

missing data is found to be at random. Data from external sources like UNAIDS, World Bank and IMF will also be used for comparison and validation of TESSy data for imputation of missing data. Continuous variables will be analyzed through appropriate parametric and non-parametric tests while categorical variables will be analyzed through methods of proportion. Multivariate logistic regression methods will be used to explore the associations between VL testing and VL suppression separately with age, sex, year of diagnosis, country of origin (migrants), mode of transmission, in the total population, then at country- and regional-level. The same associations will be explored using a country's EU and EEA status (EU versus EEA versus non-EU/EEA), and income status (high versus upper middle versus lower middle versus low). **DISCUSSION/SIGNIFICANCE OF IMPACT:** Even though this is a retrospective analysis of a database with likely significant missing data that may affect analysis of data and interpretation of results, our study will impact all levels of HIV policy across Europe. The strengths of this study likely outweigh the limitation imposed by missing data and include potential regional-, country- and demographic-specific public health, epidemiologic and ART program policy initiatives. Also our analysis of pattern of missing data may inform a more efficient and meaningful data collection and input into TESSy database.

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U.S. Counties with High Opioid-Overdose Mortality and Low Capacity to Deliver Medications for Opioid Use Disorder: an Observational Study

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OBJECTIVES/SPECIFIC AIMS: To identify characteristics of counties with persistently high opioid-overdose rates and low capacity to deliver medications for OUD (MOUD). **METHODS/STUDY POPULATION:** Setting: County-level opioid-overdose death data, 2013-2016, and 2017 publicly-available treatment provider data for MOUD: buprenorphine-waivered providers, opioid treatment programs (OTPs), and extended-release naltrexone providers. Participants: Populations in 3,142 U.S. counties. 24,851 buprenorphine-waivered providers; 1,517 OTPs; and 5,222 extended-release naltrexone providers. Measurements: The outcome variable, "opioid high-risk county", was a binary indicator of high (above average) opioid-overdose rates with low (below median) MOUD availability rates. We used spatial logistic regression models to determine correlates of being a high-risk county. **RESULTS/ANTICIPATED RESULTS:** 46.4% of all counties, and 71.2% of rural counties, lacked a publicly-available MOUD provider in 2017. In adjusted models, rural counties had 53% greater odds of being high-risk than urban counties. Counties in the East South Central, West South Central, and South Atlantic divisions had over twice the odds of being high-risk than counties in the West North Central division. Primary care provider density, greater traversability, and a higher proportion of the population under age 25 were all protective against a county being opioid high-risk. **DISCUSSION/SIGNIFICANCE OF IMPACT:** Counties with both low MOUD provider availability and high opioid-overdose death rates are significantly more likely to be rural, have less primary care providers per capita, and in the southern regions. Strategies to increase MOUD must account for these factors.

Team Science

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A TL1 Team Approach to Clinician Perspectives on Hoarding Disorder

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OBJECTIVES/SPECIFIC AIMS: By combining clinical knowledge of hoarding disorder (HD) with qualitative methods from cultural anthropology, we hope to build a patient-centered approach that will allow us to better understand the clinician perspectives on patient motivations and explanatory models of individuals with HD, and improve treatment outcomes. We describe the ways that these methodologies are productively merged in this project as a result of TL1 collaboration, and present a preliminary picture of methodological and theoretical issues uncovered as part of this processes. We further describe the analytical methods used for this project, and explore issues raised through the combination of psychological and anthropological data and insights. **METHODS/STUDY POPULATION:** This study represents an attempt to combine the qualitative methodologies of cultural anthropology with the clinical knowledge of psychology and psychiatry in order to better understand gaps between provider and patient beliefs and knowledge about hoarding disorder. This study will present preliminary methodological issues arising from interviews with hoarding experts. **RESULTS/ANTICIPATED RESULTS:** This study will discuss preliminary issues including shared language, strengths and limitations of both disciplines, and factors for consideration when combining these disparate methodologies. It will close with recommendations for consideration when moving forward with similar collaborations. **DISCUSSION/SIGNIFICANCE OF IMPACT:** This project seeks to unite psychological and social factors that may contribute to the lived experience of individuals with HD in order to better understand the way that HD is manifested. It also unites disparate methodologies to provide us with a more holistic and complete picture of the experience of HD. While HD has been studied within psychiatry, it has never been assessed using the qualitative methods of anthropology. These methods provide the possibility of expanding knowledge about the ways that this disorder is experienced by individuals and their families, and potentially impacted by shared beliefs and cultures. Furthermore, qualitative data of this nature provides a patient perspective on the experience of HD as a psychiatric illness. This patient perspective can be used to better inform treatment, improve patient outcomes, and to allow providers and researchers to gain a fuller understanding of this complex population.

