epilepticus (rSE), many which have anti-seizure properties. We examine the anti-seizure efficacy and safety of induction agents used during RSI in the management of rSE. METHODS/STUDY POPULATION: We conducted a single-center retrospective review of patients admitted to the neuro-ICU intubated for management of rSE. Propofol, ketamine and benzodiazepines were considered anti-seizure medication (ASMs), etomidate was not. Patients were treated with propofol or midazolam following intubation. Our primary outcome was clinical or electrographic recurrence of SE within 12 hours of intubation. Exploratory outcomes included time to recover command following, duration of mechanical ventilation (MV) and complications related to intubation. We used multivariable logistical regression to evaluate outcomes between patients induced with ASMs and etomidate. A Fisher exact test was used to compare rSE cessation in a subset of patients with continuous electroencephalography (cEEG) at the time of intubation. RESULTS/ANTICIPATED RESULTS: We identified 149 induced for RSI in management of rSE: 88 patients intubated using ASMs (propofol,n=56; ketamine,n=14; benzodiazepines,n=18) and 61 patients intubated with etomidate. Forty-one patients had recurrence (29.9% ASMS, 24.6% etomidate). The induction agent was not associated with recurrence of SE, time to command following, or duration of MV. Twenty-seven patients had cEEG monitoring at the time of intubation. Sixteen of the 22 patients induced with ASMs had cessation of rSE with induction, while 1 of 5 intubated with etomidate had cessation (Fisher exact test, p=0.047). There were 34 patients with post-induction hypotension (22.9% ASMs, 22.9% etomidate (Fisher exact test, p=1)). DISCUSSION/ SIGNIFICANCE: Induction with an anti-seizure medication during intubation was more likely to halt rSE, but did not decrease the likelihood of clinical or electrographic recurrence of rSE and may not affect time to recovery of command following or duration of MV.

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COVID-19 and Mental Health: Comparing the mental health between African Americans and Whites in 2019 (before COVID-19) and 2020 (during COVID-19) using NSDUMH in the United States

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OBJECTIVES/GOALS: The purpose of this study is to compare the mental health of African Americans to Whites during 2019 and 2020 using the a National Survey on Drug Use and Mental Health (NSDUMH). METHODS/STUDY POPULATION: Secondary data analysis from the National Survey on Drug Use and Health. The data consisted of 55,772 observations, 3,090 variables. This study will consist of the United State adult data population from 2019 and 2020 using the National Survey on Drug Use and Mental Health (NSDUMH). RESULTS/ANTICIPATED RESULTS: The results of this research will be produced from the following analysis. The analysis will consist of a secondary data analysis from the National Survey on Drug Use and Mental Health (NSDUMH). The primary independent variable of interest is race. All the indicator (race, sex, insurance, etc). Dependent variable is the mental health of African Americans and Whites. This is the variable in the NSDUMH labeled as the Major Depressive Episodes (MDE). The data analysis will be conducted using univariate analysis describing the study population. Bivariate analysis will be performed using chi-square. Since our dependent variable will be dichotomous we will be using several logistic regressions. DISCUSSION/SIGNIFICANCE: Strengthen mental health and psychosocial support services as part of strengthening preparedness, response and resilience to COVID-19 and future public health emergencies. Also adopt the updated Comprehensive Mental Health Action Plan for the future.

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COVID-19 and Moroccan nursing students: A multicenter cross-sectional survey on their related knowledge, attitudes and practices

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OBJECTIVES/GOALS: The purpose of our study was to assess the knowledge, attitudes and practices of nursing students during the COVID-19 pandemic. METHODS/STUDY POPULATION: Data were collected using an online questionnaire consisted of demographic characteristics and 24 items about COVID-19-related knowledge, attitudes and practices. RESULTS/ANTICIPATED RESULTS: A total of 1,216 nursing students participated in this study. About 82% of the participants reported that the COVID-19 virus spreads via respiratory droplets of infected individuals. The most clinical symptoms of COVID-19 correctly identified by participants were fever (97.6%), dry cough (92.4%), dyspnoea (82%) and fatigue (74.9%). More than 56.6% of the participants were afraid of being affected by COVID-19. Almost all participants reported that they avoid crowded places frequently. About 93.4% of the participants declared frequently wearing face mask when leaving home, and 85.5% maintained social distancing frequently. However, only 47.4% reported that they frequently washed their hands. About 51% stated that coronavirus outbreak has considerably changed their daily routines. DISCUSSION/SIGNIFICANCE: Sensitization and education campaigns are needed to improve their preventative practices, such as hand hygiene and wearing face mask. In addition, it may be of importance to incorporate competences into curricula to improve knowledge, attitudes and practices of future health professionals and to prepare them for emergencies and outbreaks.

