UNM SCHOOL OF MEDICINE • THE UNIVERSITY OF NEW MEXICO HEALTH SCIENCE CENTER

Abstract Booklet

1st Annual Department of Psychiatry and Behavioral Sciences Research Showcase

November 19, 2020

SCHOOL OF MEDICINE

DEPARTMENT OF PSYCHIATRY & BEHAVIORAL SCIENCES

This booklet contains all of the abstracts which will be presented at the 2020 Department of Psychiatry and Behavioral Sciences Research Showcase.

SCHEDULE

12:30-12:50 PM
Welcome and Research Overview at HSC and the Department of Psychiatry and Behavioral Sciences

12:50 - 3:50 PM
Presentations

3:50 - 3:55 PM
Break

3:55-4 PM
Breakout Room Instructions

4 - 4:30 PM
Breakout Session

4:30 - 4:35 PM
Wrap-up

ABSTRACTS

in order of presentation

1. ECT amplitude titration to improve clinical outcomes

2. Integrating Intergenerational Cultural Knowledge with Zero Suicide

3. Increased Glutamate in the Right Posterior Cyngulate Gyrus in First Episode Schizophrenia but not in Bipolar Psychosis: A Whole Brain 1H-MRS Study

4. Internalizing problems and associated medical and psychosocial factors in children and teens with cerebral cavernous malformations, type 1 (CCM1)

5. Integrated Behavioral Health in Obstetrics-Gynecology Settings: Survey of Ob-Gyn's Current Utilization, Knowledge, and Attitudes toward Expansion of Collaborative Care.

6. Integrating Peers Support Workers in Emergency Departments: A Framework for Implementation

7. A Matter Of Life And Death: A Blueprint For Scientific Challenges To The Admissibility Of Pcl-R Evidence In Capital Sentencing

8. Decision-Making under Uncertain Conditions: An Event-Related Potentials Analysis

9. Targets for the Treatment of Alcohol-Related Intimate Partner Violence.

10. Characteristics of Hispanics Referred to a Coordinated Specialty Care for 1stEpisode of Psychosis and Factors Associated with Enrollment

11. Brain Differential Gene Expression and Blood Cross Validation of a Molecular Signature of Patients with Major Depressive Disorder

12. An Experience with Improvisation Theater to Prevent Burnout in Psychiatric Residency

13. Training Psychiatrists in New Mexico: 30 Years of Rural Residency

14. Mental Health Burden among Black Adolescents: The Need for Better Assessment, Diagnosis and Treatment Engagement

15. Outcomes of a continuing education program for law enforcement to improve responses to people in behavioral health crisis

16. A Descriptive Study of Access to Substance Use Treatment in New Mexico Background

17. Association of ECHO participation on expanding buprenorphine treatment for opioid use disorder in rural primary care

18. Exploration of Lived Psychotic Experiences Using DIPEx Methodology

Title: ECT amplitude titration to improve clinical outcomes

Presenter: Chris Abbott, MD

Time of Presentation: 12:50 - 1 PM

Abstract: Electroconvulsive therapy (ECT) stimulation parameter selection reflects a balance between efficacy and cognitive adverse effects. ECT stimulation parameters associated with more antidepressant efficacy (non-focal electrode placement, longer pulse width) are associated with increased risk of cognitive adverse effects. Amplitude is currently fixed at 800 or 900 milliamperes (mA) in standard clinical practice with no clinical or scientific basis. Amplitude determines the intensity of the spatial distribution of the electric field (E-field). With a fixed extracranial amplitude, the ECT “dose” as represented by the E-field is highly variable due to anatomic differences in skin, skull, fluid, and brain tissue. This anatomic variability is prominent in older (age 50+) depressed patients and can compromise both antidepressant efficacy (insufficient stimulation of mood-related circuitry) and safety (inducing cognitive impairment due to excessive stimulation of cognitive related circuitry). Amplitude titration, as proposed in this current proposal, can reduce the variability related to fixed amplitude dosing and optimize clinical and cognitive outcomes. The goal of this project is to change standard ECT parameter selection from a fixed amplitude to an individualized and empirically determined amplitude. To achieve this goal, we will focus on the relationship between amplitude titration and treatment-responsive changes in hippocampal neuroplasticity withRUL fixed amplitude ECT. Fixed amplitude ECT results in variable E-field or ECT dose. Over the course of an ECT series, the variable ECT dose will result in inconsistent changes in hippocampal neuroplasticity. In contrast, pre-translational investigations have demonstrated that amplitude titration results in a consistent E-field or ECT “dose”.Seizure titration amplitudes (based on historic data, 233 to 544 mA) are below the amplitude range of FDA-approved ECT devices (500 to 900 mA) and will require an adaptor to reduce the output amplitude (Investigational Device Exemption).Amplitude titration will also be below the hippocampal neuroplasticity threshold and insufficient for antidepressant response.The difference between RUL amplitude titration and RUL fixed amplitude (800 mA) ECT will determine the degree of target engagement with the hippocampus.To illustrate, subjects with low amplitude titration of ~250 mA (800/250, high fixed/titration amplitude ratio) will have significant changes in hippocampal neuroplasticity. Subjects with high amplitude titration ~500 mA (800/500, low fixed/titration ratio) will have minimal changes in hippocampal neuroplasticity.The relationship between amplitude titration and fixed amplitude hippocampal neuroplasticity will be used to develop the amplitude multiplier required for consistent and clinically effective ECT dosing.A randomized controlled trial will then comparehippocampal neuroplasticity, antidepressant, and cognitive outcomes betweenamplitude titration with neuroplasticity multiplier (fixed pulse number) and traditional fixed amplitude ECT (800 mA, variable pulse number) in older depressed subjects.

