RR 3.58 95%CI 1.72-7.42, p
Value-based Healthcare: Comparison of the intraocular pressure effect and cost of chondroitin sulfate 4% sodium hyaluronate 1% (DuoVisc) versus hydroxypropyl methylcellulose 2% (Ocucoat) for cataract surgery	Background: It is a public health imperative to reduce the cost of healthcare without reducing quality. Four million cataract surgeries are done in the US each year. Reducing the cost of the surgery can yield significant savings. Methods: A retrospective cohort study of patients receiving either DuoVisc or Ocucoat during cataract surgery compared changes in intraocular pressures (IOP) and costs. DuoVisc was used in 2021 and Ocucoat was used in 2022. Pressures were compared across the two cohorts. Two-sample t-tests, test of proportions, multivariate linear and logistical regression were used to analyze the IOP measurements. Results: 693 eyes of 368 individuals were included. 328 eyes using DuoVisc had 27 acute IOP elevations (> 30 mmHg) and 365 eyes with Ocucoat had 36 acute IOP elevations (p-value 0.45). Average change in IOP on day one was 5.6 mmHg for DuoVisc cohort and 4.4 mmHg for Ocucoat cohort (p-value 0.12). There was no statistically significant difference in IOP spikes or overall elevation of IOP between cohorts using multivariate analysis. The two-sample t-test of the change in IOP was statistically significant (p-value= 0.04) but the two-sample test of proportions of the number of acute elevations was not statistically significant (p=0.46). Conclusions: Cataract surgery with either OVD yielded similar effects on IOP. Utilizing an optimized approach of DuoVisc for cases with corneal disease and Ocucoat for standard cases could result in substantial cost savings for cataract surgery of up to 54% on the cost of the OVD.
Predictors and Impact of Accelerated Biological	Background Hypertension increases the risk of mortality and cardiovascular complications with age. This study aims to identify predictors for accelerated biological age and assesses the relationship between accelerated aging and mortality and cardiovascular outcomes in individuals with

Aging in Older Adults with Hypertension.	hypertension. Methods This is a retrospective cohort study based on the Health and Retirement Study. Principal component analysis (PCA) and multiple linear regression were used to measure biological age, dominance analysis to rank predictors for accelerated aging, and logistic and linear regression to measure the impact of accelerated aging on study outcomes. Results A total of 5,000 hypertensive individuals were included, with a mean follow-up of 14.2 years (std dev: 8.2). A total of 43.8% had accelerated biological aging. Those with accelerated biological age were younger, more likely to be female, African American, or Hispanic, and had a higher prevalence of chronic conditions. Smoking, diabetes, and high waist circumference were the most dominant early predictors of accelerated aging. Older age, higher expiratory flow, and moderate physical activity were predictors for decelerated aging. Each five-year difference between biological and chronological age was associated with an increased risk for mortality (OR: 2.02, 95%CI: 1.71-2.39, $p < 0.001$), stroke (OR: 1.33, 95%CI: 1.10 - 1.60, p=0.004), decreased cognition (MR= 0.47, 95%CI: 0.39 - 0.56, $p < 0.001$) heart disease (OR= 1.33, 95%CI: 1.10 - 1.60, p=0.004), and functional limitations . Conclusions This study highlights the need for targeted interventions to optimize lifestyle factors such as diet and exercise, promote nonsmoking, and encourage regular physical activity in hypertensive individuals.
Outcomes in stage I non-seminoma testicular cancer: A SEER population study	Background: After radical orchiectomy, active surveillance is a treatment option for stage I nonseminoma; however, 30% of patients relapse. Randomized trials showed benefits in relapse-free survival but no benefit in cancer-specific survival. We sought to evaluate factors associated with receiving chemotherapy and the impact of chemotherapy on cancer-specific survival in patients with stage I nonseminoma of the Surveillance, Epidemiology, and End Results database. Methods: We identified 1922 men diagnosed with stage I testicular nonseminoma from 2004 to 2017 in the SEER registry. A multivariable logistic regression model including age, race, and income as potential confounders was constructed to analyze the association of geographic features (residency in rural vs. urban areas) and tumor characteristics (lymphovascular invasion and tumor stage) with receipt of adjuvant