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A TL1 Team Approach to CNS-Localized Delivery of Neurotrophic Factors for Treatment of Parkinson's Disease

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OBJECTIVES/SPECIFIC AIMS: We present an alternative strategy to retain NTFs at an injected CNS tissue site by endowing them with binding affinity for carbohydrates that are abundant on the cell surface and within extracellular matrices. **METHODS/STUDY**

POPULATION: We are creating recombinant fusions in which glial cell-derived neurotrophic factor (GDNF) is linked to galectin-3 (G3), a human protein that binds to extracellular beta-galactoside glycans and glycosaminoglycans. GDNF-G3 fusion proteins will circumvent major therapeutic shortcomings of early GDNF human trials by anchoring GDNF to the midbrain in a preclinical animal model of PD over a therapeutically-relevant timescale in order to achieve DA neuron rescue. Further, in PD patients, we have detected significantly dysregulated dopamine signaling in peripheral, blood-derived monocytes, suggesting a systemic dopamine signaling change in PD. **RESULTS/ANTICIPATED RESULTS:** Based on results from published human NTF administration trials, we anticipate that a successful intervention using GDNF-G3 will result in rescue or delayed degeneration of midbrain dopaminergic neurons in a murine PD model. Outcome measures include behavioral PD phenotype testing via rotarod and pole descent compared to non-parkinsonian control animals, as well as corroborating immunohistological evidence from immunohistochemical examination of post-mortem brain tissue from the same animals to examine degree of degeneration. **DISCUSSION/SIGNIFICANCE OF IMPACT:** Current treatments for PD, whether pharmacological or surgical, center on alleviating movement symptoms that impair daily function - in other words, largely palliative care. Little has been accomplished by way of rescue of dopaminergic neurons or slowing disease progression using standard-of-care therapy. If successful, GDNF-G3 constructs administered intracranially at the site of degeneration would represent a milestone on the path to treating the basic pathology associated with PD, while addressing major shortcomings in earlier NTF-delivery attempts, namely NTF diffusion away from target site.

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Assessment to Action: Engaging network member's in identifying needs and directions of network improvement

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OBJECTIVES/SPECIFIC AIMS: To complete a needs assessment and action planning process that engaged clinical and translational research network members in identifying needs through survey feedback, characterizing the needs in small group sessions, and developing recommendations for action at the network's annual scientific meeting. **METHODS/STUDY POPULATION:** The project included (1) a survey of 357 members across partner institutions from the Great Plains IDEa CTR Network, (2) 6 - 90 minute brainstorming sessions to characterize needs identified through survey assessment, and (3) 6 - 60 minute sessions to develop recommendations for network improvement based on the characterization activity. Approximately 75 members participated in the characterization and recommendation sessions. **RESULTS/ANTICIPATED RESULTS:** Seven areas of need from the survey were identified based upon the frequency of identification by network members (support to move research across the translational spectrum, database design and management, data access and sharing, data analysis, recruitment and retention of subjects, support for members who have submitted grants but were repeatedly unsuccessful, mentoring). Members indicated which characterization sessions they were interested in attending and based on the enrollment numbers needs related to unsuccessful grant submitters and mentoring were combined as were needs related to database design and data access-sharing. Sessions

resulted in 8 inter-related recommendations for network action that included to (1) develop GP-CTR directory/registry of clinicians, researchers, system partners, that can be used to identify people that want to be involved in research partnerships or mentoring, (2) create a GP CTR Navigators Program to will provide support to network members throughout the collaborative research and grant preparation process, (3) identify and disseminate information about assets (funding, databases/registries) that exist amongst network partners that can be leveraged by member, (4) develop a searchable repository of evidence-based interventions for T3/T4 efforts, (5) review GP CTR supported professional development, and technological resource offerings and identify potential gaps, (6) facilitate opportunities for peer support/networking, (7) provide guidance to GP CTR network institutions looking to adopt policies that will support translational research collaboration, and (8) identify potential barriers to GP CTR network engagement (i.e., infrastructure, communication, marketing). **DISCUSSION/SIGNIFICANCE OF IMPACT:** This process allowed for a wide range of network members to contribute to actionable recommendations for CTR leadership to move into action and improve the scientific network's ability to conduct clinical and translational research.

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Collaboration in Reappointment, Promotion, and Tenure Guidelines

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OBJECTIVES/SPECIFIC AIMS: As the issues facing our global society become more complex, university faculty are called upon to address these contemporary problems using interdisciplinary approaches. But do reappointment, promotion, and tenure (RPT) guidelines reflect and reward this fundamental change in the nature of higher education and scholarly inquiry? After collecting all of the RPT guidelines across the university, our research team at the University of Cincinnati (UC) conducted a content analysis of these documents to determine how collaborative work is defined, interpreted, and supported. In addition, we also sought to identify differences in how collaborative work is valued across disciplines and how that value has changed over time. **METHODS/STUDY POPULATION:** An initial database was assembled that included two distinct data samples: historical and current. Both included RPT criteria for over 100 disciplinary units at the university. Working with the initial comprehensive database, the team narrowed content by selecting all language related to collaborative work using several relevant keywords or keyword fragments (team, collaborat[*], disciplin[*], and interprofessional). This process resulted in a subset of data reflecting the area of interest that could then be coded. Three investigators independently coded common portions of the data for categories. The investigators met regularly to compare the results of their coding, and discrepancies between the investigators' coding schemes were resolved through discussion. The final, common coding scheme will be used to code the remainder of the data by each independent investigator. The team meets weekly to discuss significant passages and assign codes, and then reach consensus related to important themes that are identified. Specifically, we will examine the frequency with which collaborative activities are included, the value and emphasis given to them, and the differences across units. Having a historical sample and a current sample also allows us to