Keywords: ECT, major depressive disorder, imaging, electric field

Title: Integrating Intergenerational Cultural Knowledge with Zero Suicide

Presenter: Deborah Altschul, PhD

Co-presenters/Co-authors: Brandi Fink, Esther Tenorio, Jimel Sandoval, Ryan Sanchez, Bernice Chavez

Time of Presentation: 1 - 1:10 PM

Abstract: Integrating Intergenerational Cultural Knowledge Exchange with Zero Suicideis an innovative study in a Southwestern tribal nation that incorporates Zero Suicide into primary care settings. The goal of this study is to determine the effectiveness of Zero Suicide plus a cultural component (ZS+) (experimental group) compared to Zero Suicide (ZS) alone (control group) on suicidal ideation, behaviors, and resiliency in a randomized control trial of 138 American Indian (AI) youth ages 12-24 at two rural IHS clinics on the Pueblo of San Felipe. The long-term goal of this study is to determine which is more effective at reducing suicidal ideation and behaviors and increasing resiliency, ZS+ or ZS alone. Short-term goals include training providers on the Zero Suicide model and manualizing the Katishtya Intergenerational Culture Knowledge Seminars (KICKS) curriculum that was piloted and positively evaluated as a cultural module to improve the adoption and acceptability of Zero Suicide. These goals are followed by recruitment, implementation, data analysis and dissemination. Data will be collected from all experimental and control group participants at 4 time points: baseline, 12-weeks, 6-months and 9-months to explore the effects of the intervention over time. The central hypothesis is that ZS+ will be more effective then ZS alone. The aims of the study are the following:

1. Specific Aim 1: Using Community Based Participatory Research (CBPR), partner with tribal stakeholders and researchers to formally manualize the KICKS cultural module for Zero Suicide (ZS+);
2. Specific Aim 2:To determine if adding a cultural component to the Zero Suicide model is more effective at reducing risk factors and increasing resiliency in AI youth than Zero Suicide alone
3. Specific Aim 3: Determine the essential features of the KICKS module for adaptation by other tribes and disseminate the model.

Keywords: Health Disparities, Native American Mental Health, RCT

Title: Increased Glutamate in the Right Posterior Cyngulate Gyrus in First Episode Schizophrenia but not in Bipolar Psychosis: A Whole Brain 1H-MRS Study

Presenter: Juan Bustillo, MD

Co-presenters/Co-authors: Grace Mayer, Joel Upston, Tom Jones, Mauricio Tohen, Rhoshel Lenroot.

Time of Presentation: 1:10-1:20 PM

Abstract: Background: Proton magnetic resonance spectroscopy (1H-MRS) studies have examined glutamatergic abnormalities in psychosis, mostly in single voxels. Though the critical brain nodes remain unknown, psychosis involves networks with broad, subtle abnormalities. Hence, an unbiased approach is advantageous. We used a 3D-1H-MRS approach to examine glutamine-plus-glutamate (Glx), in early schizophrenia and bipolar-I. Methods: 3D-1H-MRS was acquired at 3T using an EPSI sequence. Young psychosis subjects (n=76, mean age=23; Sz=48, BP-I=21, Psychosis NEC=7) and healthy controls (HC, mean age=23; n=51) were studied. Glx, N-acetylaspartate (NAA), choline, creatine and myo-inositol were fitted with MIDAS, referenced to water and partial volume corrected for CSF.Group contrasts for each metabolite (adjusted for gray/white matter voxel tissue proportion and age) from all individual voxels that met spectral quality, were analyzed in common brain space. Only voxels with group differences ($p<0.001$) in the same direction were included in clusters (cluster-level alpha-value -CCLAV ≤0.05). Results: Compared to HC, the psychosis group had increased Glx in one cluster (20 voxels) centered in the right posterior cingulate gyrus (CCLAV=0.02). Glx in this region was not associated with symptoms but had a negative correlation with overall cognitive performance (from the MATRICS battery) in psychosis ($r= -0.3$, $p=0.03$) and in HC ($r= -0.3$, $p=0.05$) groups. Antipsychotic-naïve patients had increased Glx in right superior temporal areas compared to HC (32 voxels, CCLAV >0.01) and compared to medicated psychotic patients (18 voxels, CCLAV =0.04). Compared to BP-I, the Sz group had increased Glx in the right posterior cingulate gyrus (19 voxels, CCLAV=0.05). Compared to HC, the psychosis group had increased creatine in two clusters: one large cluster (91 voxels) involving left insula, temporal, parietal and occipital regions (CCLAV=0.02); and a smaller cluster (16 voxels) in bilateral occipital cortex (CCLAV=0.05). The Sz vs HC group had increased creatine in two large clusters: one (185 voxels) involving bilateral occipital regions (CCLAV >0.01); and another (152 voxels) in left insula, temporal, parietal and occipital regions (CCLAV >0.01). Compared to BP-I, the Sz group had increased creatine in two clusters: one large cluster (91 voxels) involving left insula, temporal, parietal and occipital regions (CCLAV=0.02); and a smaller cluster (16 voxels) in bilateral occipital regions (CCLAV=0.05). Compared to HC, the antipsychotic-treated Sz group had increased creatine in four clusters: in the left insula, frontal, parietal and temporal regions (251 voxels, CCLAV >0.01); bilateral occipital (218 voxels, CCLAV >0.01); right insula (86 voxels, CCLAV >0.01); and left frontal (24 voxels, CCLAV =0.05). Finally, compared to antipsychotic-naïve, medicated Sz had increased creatine in one cluster (21 voxels) in the left middle frontal area (CCLAV =0.04). Creatine clusters did not correlate with symptoms or cognitive performance. Conclusions: Increments in Glx in the right posterior cingulate may be critical to the pathophysiology of schizophrenia. This supports a model of NMDA hypofunction in areas critical for retrieval of autobiographical memories, attention and emotional regulation, early in the illness, regardless of antipsychotic therapy.Postmortem and neuromodulation schizophrenia studies focusing on right posterior cyngulate, may provide critical mechanistic and therapeutic advancements, respectively.