	chemotherapy. To compare the cancer-specific survival of patients according to receipt of adjuvant chemotherapy, we performed a Cox proportional hazard model adjusted by propensity score as a summary confounder. Results: A total of 605 patients received chemotherapy (28.6%). The five-year CSS in the no chemotherapy group was 98.4%, 95%CI: 97.5 - 99.0% vs. 97.7%, 95% CI: 95.8 - 98.7% in the chemotherapy group (adjusted HR=1.61, 95% CI 0.82 – 3.31, p-value=0.169). The presence of lymphovascular invasion and T3-T4 stage were associated with receiving chemotherapy (adjusted OR= OR 4.25, 95% CI 3.31 – 5.46, p < 0.001 and adjusted OR=2.05, 95% CI 1.06 – 3.95, p=0.031, respectively). Conclusions: Adjuvant chemotherapy was not associated with increased CSS in stage I nonseminoma. High-risk features (lymphovascular invasion and T3/T4 stage) were associated with receiving chemotherapy.
Exploring the role of fine particles in promoting frailty in the Medicare beneficiaries cohort	Background: Fine particle pollution is a well-established risk to human health. Nearly all observational epidemiology studies of PM2.5 treat events as though they are independent of one another. Multi-state survival models relax this assumption by accounting for the complex pathway of disease to death. Methods: We employ a multi-state survival analysis using an open cohort comprised of Medicare beneficiaries for the time period beginning January 1 2000 to December 31 2016. We restrict the cohort to individuals who had not experienced chronic illness prior to enrolling in Medicare, allowing us to characterize the role of particle pollution in affecting healthy individuals. We draw upon previously highly spatio-temporal modeled PM2.5 predictions averaged over each ZIP code . In the multi-state survival model, we specify a matrix defining transition for states including: health; first admission to the hospital cardiovascular disease (CVD); and, total mortality. We model the transition intensity using a Cox proportional hazards model, controlling for individual and ecological covariates. Results: A total of 6.1 million people died, and 9.1 million people were admitted to the hospital for

	cardiovascular disease in a cohort of 25.1 million people and 187 million person-years. The adjusted Hazard Ratio for transitioning from: health to first CVD hospital admission is 1.03 (95% confidence interval 1.02 to 1.04); health to death is 1.06 (95% confidence interval 1.05 to 1.07); and, CVD hospital admission to death is 1.04 (1.03 to 1.05). Conclusions: PM is associated with transitioning from a state of health to illness and death.
Association between Cruciferous Vegetable Consumption and Epigenetic Biological Clocks	Background: Breast cancer is the second leading cause of cancer death for women in the US.[1] Studies have shown that high quality diet is associated with 23% reduction in mortality in breast cancer patients.[2] Understanding how diet impacts markers of aging and risk of breast cancer is important to inform cancer management. The analysis is focused on identifying possible associations between dietary consumptions of cruciferous vegetables and epigenetic biological clocks. Methods: The study leveraged data from a previously conducted nested case-control study[3] in the Nurses' Health Study (NHS). The primary exposure for this study is the estimated amount of glucosinolate intake in patient's diet in milligrams. The primary outcome is biological age as captured by epigenetic clocks including DNAmTL, EEAA, IEAA.Hannum. A secondary outcome which is important to the biologic aging is the methylation of Kelch-like ECH- associated protein 1(KEAP1) . A linear regression model was designed for this analysis including BMI, age and smoking status as covariates. Results: Results of this analysis are consistent with our hypothesis that increased consumption of cruciferous vegetables have favorable outcomes on cancer related biomarkers. For every unit increase in glucosinolate consumption there is a non-significant reduction in the effect estimate of each of the biological clocks evaluated. The analysis showed with every unit increase in consumption of glucosinolate there is a non-significant increase in methylation of KEAP1. Conclusions: Future work in a larger cohort is warranted.
A Preliminary Evaluation of The Recovery Housing and Care Services Program For The Homeless in One Boston Neighborhood: Mass & Cass	Background: A novel housing-first intervention is currently underway serving those who were living on the streets in a neighborhood adjacent to Boston Medical Center (BMC), the city's safety net hospital, at the intersection of Massachusetts Avenue and Melnea Cass Boulevard (known locally as Mass & Cass), providing recovery housing with a care services model for this acutely in-need population. I have worked closely with BMC in this preliminary evaluation effort, analysis, and presentation and

	all information herein is STRICTLY CONFIDENTIAL at their request. Methods: The aim is to preliminarily assess the impact of this novel recovery housing and care services program among formerly homeless residents of Mass & Cass. The hypothesis is that there will be a meaningful decrease in ED visits among program recipients before and after the program's January 2022 commencement. A descriptive cohort study was conducted comparing ED visits before and after the program's commencement date. The primary exposure is the recovery housing and care services program, and the primary outcome is ED visits by this population before and after January 2022. We will analyze the change in ED visits using paired t-tests, parametric and non-parametric. Results: Preliminary analysis shows a 20% reduction in ED visits for this population as a result of the recovery housing and care services program implemented January 2022. Conclusion: The preliminary analysis represents a valid conclusion that the change in level and slope of the pre- and post-intervention data is significant and due to the positive impact of the studied program.
Preeclampsia and the future development of chronic kidney disease	Background: Preeclampsia, a multisystem disorder that complicates 3-5% of pregnancies worldwide, is associated with increased risk of maternal chronic kidney disease (CKD) and end stage kidney disease (ESKD). Little is known about the natural history of subsequent kidney disease following preeclampsia with few longitudinal studies. We aim to investigate incident CKD in women with a history of preeclampsia compared to women with an uncomplicated pregnancy. Methods: We used linked data from the Medical Birth Register of Sweden, which contains data on all births since 1973, with regional and national administrative databases. The population consisted of women who had a first birth between 2006 and 2021. Women with a diagnosis of CKD, hypertension, diabetes or systemic lupus erythematosus were excluded. The outcome was a diagnosis of CKD. Hazard ratios were obtained from multivariate Cox proportional hazards regression models to examine the association between preeclampsia and CKD. Results: The cohort consisted of 168,558 women followed for 34,902 person-years. Compared with women with no previous preeclampsia, those with a history of preeclampsia were more likely to