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Cross-ancestry analysis of preeclampsia identifies novel maternal susceptibility loci*

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OBJECTIVES/GOALS: Preeclampsia (PE) is a hypertensive disorder of pregnancy, affecting 5 - 7% of pregnancies worldwide. A major cause of morbidity and mortality, PE is also associated with subsequent adverse health outcomes, including long-term increased risk of cardiovascular disease. The genetics conferring increased risk for PE are incompletely understood. METHODS/STUDY POPULATION: We performed a cross-ancestry, fixed-effects meta-analysis, incorporating both published and unpublished genome-wide association study (GWAS) summary statistics. In

addition to publicly available summary statistics from two prior studies, we generated GWAS data from three electronic health record biobanks (BioVU, eMERGE, and PMBB). In total, we utilized data from 359,378 individuals (4,411 cases and 354,967 controls). Leveraging this large-scale biobank data importantly allows for detection of complex factors contributing to the diverse etiology of PE. Cases across cohorts were defined using PE-specific ICD-9/ICD-10 codes and phecodes. Cohorts included pregnant individuals of self-identified non-Hispanic Black, non-Hispanic White, and East Asian ancestry. RESULTS/ANTICIPATED RESULTS: 2 of 20,204,625 loci achieved genome-wide significance ($p < 5 \times 10^{-8}$) when minor allele frequency was limited to common variants (>0.01). The most significant locus was rs138180605 ($p = 1.77 \times 10^{-8}$), located in an intergenic region between FGFR2 and ATE1, both previously associated with breast cancer. The other significant locus was rs137895377 ($p = 2.33 \times 10^{-8}$), located in an intronic region of PLEKHO1. Another 225 loci achieved suggestive significance ($p < 1 \times 10^{-5}$). 203 loci could be mapped to 109 unique genes, some previously associated with related phenotypes such as hypertension. Next steps will focus on functional analyses, including genetically predicted gene expression incorporating placental tissue, followed by construction of a PE polygenic risk score to demonstrate predictive utility of results. DISCUSSION/SIGNIFICANCE: This work has contributed to the limited body of knowledge surrounding maternal genetic susceptibility to PE by identifying several loci warranting further investigation. Further work will expand on these results to improve understanding of genetic factors and clarify clinical risk of disease.

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Data Loofah: A web-based app for efficiently identifying erroneous data

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OBJECTIVES/GOALS: The goal was to create and deploy an intuitive, easy-to-use tool that clinical investigators can apply to their data to identify erroneous or inconsistent data entries. Investigators can then correct any errors prior to sharing the data with their statistician for analysis. METHODS/STUDY POPULATION: We developed an interactive shiny app, the Data Loofah, using R Studio that researchers or data analysts can use to examine data. After an investigator uploads data, the app reports which variables are numeric or categorical. Means, standard deviation, median, 25th and 75th quantiles, range and number of missing values are reported for numeric variables. Counts and percentages of categorical variables are summarized. Graphical displays further enhance identification of errors. Access to the Data Loofah is through a secure, university-maintained website with access restricted to university personnel. Supporting materials consisting of instructional step-by-step handouts and videos were developed to assist investigators in the use of the app. RESULTS/ANTICIPATED RESULTS: We will integrate use of the Data Loofah into our Clinical and Translational Science Program's biostatistics consultative practice. Investigators will use the Data Loofah to pre-screen their data prior to sending it to a statistician, identify errors and inconsistencies, and facilitate making necessary corrections. Statisticians will also use the Data Loofah to review data with investigators prior to starting analyses. Through use of this app, investigators are expected to develop a better understanding of their data specifically and more generally about requirements for preparing data for statistical analysis. Most significantly, regular use of the Data Loofah is expected to result in higher quality data and more efficient use of statistician resources due to reduced effort for data cleaning. DISCUSSION/SIGNIFICANCE: Data cleaning is a time-consuming task and finding data errors can be difficult for data analysts not familiar with clinical variables under study. Further, failure to identify data errors can lead to erroneous results. By facilitating identification of data errors by clinical investigators, the Data Loofah will improve and enhance research output.

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Development of the Puerto Rico Neoplasm and CNS Tumor Registry (PUNCTURE)

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OBJECTIVES/GOALS: To describe and compare clinical data and outcomes for patients with CNS tumors and tumor mimics in Puerto Rico who are undergoing surgical and nonsurgical management. Thus, increasing data from an underrepresented group which can serve as a foundation for investigating determinants of outcomes. METHODS/STUDY POPULATION: This proposal will examine patient charts, radiology and pathology reports, financial data, and treatment details from the electronic medical record of patients receiving surgical and nonsurgical treatment for CNS tumors and mimics in the University of Puerto Rico Medical Sciences Campus and all associated institutions. Data will be analyzed retrospectively between January 1, 2014 and June 30, 2022, and prospectively for ten years until December 31, 2032. Patients with primary and metastatic CNS tumors and tumor mimics in the brain, meninges, ventricles, spinal cord, cranial nerves, orbit, facial sinuses, bony skull, vasculature will be included. The registry will include patients from birth onward. RESULTS/ANTICIPATED RESULTS: We plan to compare different surgical and non-surgical techniques and devices in terms of technical and clinical outcomes after surgical interventions for CNS tumors. We are collaborating with the CNS Tumor Outcome Registry at Emory (CTORE) and plan to continue collaboration with other institutions. Combining our data, we aim to develop predictive models of patient outcomes after surgical and nonsurgical intervention for CNS pathologies using supervised and unsupervised machine learning strategies. DISCUSSION/SIGNIFICANCE: There is a significant lack of literature on CNS intervention outcomes in Puerto Rico. This registry will provide the platform for cost-analysis studies for techniques and clinical protocols applicable to preoperative, intra-operative, post-operative, and conservative management of patients, in Puerto Rico and beyond.