Keywords: Glutamate, Schizophrenia, Bipolar

Title: Internalizing problems and associated medical and psychosocial factors in children and teens with cerebral cavernous malformations, type 1 (CCM1)

Presenter: Rick Campbell, PhD

Co-presenters/Co-authors: Christine L. Petranovich, Ph.D Children's Hospital Colorado, Department of Rehabilitation Medicine, Aurora, CO; University of New Mexico, Department of Psychiatry and Behavioral Sciences, Albuquerque, NM; Richard Campbell, Ph.D University of New Mexico, Department of Psychiatry and Behavioral Sciences, Albuquerque, NM; Blaine Hart, M.D.University of New Mexico, Department of Radiology, Albuquerque, NM; Darbi Gill University of New Mexico Center for Brain Recovery and Repair Albuquerque, NM; Kevin Wilson University of New Mexico Center for Brain Recovery and Repair Albuquerque, NM; Leslie Morrison, M.D.University of New Mexico, Department of Neurology and Pediatrics, Albuquerque, NM

Time of Presentation: 1:20-1:30 PM

Abstract: Objective: Cerebral cavernous malformation associated with the Common Hispanic Mutation (CCM1) is a rare condition that is characterized by negative neurological sequalae, including chronic headaches. Internalizing problems, including anxiety and depression, may be expected given these medical risk factors, although this has yet to be documented. In other pediatric neurological disorders, internalizing problems are common and have been associated with a variety of factors, including younger age at diagnosis, greater headache severity, and the use of disengaged coping strategies. As these relationships have yet to be examined in children/ teens with CCM1, this study examined internalizing problems and the associations with age at diagnosis, headache disability, and child/ teen and caregiver coping. Method: Twenty-two children/ teens with CCM1 completed ratings of internalizing problems and headache disability. Caregivers and the children/teens each rated their strategies for coping with CCM1-related stresses. Results: Eighteen percent of the sample reported clinically elevated internalizing problems. Greater headache burden was associated with more internalizing problems. There was a significant interaction of age at the time of CCM1 diagnosis with the child's/ teen's use of disengaged strategies for coping with CCM1-related stresses. For this interaction, higher disengagement was associated with more internalizing problems for those who were diagnosed with CCM1 at a younger age ($p = .03$). The interaction of caregiver disengagement and the child's/ teen's age at diagnosis was also statistically significant, although post-hoc effects were non-significant ($p > .05$). Conclusion: Headache disability confers risk for emotional problems and may be an important component of CCM1 medical and psychological care. Coping represents an additional modifiable risk factor and patients with CCM1 may benefit from supports that focus on adaptive coping skills, particularly if diagnosed at a young age.

Keywords: Children, Emotions, Cerebral cavernous malformations

Title: Integrated Behavioral Health in Obstetrics-Gynecology Settings: Survey of Ob-Gyn's Current Utilization, Knowledge, and Attitudes toward Expansion of Collaborative Care.

Presenter: Jennifer Crawford, PhD

Time of Presentation: 1:30-1:40 PM

Abstract: Obstetrics and gynecology (ob-gyn) and related women's health specialty settings, provide an underutilized opportunity to connect patients with needed behavioral health screening and care, including for high priority concerns (e.g. opioid misuse and severe depression/suicidality; see Lan Le et al, 2019 for example). Limited research has described existing behavioral health collaborative care models within ob-gyn practice settings, most often focused on mood disorders during the perinatal period. However, it remains unclear how wide-spread access to integrated behavioral health providers (BHP) is in ob-gyn settings. The goal of this study was to examine the current availability of IBH in ob-gyn practice settings, including general availability of BHPs and characteristics of integration. We also attempted to clarify the perceived need for and acceptability of IBH to ob-gyn providers, their perception of the feasibility of such integration, and their willingness to complete training related to collaborative care with BHPs. We examined individual and practice characteristics that may influence availability, feasibility, and acceptability of IBH, including gender, type of specialty, location of practice, current familiarity with IBH, past training in collaborative care, and current awareness of BH needs of patients. Implications for future implementation, education, and research are described.

Keywords: Integrated behavioral health, obstetrics/gynecology, women's health

Title: Integrating Peers Support Workers in Emergency Departments: A Framework for Implementation

Presenter: Jennifer Earheart

Co-presenters/Co-authors: Annette Crisanti, PhD

Time of Presentation: 1:40-1:50 PM

Abstract: In 2018 an estimated 2 million people had an Opioid Use Disorder (OUD). The number of overdose deaths involving any opioid has more than doubled in the last 10 years (47,600 in 2017 compared to 18,515 in 2007). When patients present at emergency departments with an opioid overdose or an opioid related event the goal is to get individuals stabilized and discharged as efficiently as possible. Realizing that more needs to be done to address this public health problem, many hospitals are now searching for effective ways to connect people to addiction treatment and resources at the time of overdose. The peer support services model has shown to be effective in increasing linkages to services and patient engagement and well-being. In the last few years there has been increasing focus on implementing the peer support model in the emergency department to respond to the rising intake of opioid related ED visits. Although this appears to be a promising practice there is limited guidance on how best to incorporate and adapt peer support services to the emergency room setting.

This presentation will present findings on an assessment conducted to determine the barriers and facilitators to implementing peer support services in the ED. The presentation will also provide a framework and checklist for implementation that will include key components to creating a peer support response to opioid related events, specifically for the emergency department.

