University of Florida Integrated Data Repository and One Florida, we will develop machine learning models suitable for sequential data to predict NEC. Our inclusion criteria include very low birth weight (VLBW; <1500g) infants born <32 weeks gestation and EHR data availability from the first 14 days of life. We will include infants with NEC and infants without NEC to train our ML model. Exclusion criteria include infants diagnosed with spontaneous intestinal perforation and severe congenital anomalies/defects requiring surgery. RESULTS/ANTICIPATED RESULTS: We anticipate that our model will provide an accurate and dynamic prediction for the risk of NEC in neonates using data up to the first 14 days of life. Our model will be interpretable to identify key risk factors and can integrate real-world clinical insights to increase early detection and improve patient outcomes. DISCUSSION/SIGNIFICANCE OF IMPACT: The development of a model to predict NEC could be used in neonatal intensive care guidelines and protocols and could ultimately decrease mortality, reduce complications, improve the overall quality of care, and lower healthcare costs associated with NEC.

384

A systematic approach to understanding nursing documentation tasks

Victoria Tiase, Varun R. Selvam, Julio Facelli and Katherine A. Sward
University of Utah

OBJECTIVES/GOALS: Healthcare organizations must track electronic health record (EHR) activity at the user level, including logons, accessed records, and viewed or entered documentation. There is little standardization in EHR audit logs and nurse workload has not been explored using these data. In this project, we characterized nurse actions from EHR audit logs. METHODS/STUDY POPULATION: We performed an analysis of EHR audit log data collected from 8,149 nurses over 5 years at University of Utah Health. We preprocessed nursing-centric EHR audit logs from the Epic EHR by cleaning and preparing the data for analysis. We calculated basic statistics for the variables labeled user_id (nurse) and metric_id (action). We reviewed the actions used by nurses and categories the actions as navigation, view, and entry. To capture the clinical context of the actions, two nurses categorized each action. A third nurse resolved any discrepancies. RESULTS/ANTICIPATED RESULTS: We found that of the 4,419 available metrics, nurses used 1,461 unique metrics during the timeframe. The actions most used by nurses were 1) report with patient data viewed, 2) inpatient system list, and 3) storyboard viewed. Most of the metrics were categorized as navigation. The number of nurses interacting with the EHR increased each year and on average, we found that 1000 unique metrics were used by each nurse user in a 24-hour period. The expected outcome is a set of actions that can be mapped to higher level nursing interventions and in the future contribute to models for nursing workload measurement. DISCUSSION/SIGNIFICANCE OF IMPACT: We found great value in using EHR audit logs to provide insights into nursing actions. Information gleaned can benefit organizations that are crafting interventions to decrease workload. Ultimately, the goal is to ensure that nurses have an appropriate workload allowing for safe and high-quality patient care while maintaining their well-being.

385

Impact of skin pigmentation on genomic alterations and mutation load

Rojina Nekoonam, Aravind K. Bandari, Delahny Deivendran, Bishal Tandukar, Harsh Sharma and Alan Hunter Shain
University of California San Francisco

OBJECTIVES/GOALS: Despite the documented link between ultraviolet (UV) exposure and skin cancer, the potential protective role of pigmentation in preventing skin carcinogenesis is not fully understood. This project will test the hypothesis that individuals with light skin tones are more susceptible to skin cancer due to a higher accumulation of somatic mutations from UV exposure. METHODS/STUDY POPULATION: Skin biopsies were collected from various anatomical sites of seven donors aged 70 to 80 years with dark skin tones and used to generate clones of normal skin cells. The clones were then subjected to whole-exome and RNA sequencing. We developed a workflow that allows us to accurately detect somatic mutations in clonal expansions of individual cells with high specificity and sensitivity. For comparison, we also analyzed mutations in skin cells obtained from individuals with light skin tones, who served as our control group. In the future, we plan to employ admixture analysis to clarify the impact of race on somatic mutations by examining ancestral genetic contributions. RESULTS/ANTICIPATED RESULTS: Our preliminary analysis of the existing data supports our hypothesis. The average mutation burden in individuals with light skin tone was found to be 3.778 Mut/Mb, whereas in those with dark skin tones, was only 0.818 Mut/Mb. These findings align with the prevailing hypothesis that melanin acts as a protective factor against skin cancer, as it appears to reduce the mutagenic effects of UV radiation. This suggests that individuals with darker skin may have a lower cumulative mutational load, potentially contributing to their reduced risk of developing skin cancers such as melanoma. Similarly, our results showed variations in mutational burdens across different anatomical sites, which seemed to be influenced by differing levels of UV exposure, with the highest burdens observed in areas with the greatest exposure. DISCUSSION/SIGNIFICANCE OF IMPACT: Understanding how skin cancer operates in darker-skinned individuals is imperative for tailoring effective screening and targeted therapies to meet their specific needs. In the long run, elucidating the mechanisms underlying skin cancer development in this demographic will help refine screening protocols and prevention recommendations.

386

Developing an assessment tool for NIH data management and sharing plans to understand current data practices and needs

Michelle Yee, Alisa Surkis and Fred LaPolla
NYU Langone

OBJECTIVES/GOALS: NIH requires researchers submit Data Management and Sharing (DMS) Plans with their grant applications. Librarians developed an assessment tool for the plans and completed a pilot assessment in order to leverage the plans and understand current institutional research data management and sharing.

https://doi.org/10.1017/cts.2024.1007 Published online by Cambridge University Press