	develop chronic kidney disease HR 4.6 (95% CI 3.5-6.1). This was only slightly attenuated with adjustment for relevant confounders (aHR 4.2; 95% CI 3.1-5.5). Multiple gestation did not modify the association between preeclampsia and CKD. Conclusions: Preeclampsia was strongly associated with the development of chronic renal disease later in life. Further research using biochemical markers is required to help guide optimal clinical follow-up and intervention for this group of at-risk women.
Home parenteral nutrition for individuals with short bowel syndrome secondary to Crohn's disease versus other etiologies: A Prospective Cohort Study	Background: Many individuals with short bowel syndrome (SBS) require home parenteral nutrition (HPN) support. Crohn's disease (CD) is a common cause of SBS. Complication rates in SBS secondary to CD on HPN versus other etiologies remains unknown. Purpose: To determine whether patients with SBS secondary to CD versus other etiologies on HPN have increased risk of hospitalizations, complications and mortality. Method: This is a prospective study using the HPN Registry for individuals with SBS separated into two cohorts (SBS CD vs SBS other). Patient characteristics and clinical factors are presented as mean (standard deviation) for continuous variables and as frequency (percentage) for categorical variables. Comparison between groups were performed using 2-sample t-test for continuous variables and Chi-square or Fisher exact tests for categorical variables. Univariate and multiple linear regressions were performed. Result: The study included 383 patients with SBS on HPN for an average duration of 5.4 years. Of this, 172 (45%) patients with SBS secondary to CD and 211 (55%) patients with SBS from other causes. The average age of HPN initiation in those with CD is 50 and 64% are female patients. There were significant differences in age of initiation ($p < 0.001$), length of bowel remaining ($p < 0.001$), and baseline medications with higher use of immunosuppressant therapy ($p < 0.001$) in those with CD. There was no significant difference in total number of hospitalizations, hospitalizations related to PN, line sepsis or mortality.

	Conclusion: This study suggests that Crohn's disease is not associated with increased risk of home PN complications or mortality
Association between Gender identity, Mental Health Outcomes and Support Seeking Behavior in Adolescents	BACKGROUND Transgender/gender diverse youth (TGDy) is at higher risk for depression, anxiety and substance use. Despite this, TGDy may be less likely to seek mental health support, compared to their cisgender peers (CISy). This cross-sectional study explored an association between gender, support-seeking behavior and mental health outcomes in a school-based sample. METHODS Students enrolled in 5th-12th grade completed a school-wide survey in Fall 2021. Survey included demographics, gender (CISy=Male/Female; TGDy=Transgender-Male, Transgender-Female, Non-Binary, other, questioning), depression or anxiety (Patient Health Questionnaire-4, risk score≥3), support-seeking behavior (family, friends, school-staff, mental-health provider, online) and use of alcohol, cannabis and cigarettes. RESULTS 6379 students ages 14.3±2.0 completed the survey, 51% were female, 64% White, 10.4% Hispanic, and 5.3% TGDy. Compared to CISy, TGDy had higher odds of depression (OR=4.6, 95%CI 3.6-5.9,p
Food insecurity, weight-loss supplement use, and effect modification of demographic characteristics in American adults: results from NHANES 2011-2020	There is a rising trend in the use of weight-loss supplements among US adults. Weight-loss supplements are ineffective and potentially dangerous due to the inclusion of banned or discouraged ingredients. The aim of this study is to examine the association between household food insecurity and weight-loss supplement use among adults who were trying to lose weight in the past year, and if the associations were modified by sex, age, and ethnicity.
Time-to-therapy discontinuation in patients	Background: The purpose of this project is to assess the time-to-therapy discontinuation and hospital readmission rate among patients newly diagnosed which schizophrenia who are prescribed long-