Keywords: peer support workers, implementation research, emergency department

Title: A Matter Of Life And Death: A Blueprint For Scientific Challenges To The Admissibility Of PCL-R Evidence In Capital Sentencing

Presenter: Jaymes Fairfax-Columbo, PhD, JD

Time of Presentation: 1:50 - 2 PM

Abstract: Psychopathy is a clinical construct characterized by a person's exhibiting a cluster of "interpersonal, affective, and lifestyle characteristics" (Hare, 1999). Notable characteristics include dominance orientation, grandiosity, callousness, glibness, criminality, impulsivity, etc.

Often considered the "gold standard" in psychopathy assessment is Hare's Psychopathy Checklist Revised (PCL-R) (Hare, 1991, 2003), a 20-item measure administered via a combination of semis-tructured interview and collateral record review. Due to its strong association with violence, criminal offending, and recidivism, PCL-R score is often used inform estimates of future violence risk (aka "future dangerousness") and offered as evidence in United States courts. Common referral questions for which PCL-R evidence is introduced include juvenile transfer, Sexually Violent Predator (SVP) commitment, criminal responsibility, general sentencing, and capital sentencing. Use of the PCL-R in the final context—capital sentencing—has come under increased scrutiny in recent years (see, e.g., DeMatteo et al., 2020). Capital sentencing represents the second state of a bifurcated death penalty trial, focusing on distinguishing whether a convicted defendant is deserving of death or life imprisonment (Vartkessian, 2012). For death to be imposed, states must prove the existence of at least one statutorily-enumerated and precise aggravating circumstance (see Gregg v. Georgia, 1976; Godfrey v. Georgia, 1980). Currently, a handful of states enumerate future dangerousness—operationalized as an individual's likelihood of serious institutional violence—as one such circumstance. Though predictive of violence and recidivism generally, PCL-R score is a poor predictor of institutional violence specifically (Guy et al., 2005; Leistico et al., 2008; Walters, 2003a, 2003b). This is particularly problematic in capital sentencing contexts, as risk for institutional violence is the key consideration in determining future dangerousness; PCL-R evidence offered for this purpose can be considered spurious at best. Exacerbating concerns over the PCL-R's poor predictive ability regarding institutional violence are research findings suggesting the existence of a "psychopath" labeling effect in which defendants described to be psychopaths or attributed psychopathic traits are significantly more likely to be perceived as dangerous and worthy of death than defendants not labeled or described as such (see, e.g., Kelley et al., 2018). Further compounding concerns about PCL-R evidence being used to demonstrate future dangerousness at capital sentencing are accumulated research findings suggesting that though the PCL-R exhibits sound psychometric properties in research settings, its interrater reliability in field settings is suspect and possibly subject to adversarial allegiance (see DeMatteo et al., 2020, for a review). This presentation focuses on describing how attorneys might use the scientific evidence above to argue for exclusion of PCL-R evidence from consideration in capital sentencing contexts. Prior research suggests that attorneys do not challenge admissibility of PCL-R evidence often, but, when they do, there is a likelihood of success (Fairfax-Columbo et al., 2015). Based on the scientific evidence above, potentially fruitful challenges include arguing for exclusion of PCL-R evidence due to its irrelevance (FRE 401); substantial prejudicial impact (FRE 403); or as not meeting Daubert/Frye/FRE 702 criteria for admissibility of expert testimony. Additionally, legal and ethical motivations for attorneys to make such challenges are explored.

Keywords: Psychopathy, Capital sentencing, Criminal risk

Title: Decision-Making under Uncertain Conditions: An Event-Related Potentials Analysis

Presenter: Danielle Farrar, MD

Time of Presentation: 2:00-2:10 PM

Abstract: Decision-making is an essential human function, and resolving uncertainty during decision-making is one of the most difficult components of decision-making.Understanding the neural underpinnings of uncertainty during decision-making is vital to understanding how this function is impaired during diseased states.Our aim in this study was to identify event-related potentials (ERPs) that correlate with decision-making under uncertain conditions. Building on prior functional imaging results using the same paradigm, we utilized a 128-electrode BioSemi EEG setup in order to both localize spatially as well as resolve temporally the aspects of decision-making under uncertainty that occur during our paradigm.We successfully identified a robust ERP associated with decision-making under uncertain conditions 500-1000 ms post stimulus in the posterior inferior regions of the brain.In addition, when measuring response to correct versus incorrect feedback, a p300-like potential was noted, possibly representing the context-updating that occurs when an individual receives either correct or incorrect feedback.Using an innovative decision-making paradigm, we have successfully identified potential biomarkers of uncertainty during decision-making that not only better describe the brain networks involved in these processes, but also provide a framework on which to build future research into decision-making in pathological conditions.

Keywords: Decision-Making, EEG, ERP

Title: Targets for the Treatment of Alcohol-Related Intimate Partner Violence.

Presenter: Brandi Fink, MD

Co-presenters/Co-authors: Eric D. Claus, PhD, James Cavanagh, PhD, Derek A. Hamilton, PhD

Time of Presentation: 2:10-2:20 PM

Abstract: Intimate partner violence (IPV) is a significant public health problem for which there are currently no effective interventions (Babcock et al., 2004; Bradley et al., 2014; Crane & Easton, 2017; Sartin et al., 2006), andan increasing number of homicides by intimate partners(Fridel & Fox, 2019). Thirty to 50% of couples will experience IPV at some point in their relationship, 35% of couples will experience IPV in any given year (Rhoades, Stanley, Kelmer & Markman, 2010). Furthermore, alcohol use is present in up to 70% of IPV incidents and is associated with an increase in the frequency and severity of violent incidents (Leonard & Quigley, 1999). Although the association between alcohol use and intimate partner violence is well established, we are only beginning to understand the mechanisms of this association. Work in our lab has demonstrated that partners with a history partner violence become neurophysiologically over-aroused in conflict, especially after alcohol consumption, and appraise their partners' behavior as more negative when acutely intoxicated. Our presentation will discuss these findings and the implications for developing treatments that engage the targets that have been identified by this work.

