causal loop diagrams and simulation models developed using CBSD focused on structural racism as a social determinant of health. METHODS/STUDY POPULATION: Community Based System Dynamics (group model building and computer simulation development). Cuyahoga County, Ohio, a previously redlined community of more than 1.2 million people. RESULTS/ANTICIPATED RESULTS: Actionable Community identified leverage points for action to mitigate structural racism. Computer simulation models built on causal loop diagrams built by Community members with loved experience. DISCUSSION/SIGNIFICANCE: Structural and social determinants of health, such as racism, have profound impacts on the health of individuals and populations, however they remain challenging to address in pragmatic ways. CBSD is a novel method to engage community members not proximal to the impact of structural racism in generating maps of the complex, dynamic system they live in.

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A Living Library for Uveal Melanoma

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OBJECTIVES/GOALS: Overall response rates for metastatic uveal melanoma (UM), regardless of treatment modality, are less than 20%, highlighting an urgent need for novel therapies. Herein, we present a UM patient-derived organoid (PDO) biobank as a novel platform for translational research. METHODS/STUDY POPULATION: Patients with primary choroidal or ciliochoroidal UM undergoing enucleation from 7/1/2019-9/30/2022 were invited to enroll. Tumor tissue was harvested within 30 minutes of globe removal. Cells were isolated using the human tumor isolation kit and gentleMACS dissociation protocol (Miltenyi Biotech). PDOs were placed on Cultrex-coated multiwell plates and cultured in supplemented RPMI media. DNA and RNA were isolated using kits from Zymo Research. Exon-enriched libraries and RNA were sequenced using an Illumina HiSeq 4000. Immunohistochemistry (IHC) assessed the following histone post-translational modifications: H3K4me1/3, H3K27Ac, and H3K27me. RESULTS/ANTICIPATED RESULTS: PDOs were established in 19 of 20 (95%) attempted cases. BAP1 protein expression was retained (n=7) or lost (n=12) in the primary tumors, with matching phenotype confirmed in PDOs. In 9 sequenced cases, a driving mutation was present in GNAQ (n=4), GNA11 (n=4), or CYSLTR2 (n=1). Morphology ranged from spindle-like to epithelioid clusters, mimicking primary tumor histopathology. Pigmentation increased with time in culture. Growth in culture was slow, and 1-2 months were allotted prior to passaging in most cases. Whole exome and RNA-sequencing confirmed distinct molecular profiles, with differential staining of active chromatin marks by IHC. DISCUSSION/SIGNIFICANCE: A biobank of primary UM PDOs with unique morphological and molecular characteristics has been established. These will serve as a model of human disease to facilitate translational research and investigate personalized treatments for patients with UM.

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A Mixed Methods Study of Patient and Clinician Views and Experiences of Pharmacogenomic Testing for Major Depressive Disorder

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OBJECTIVES/GOALS: Pharmacogenomic testing for major depressive disorder is an expanding area of precision medicine with multiple direct-to-provider tests available. While clinical evidence supporting testing is expanding, there has been little research on the views and experiences of patients and clinicians utilizing this novel intervention. METHODS/STUDY POPULATION: This ongoing study is conducting semi-structured interviews with clinicians and patients exploring their views of the benefits and limitations of pharmacogenomic testing. Qualitative interviews have been conducted with 10 patients and 10 clinicians who have experience with ordering or receiving results within the past 12 months. Interviews are being thematically coded following a modified grounded theory approach using the Dedoose software. Following the principles of exploratory sequential mixed methods design, findings will be used to develop a survey to be administered to prescribing clinicians in both primary care and psychiatry. The survey will examine clinician's knowledge, interest, and concerns about utilizing testing. RESULTS/ANTICIPATED RESULTS: Preliminary analysis of qualitative interviews indicates that both patients and clinicians find that the broader testing process has benefits beyond the test results themselves. Benefits identified by patients include an increased trust in the process of selecting medications, validation of their negative experiences with medications, and improved communication with their provider. Limitations identified by patients include difficulty in accessing test results, and gatekeeping for testing by providers. Benefits identified by clinicians include increased empathy with patients, medication adherence, and improved communication with patients about medication. Limitations identified by clinicians include difficulty with ordering and interpreting test results. DISCUSSION/SIGNIFICANCE: Medication selection is a difficult process for both patients and clinicians. Improvements to clinician-patient communication and medication adherence are important benefits to consider in the adoption of testing. Future research should include these dimensions in assessment of the benefits and limitations of testing.

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A systems genomics approach to identify novel drug targets of Ewing sarcoma through ancestry-informed human iPSC modeling*

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OBJECTIVES/GOALS: We leverage the disparate incidence of Ewing sarcoma (ES) between European (EUR) and African (AFR) ancestry to study ES tumorigenesis in iPSC-derived cells from donors with a range of AFR ancestry via functional / molecular profiling. Integrated multi-

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