newly diagnosed with schizophrenia initiated on long-acting injectable versus oral dopamine receptor blocking agents	acting injectable versus oral dopamine receptor blocking agents. Methods: A retrospective review of medical records was performed for adult patients admitted to an 80-bed inpatient behavioral health facility with a new diagnosis of schizophrenia between 10/1/2015 and 2/6/2020. The primary outcome was time-to-therapy discontinuation within one year of hospital discharge. The secondary outcomes were time-to-therapy discontinuation within 90 days and readmission rate at 30-days, six months, and one year. Multivariable Cox Proportional Hazard model was used. Results: 425 patients were included, with 66.4% (n = 282) discharged on oral and 33.6% (n = 143) on long-acting injectable dopamine receptor blocking agents. At one-year post-discharge, the rates of discontinuation were 49.7% for those prescribed long-acting injectable and 55.7% for those prescribed oral formulations (adjusted hazard ratio = 0.54, p = 0.012). There was no statistically significant difference in readmission rate between the patients prescribed long-acting injectables and oral dopamine receptor blocking agents at any timepoint tested. Conclusions: The use of long-acting injectable dopamine receptor blocking agents is associated with longer time-to-discontinuation compared to oral agents when prescribed to patients newly diagnosed with schizophrenia in the inpatient setting. Despite the guideline-directed first-line treatment of schizophrenia being long-acting injectable agents, these agents seem to be used in one-third of eligible patients. Future studies will seek to confirm these findings and examine barriers to use.
Disparities in Surgical Intervention and Health-Related Quality of Life Among Racial Groups with Degenerative Lumbar Spondylolisthesis	Background Low back pain is the largest disabler worldwide and lumbar degenerative spondylolisthesis is one of the biggest contributors to surgical low back pain. Equitable access to treatment has the potential to improve Health Related Quality of Life (HRQol) related to lumbar spondylolisthesis. Methods The goal of the study was to assess the relationship between sociodemographic factors, treatment utilization, and outcomes in patients with lumbar spondylolisthesis. This cohort study analyzed prospectively collected data from patients with lumbar spondylolisthesis between 2015 and 2020 at HMS-affiliate hospitals. Exposures: race, socioeconomic status, insurance, and HRQoL. Main outcomes and measures: treatment utilization rates between racial groups and the association between race and treatment outcomes using logistic regression, adjusting for clnical characteristics, socioeconomic status, insurance, and HRQoL.

	Results Of the 9,941 patients included (mean [SD] age, 67.37 [12.40] years; 63% female; 1,101 [11.07%] Black and Indigenous patients of color [BIPOC]), BIPOC patients were significantly less likely to have surgery than white patients (13% vs. 16%; P < 0.001). White race was associated with significantly higher odds of reaching the Minimum Clinically Important Difference (MCID) for physical function (OR=1.35; 95% CI, 1.10-1.67; P < 0.001) and pain interference (OR=1.29; 95% CI, 1.03-1.62). Medicaid beneficiaries were significantly less likely (OR=0.65; 95% CI, 0.46-0.91) to reach a clinically important improvement in HRQoL, when accounting for race. Conclusions This study found that BIPOC patients were less likely to undergo spine surgery for degenerative lumbar spondylolisthesis. Additionally BIPOC patients had worse HRQol initial and long-term symptoms.
Title: Using public toilets to surveil antimicrobial resistance in Thailand and the role of Tiktok in resistance spread	Background: Antibiotic resistance is a global public health threat. In Thailand, over-the-counter antibiotics and misinformation contribute to antimicrobial resistance (AMR). This study investigates antibiotic usage patterns, attitudes, the role of social media platforms like TikTok in resistance spread, and the application of metagenomic analysis of wastewater samples from public toilets for AMR surveillance. Methods: A mixed-methods approach was employed, including a survey of 41 pharmacies, qualitative interviews, and metagenomic analysis of wastewater samples. Data collected included antibiotic sales, recommendations, reasons for use, opinions on government actions, and prevalence of resistance genes in wastewater samples. Online antibiotic sales trends were examined. Results: Urban pharmacies primarily sold smaller quantities of antibiotic packs, while rural pharmacies predominantly sold larger quantities. Diarrhea was the most common reason for recommending antibiotics. Older individuals purchased antibiotics more frequently, regardless of location. Online antibiotic sales were more prevalent in urban areas, facilitated by social media platforms like TikTok. Limited public awareness, education initiatives, and inadequate enforcement of regulations were key challenges. Metagenomic analysis of wastewater samples will provide insights into the prevalence of resistance genes.

	Conclusions: Targeted educational campaigns, stricter regulations, and tailored training for pharmacists are necessary to address antibiotic misuse and overuse in Thailand. Improved enforcement of regulations and ongoing education for pharmacists and the public are crucial in combating AMR. Strengthening the healthcare system's ability to monitor and regulate antibiotic sales through online platforms, social media, and wastewater surveillance is essential to promote responsible use and mitigate the risk of antimicrobial resistance.