Keywords: Alcohol, Intimate Partner Violence, Treatment

Title: Characteristics of Hispanics Referred to a Coordinated Specialty Care for 1st Episode of Psychosis and Factors Associated with Enrollment

Presenter: Bess Friedman, MS

Co-presenters/Co-authors: D. Duran, A. Nestsiarovich, M. Tohen, R. Lenroot, J. Bustillo, A.S. Crisanti

Time of Presentation: 2:20-2:30 PM

Abstract: Objective: The primary objectives of this study were to (i) examine referral sources, demographics, and clinical and socio-environmental characteristics among Hispanics referred to and enrolled in CSC compared to other racial/ethnic groups and, to(ii) explore which factors were associated with enrollment to CSC.

Methods: A retrospective review was conducted on all individuals referred to the Early CSC program over a two year period. Extracted data included referral sources, demographics and clinical characteristics. Zip code-level data from publicly available sources were cross-referenced with each individual record. Non-parametric tests and appropriate post-hoc analysis were used to determine significant differences across racial/ethnic groups referred to or enrolled in the Early program. A random forest model was used to determine which factors or interacting factors were associated with eligible referrals enrolling in services.

Results: Hispanic individuals were more likely to be referred from in or outpatient mental health providers and not from the community. Eligible Hispanics living in areas with a lower percent of Spanish spoken in the home were more likely to enroll in services than eligible Hispanics living in areas with higher percent of Spanish spoken at home.

Conclusions: Continued exploration of factors associated with referral and enrollment processes for the growing Hispanic ethnic group in the US can help to determine best steps for developing CSC programs.

Keywords: First Episode Psychosis, Hispanic, Referrals

Title: Brain Differential Gene Expression and Blood Cross Validation of a Molecular Signature of Patients with Major Depressive Disorder

Presenter: Hugo Gomez Rueda, MD

Time of Presentation: 2:30-2:40 PM

Abstract: Introduction: Major Depressive Disorder (MDD) is highly prevalent and a leading cause of disability. However, the diagnostic reliability of MDD has been questioned. According to the field trials of the DSM 5 Mood Disorders Working Group, the agreement between clinicians diagnosing MDD only achieved an intraclass Kappa of 0.28 (CI 95% 0.20–0.35). The objective of this study was identifying a reproducible and robust gene expression marker, capable of differentiating MDD from healthy control subjects (HC).

Materials and Methods: Brain and blood datasets were searched on GEO of NCBI, which contained subjects with MDD and HC. The microarray datasets were normalized using quantile normalization. All the datasets included in this study were transformed to a scale ranking with a distribution 0-1. Due to itsnsize, number of brain structures contained in the dataset, and presenting with RNASeq data, the database GSE80655 was used to identify the molecular signature based on gene expression. This dataset was filtered with a differential gene expression between patients with MDD and HC. The marker identification was made using GALGO R package. The robustness and reproducibility tests were completed in datasets of brain and blood. Finally, a correlation analysis between samples in brain and blood datasets was made, as well as an enrichment analysis using a Gene Ontology analysis on String online database.

Results:Fourteen brain datasets and 7 of blood datasets of subjects with MDD and HC were identified. After the filtering process, 28 genes were differentially expressed in the dataset GSE80655, and these 28 genes were analyzed with GALGO R package. As a result, 23 genes were selected as the most important to differentiate between patients with MDD and HC, with an accuracy of 0.77 and 0.8, before and after the Forward Selection Model (FSM), respectively. The gene marker robustness and reproducibility were between the range of 0.53 and 0.8 in the other brain datasets and between 0.53 and 0.98 for the blood data sets. Also, we found a high correlation between the samples of the datasets GSE80655, GSE101521, and GSE87610 in the same brain area (DLPFC), as well as in the datasets of brain tissue GSE80655, GSE87610, GSE101521, GSE53987, and the blood datasets GSE38206, GSE76826, GSE39653, GSE52790, and GSE98793. Finally, thirteen of the 28 genes were related to stress and immune response.

Conclusions:The current analysis showed, that: 1) there is an association between the gene expression of the identified marker from subjects with MDD and HC in the blood and brain tissues; 2) a 23 gene expression marker was able to distinguish subjects with MDD from HC with an acceptable accuracy in most of the databases investigated; and 3) this marker includes genes related to stress and immune response, consistent with a current model of depression. Future studies in larger samples including other clinically relevant control groups (like dementia and personality disorders) will be necessary to further develop a marker with minimal overfitting bias, which is reproducible and universal.

Keywords: Marker, Depression, Molecular

Title: An Experience with Improvisation Theater to Prevent Burnout in Psychiatric Residency

Presenter: Jeffrey Katzman, MD

Co-presenters/Co-authors: Peter Felsman

Time of Presentation: 2:40-2:50 PM

Abstract: Burnout is common within the continuum of medical training and practice. It has been shown to be associated with depression, loneliness, suicidal ideation, and lower patient satisfaction and perceived quality of care.An examination of the burnout literature reveals that it is prevalent in medical students, residents, as well as practicing physicians. Burnout poses significant challenges during early training years in residency. Time demands, lack of control, work planning, work organization, inherently difficult job situations, and interpersonal relationships are considered factors contributing to residents' burnout. Burnout has been shown to be problematic in psychiatric residency programs. A recent review of 22 studies looking at this issue identified a burnout rate for psychiatry residents of 37 percent. This was particularly prominent in the first years of training, for non-parental residents, and those with less clinical supervision.Potential interventions have included workplace programs such as education about burnout, workload modifications, increasing the diversity of work duties, stress management training, mentoring, emotional intelligence training, and wellness workshops. Interventions at the individual level have included promoting interpersonal professional relations, meditation, counseling, and exercise – all which have been shown to be helpful.

