METHODS/STUDY POPULATION: The assessment tool includes questions related to evaluations of DMS Plans as well as questions related to the content of the plans. Evaluation questions were adapted from the Federation of American Societies for Experimental Biology evaluation rubric developed for the DataWorks! Data Management Plan (DMP) Challenge. Fields were added to collect information on the content of DMS Plans, including data type, institutional resources, data repositories, data standards, and data dissemination timelines. The assessment tool was tested in a pilot implementation. Seven library workers were trained and completed paired review samples of 27 DMS Plans (54 evaluations total) in order to test for tool reliability. RESULTS/ANTICIPATED RESULTS: Results include findings on the reliability of the tool as well as preliminary results from an assessment of DMS Plans. Findings on the reliability of the tool include assessments of the paired reviewers for each question included in the tool. Paired reviewers generally agreed, but tended to differ on specific questions, including questions pertaining to the data types generated or used in a research project. Questions with high levels of agreement included subjects of study and code sharing practices. Results on the content of the DMS Plans include information such as data repositories used, data oversight responsibilities, and data and metadata standards employed. DISCUSSION/SIGNIFICANCE OF IMPACT: DMS Plans present an opportunity to better understand data management and sharing practices, and good data management supports high-quality, reproducible research. Developing and testing assessment tools for these plans is a key step toward understanding and improving current research data management practices.

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Subtyping social determinants of health in cancer: Implications for health equity policies

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OBJECTIVES/GOALS: Although several studies have identified significant associations between specific social determinants of health (SDoH) and adverse outcomes, little is known about how SDoH co-occur to form subtypes and their outcome-based risks. Here we analyze how SDoH co-occur across all participants with a cancer diagnosis in the All of Us program. METHODS/STUDY POPULATION: Data: All participants (n = 3361) with cancer and their responses to 110 survey questions related to SDoH. Independent variables: 18 SDoH factors aggregated from the questions to address uneven granularity. Dependent variables: depression, delayed medical care, and ER visits in the last year. Analytical Method. (1) Bipartite network analysis with modularity maximization to identify participant-SDoH biclusters, measure the degree of their biclusteredness (Q), and estimate the significance of Q. (2) Visualization of the results using the ExplodeLayout force-directed algorithm. (3) Multivariable logistic regression (adjusted for demographics and corrected through FDR) to measure the odds ratio (OR) of each bicluster compared pairwise with the other biclusters to estimate their risk for the 3 outcomes. RESULTS/ANTICIPATED RESULTS: As shown in Fig. 1A (http://www.skbhavnani.com/DIVA/Images/Cancer-SDoH.jpg), the analysis (n = 3361, d = 18) identified 4 biclusters with significant biclusteredness (Q = 0.13, random-Q = 0.11, z = 9.94, P DISCUSSION/SIGNIFICANCE OF IMPACT: Currently, many health equity policies allocate resources based on sociodemographic factors like race and income to address disparities. The 4 distinct subtypes and their outcome-based risks suggest that such policies could be more precise if they were based directly on combinations of need using SDoH subtypes and their risk stratification.

Other

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Determining the effects of the pathogenic developmental and epileptic encephalopathy patient variant, SCN1B-p.R98C, on neuronal excitability

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OBJECTIVES/GOALS: Dravet syndrome is a developmental and epileptic encephalopathy associated with refractory seizures and a high risk of sudden unexpected death in epilepsy. A pathogenic biallelic variant in SCN1B, SCN1B-p.R98C, was identified in three patients with Dravet syndrome. Here we investigate SCN1B-p.R98C on neuronal function in vivo. METHODS/STUDY POPULATION: Scn1b-p.R98C mice were previously generated using CRISPR-Cas9 gene editing. Homozygous animals exhibit increased susceptibility to hyperthermia induced seizures at postnatal day (P) 15, 100% expression of spontaneous generalized seizures by P30, and ~20% undergo SUDEP by approximately P60. Here we examined the neuronal phenotype of P17–28 male and female Scn1b-p.R89C mice. We used whole-cell patch clamp electrophysiology approaches to measure effects of the variant on passive membrane properties, intrinsic excitability, and single action potential properties of parvalbumin positive (PV+) interneurons and pyramidal neurons in layers 5/6 of the somatosensory cortex and CA1 region of the hippocampus. Wild-type littermates were used as controls. RESULTS/ANTICIPATED RESULTS: Our results show no differences between genotypes in any measure for somatosensory cortical PV+ interneurons or pyramidal neurons. In the CA1 region of the hippocampus, we found no differences for any measure in PV+ interneurons. In contrast, CA1 pyramidal neurons were hyperexcitable, however, with no changes in passive membrane properties or single action potential properties. DISCUSSION/SIGNIFICANCE OF IMPACT:

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