A group of volunteers participated in a six-week evening course in improvisational theater, with an aim to investigate the impact of this intervention on burnout. Along with assessing general measures for burnout, the study examined the impact of the intervention on the capacity for play, comfort with the unknown, and therapist self-efficacy. Trainees were volunteers from four PGY classes with minimal background in improvisational theater. Nine residents participated in the course, and a control group of ten resident non-participants filled out surveys over the same time period. They completed surveys prior to, immediately following, and 1 months following the class. Surveys included measures ofburnout (Professional Fulfillment Index; Stanford, 2016), playfulness (Playfulness scale; Barnett, 2007), self-compassion (Self-Compassion Scale; Raes, Pommier, Neff, & Van Gucht, 2011), and intolerance of uncertainty (IUS-12(Freeston, Rhéaume, Letarte, Dugas, & Ladouceur, 1994).

Trainees subjectively ranked the improvisation experience as among the most important in their education, with some evidence of alleviating burnout. All participants desired to continue with a second round of classes. They demonstrated an enhanced ability to engage in the world, enhanced playfulness generally, and indications of decreased burnout. They significantly demonstrated less intolerance of uncertainty with significantly less paralytic inhibition in the face of the unknown. The ability to take action when the correct intervention is unclear or without complete information represents a significant stress for medical providers in general, and psychiatrists specifically. Finally, with the onset of the pandemic, the ability to engage with others was significantly higher in the improvisation group than the control group following the onset of the pandemic. This study points to the potential of improvisation as a training experience to become more comfortable with taking actions in the face of the unknown while potentially relieving burnout and coping with adversity.

Keywords: Burnout, improvisation, resident training

Title: Training Psychiatrists in New Mexico: 30 Years of Rural Residency

Presenter: Cynthia Killough

Co-presenters/Co-authors: Erin Rush, Rahul Vasireddy

Time of Presentation: 2:50 - 3 PM

Abstract: Background: New Mexico is below national the benchmark for psychiatrists with the most dramatic need being in rural areas. In order to address this need The University of New Mexico's Department of Psychiatry, in collaboration with the State of New Mexico's Behavioral Health Services Division, developed the Rural Psychiatry Residency Program (UNM RPRP) in 1991. Since that time, the program has provided specialized rural training and education for psychiatry residents. Previous studies collected data on graduates from the program between 1991-2010 and found that the UNM RPRP helped to retain providers in rural New Mexico.

Aim: To survey UNM psychiatry residents and fellows who graduated in 2010 or later to assess the impact of the UNM RPRP on psychiatric workforce development in New Mexico.

Methods: A survey was sent via email to 140 UNM Department of Psychiatry Residency graduates and current residents between 2010-2020. Eighty-four surveys were completed. Study questions assessed the practice locations and patient populations of responding physicians.

Results: The overall response rate was 60%.Nineteen of the respondents were residents that had participated in the rural program.Nearly equal numbers of individuals from the rural and traditional tracks were working with underserved or rural populations, 63% and 64% respectively. Eighty-four percent of the individuals that participated in the rural track are still practicing in New Mexico as compared to 56% who did not participate in the rural track. One individual, who did not participate in the rural program, identified as currently living in a rural area.

Conclusions:More alumni of the UNM RPRP program continue to work in New Mexico as compared to those who did not participate in the UNM RPRP. While many providers took care of patients from underserved and rural communities, few providers actually lived in rural areas.This finding was unlike a previous study of the UNM RPRP in which more providers that participated in the rural program chose to live in rural areas. Some of the perceived barriers to living in rural communities included distance from family and social isolation. Changing practice patterns could be a reflection of the changing landscape in the job market for psychiatrists and the growing use of telehealth, making it unnecessary for a job to be tethered to a particular geographic area. Recent changes in the RPRP, in which a more concentrated rural experience was traded for longitudinal rural experience,may also be a contributing factor to changing practice choices.Information from this study may be used to better craft rural experiences for residents as well as identify broader structural barriers to living and practicing in rural communities.

Keywords: Workforce development, rural health, training program

Title: Mental Health Burden among Black Adolescents: The Need for Better Assessment, Diagnosis and Treatment Engagement

Presenter: David Lardier, PhD

Co-presenters/Co-authors: Ijeoma Opara, PhD, LMSW, MPH Stony Brook University School of Social Welfare; Bridgette M. Brawner, PhD, MDiv, APRN University of Pennsylvania School of Nursing

Time of Presentation: 3 - 3:10 PM

Abstract: Objective: The purpose of this study was to better understand the mental health of Black adolescents that are not in treatment by comparing both mental health disorders and symptoms between an in-treatment group and non-treatment group. By better understanding the mental health of Black adolescents, research, clinical and policy recommendations can be developed.

Methods: Data was derived from a Centers from Disease Control & Prevention-funded adolescent health program (N=154). All youth identified as Black and were above the age of 14 years old.

Results: Black adolescents in the mental health treatment group were more likely to meet criteria for mental health disorders, but 24% of Black adolescents that were not in mental health treatment also met criteria for mental health disorders, more specifically, anxiety disorders including panic disorder. Both groups experienced high levels of trauma exposure, high prevalence of suicide ideation, substance use and depressive symptoms in both groups

Conclusion: Many Black adolescents who would benefit from mental health treatment are not receiving it due to being not being officially diagnosed. Clinicians such as primary care providers and school nurses should be prepared to assist these youth and systems of care should evaluate how to successfully engage and provide care for this vulnerable population.

Public Significance Statement:Mental health disparities greatly impact Black adolescents. This study suggests that among Black youth whom are receiving mental health treatment and those that are not in treatment, have high rates of mental health disorders, trauma exposure, substance use and suicidality. Adolescent health care practitioners should be trained to screen for these problems and treat or refer them successfully.

Keywords: mental health, black adolescents, treatment engagement

Title: Outcomes of a continuing education program for law enforcement to improve responses to people in behavioral health crisis

Presenter: Nils Rosenbaum, MD

Co-presenters/Co-authors: Annette Cristanti, Kimberly McManus, Martin Gonzales

Time of Presentation: 3:10 - 3:20 PM

Abstract: The Crisis Intervention Team (CIT) training is the gold standard for training law enforcement in the area of behavioral health. However, a major limitation with the CIT model is that it is a one-time 40-hour course and there are few opportunities for continuing education for law enforcement once the training has been completed. The CIT ECHO was developed to address the need for continuing education after CIT basic training. It is not a replacement for a CIT course, but rather a platform for extended learning outside of the CIT classroom.

The CIT ECHO is a partnership between the Albuquerque Police Department and the University of New Mexico's Department of Psychiatry and Behavioral Sciences. The project connects law enforcement agencies across New Mexico and the country with CIT experts and psychiatrists to provide education on CIT best practices and review calls for service involving challenging behavioral health cases. The CIT ECHO uses the Project ECHO® model, an evidence-based videoconferencing model designed to link primary care physicians to a network of healthcare specialists in order to receive ongoing mentoring and feedback on complex patient cases. While the ECHO model has been documented as an effective tool for continuing medical education in subspecialty areas, documentation of its effectiveness in law enforcement is limited.

CIT ECHO sessions are 90 minutes and consist of two parts: a brief didactic presentation related to CIT policing or mental health and debriefings on officer cases involving behavioral health challenges. Presentations focus on the safety of interactions between officers and people living with mental illness, psychiatric diagnoses, de-stigmatization, and resources. The case debriefings provide an opportunity for officers to receive feedback and recommendations from their peers, experienced CIT detectives and psychiatrists, including information on de-escalation techniques, resource referrals, identification of subject behaviors, and appropriate communication techniques.

A mixed method evaluation of CIT ECHO completed in 2019 shows positive outcomes for public safety and their interactions with people who are experiencing a behavioral health crisis. These positive outcomes include: increases in confidence and comfort when interacting with someone in crisis; changes in attitudes towards people living with mental illness; increases in awareness of resources; and increases in knowledge about CIT best practices.These outcome data will be presented and implications of the findings will be discussed.

Keywords: Mental health and substance use, public safety, evaluation

Title: A Descriptive Study of Access to Substance Use Treatment in New Mexico Background

Presenter: Erin Rush Ortegon, MD

Co-presenters/Co-authors: Rex Wafula Sitti

Time of Presentation: 3:20 - 3:30 PM

Abstract: Substance use-related deaths are an ongoing concern in New Mexico.Alcohol-related death rates in New Mexico were nearly twice the national averagebetween2013-2017 (CDC, 2019). Additionally,in 2017, New Mexico was seventeenth nationally for drug overdose deaths. Understanding the gaps in substance use treatment helps to identify workforce needs. This study investigates the availability and access to substance use treatment services in New Mexico.

Methods: This study used descriptive statistics from Medicaid claims data from calendar year 2018. Only individuals with a substance use disorder (SUD) diagnosis were included. Qualitative data was obtained using semi-structured interviews and focus groups with behavioral health stakeholders. Geographic information system mapping (GIS) data visualization was used for county-level representation.

Analysis and Results: Opioid Use Disorder (OUD): Bernalillo, Rio Arriba, and McKinley Counties have 0.24, 0.91, and 0.36 practitioners per 1,000 people prescribing buprenorphine, respectively. All counties have a prescriber of buprenorphine but only Bernalillo (16) and Santa Fe (14) Counties have high numbers of initiation. Ten counties lack practitioners initiating buprenorphine and eight counties only have one. Qualitative data suggests a training and incentives gap for providers and the community. For instance, one respondent states: "If a counselor is not aware of what OTP (opioid treatment programs) do- they get scared when they start working in one."

Medication-assisted Treatment (MAT) for Alcohol Use Disorder (AUD):McKinley (4.56), San Miguel (2.25), Santa Fe (2.57), and Rio Arriba (2.51) have the highest number of individuals receiving MAT. Bernalillo and Dona Ana Counties had lower than expected individuals receiving MAT (1.43) and (1.2) respectively. There are few practitioners prescribing MAT for AUD in McKinley, San Miguel, Santa Fe, and Rio Arriba (0.31, 0.61, 1.08, 0.82) Counties. Qualitative data supporting quote:

"We have only two prescribers in the area and we are really struggling to find services for MAT patients."

Other treatment: Counties in the southeastern corner of the state, including Dona Ana (1.2), Otero (1.64), Chaves (1.57), Eddy (1.53), and Lea (1.07) have limited access to practitioners prescribing to individuals with SUD. They also have low numbers of practitioners providing therapy.These numbers are equivalently low in Bernalillo (1.52) County. A review of qualitative data shows that the southeastern region may have cultural barriers or bias:

"We still have a lack of knowledge in the community with both medical and behavioral health providers who continue to be resistant about MAT. They believe that internal strength is the only way and introducing medication is wrong."

Discussion:Most counties need additional practitioners providing OUD and AUD treatment. The gap in practitioners initiating buprenorphine in counties with high overdose rates like Guadalupe, Hidalgo, and Colfax is concerning and indicates a need for additional support, possibly using telehealth. There is a need for increasing the number of practitioners prescribing buprenorphine in Bernalillo and Rio Arriba Counties. Lastly, the southeastern region has limited access to practitioners treating individuals with SUD. Data analysis supports bolstering practitioner comfortability with the diagnosis and treatment for individuals with SUD in this region.

Keywords: access, substance, services

Title: Association of ECHO participation on expanding buprenorphine treatment for opioid use disorder in rural primary care

Presenter: Julie Salvador, PhD

Co-presenters/Co-authors: Rana AlKhafaji

Time of Presentation: 3:30 - 3:40 PM

Abstract: Context: Access to medications for opioid use disorders (MOUD) is limited, especially for rural communities in New Mexico. Documented barriers limit integration of treatment for opioid use disorder (OUD) using FDA approved medications in primary care settings, inhibiting provider training and delivery of treatment. Innovative delivery mechanisms to enhance integration of services. Objective: Examine impact of participation in the Extensions for Community Healthcare Outcomes model (ECHO) intervention on expansion of OUD treatment using buprenorphine among rural primary care providers. Study Design: Quasi-experimental, pretest-posttest design along with mixed method evaluation to assess achievement of benchmark measures related to MAT integration. Inferential statistics examine the association between participation in ECHO sessions on expansion of MOUD treatment. Setting: Rural outpatient primary care providers in New Mexico and surrounding rural border area states including Medical Doctors, Doctors of Osteopathic Medicine, Nurse Practitioners, and Physician Assistants. Population Studied: Eligible participants are providers who have not received a DATA-waiver to prescribe buprenorphine or those that have a waiver but have treated fewer than 30 patients within six months of enrollment. Intervention/Instrument: A 12-session curriculum designed to provide education, support and consultation focusing on key areas to help start, expand and sustain MAT for OUD in rural primary care. It includes details on prescribing, psychosocial treatment, recovery support, and clinic functioning. In addition, if the provider does not achieve study benchmarks every three months support is provided outside of the ECHO and documented. Outcome Measures: Primary outcome measures are the following implementation benchmarks: 1) obtaining DATA 2000 waiver, 2) obtaining license X number, 3) prescribing buprenorphine to first patient, 4) adding additional patients onto provider's buprenorphine panel. Outcomes to be reported: Current results from inferential analyses demonstrate a trend toward a positive relationship between participation in the ECHO and expansion of MOUD treatment. To date, thirty-eight clinics have enrolled into the study, and 29 have provided follow-up data for at least one time point. Approximately two-thirds (65%) have accomplished at least one of the benchmarks toward expanding MAT, and nearly half (48%) have started prescribing buprenorphine to more than one patient.

Keywords: ECHO, Buprenorphine, Primary Care

Title: Exploration of Lived Psychotic Experiences Using DIPEx Methodology

Presenter: Megan Shedd, MD

Time of Presentation: 3:40 - 3:50 PM

Abstract: Objective: The purpose of this presentation is to describe health experiences research which seeks to explore lived experiences of individuals with schizophrenia and schizoaffective disorder using DIPEx methodology. The rationale for health experiences research will be explicated, and there will be discussion of future directions of collected data.

Background: First-hand accounts of illness help individuals understand and visualize the experience of illness, including how it may affect their own lives. This allows individuals to feel less isolated in their illness experience by creating a sense of belonging to a larger community. Exposure to others' stories of illness can provide patients with the vocabulary to construct their illness-narrative, which can be therapeutic and promote recovery. Moreover, personal stories help individuals to identify their healthcare preferences, impacting utilization of healthcare, healthcare decision-making, and identification of the components of high-quality care. Given that personal narratives will likely remain a key feature in this information era, it is important to offer reliable, safe sources of patient narratives that go beyond individual anecdotal accounts. Health experiences research is an avenue to meet this growing need. Health experiences research data can be utilized in materials that impart accurate, useful information about experiences of specific health conditions to the public, patients, caregivers, and clinicians.

DIPEx Methodology: This research follows the Database of Individual Patient Experiences (DIPEx) methodology, which is a rigorous method of qualitative research and public dissemination of patient-centered health experiences. The methodology utilizes a systematic, community-engaged approach that strives to engage participants deeply, represent diverse perspectives, respect patient expertise of their own experience, and analyze themes with rigor. This study seeks to interview 8 to 15 participants with diagnosis of schizophrenia and schizoaffective disorder using this methodology.

Future Directions: This research will directly support the preparation of materials for a future larger grant that will extend data collection. A long-term goal is to then apply the information learned to a quality improvement intervention that improves providers' and trainees' understanding of behavioral health disparities among those with psychosis.Data from preliminary interviews will also justify further grant funding to ultimately publish the complete health-topic of psychosis on the HERN website, HealthExperiencesUSA.org. (A complete health-topic consists of a library of interview excerpts from a large national sample along with an accompanying text that depicts scientifically grounded health information).By providing a library of online patient interviews that have been selected for diversity and depth of experiences and that have been controlled for accuracy of health-related information, patients who experience psychosis, their family members, and their caregivers can visit a reliable website to find content that not only resonates with their personal experiences, but also allows them to reframe their understanding of psychotic illness, find sources of online support, and improve their mental health literacy to be more engaged shared health-decision making. Furthermore, interview excerpts can be utilized in medical education to promote interest in psychiatry, destigmatize individuals with psychotic experiences, and improve empathy of clinical trainees working with individuals with serious mental illness.

Keywords: Psychosis, Qualitative Research, Lived Experiences