

# Ohio State News

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## **Opioid Innovation Fund**

In 2017, Ohio State announced a commitment of more than \$1 million to the Opioid Innovation Fund to advance understanding of the crisis and inspire new, multidisciplinary partnerships that address the epidemic. Opioid Innovation Fund grants will bring together multiple resources to develop initiatives that reduce the burden of the opioid crisis.

### **1. Franklin County Opioid Crisis Activity Levels (FOCAL) Map**

**Grant amount:** \$96,762

**Authors:**

- Harvey Miller, Team Lead
- Ayaz Hyder
- Lauren Southerland

**Abstract:**

Franklin County residents affected by opiate addiction/dependence urgently need resources for recovery and treatment. Our pilot research has identified areas of high overdose rates with no or limited access to recovery centers, which we term recovery deserts. The goal of this proposal is to build on this work and implement a system to collate, track, and map, on a daily basis, data on opiate overdoses from the 22 EMS organizations in Franklin County. This will be done in partnership with the Central Ohio Trauma System (COTS), which currently manages a trauma data registry for all Franklin County hospitals, which includes EMS trauma data submitted by the hospitals as required by the Ohio Department of Public Safety. This proposal will achieve two goals: 1) improve access to real time data for Ohio State and community partners, which will allow us to determine the impact of any planned interventions and 2) work with community partners in Columbus Public Health and treatment providers to plan further outreach to those in recovery desert areas.

### **2. Hospital and Community Integrated Medication Assisted Treatment (I-MAT)**

**Grant amount:** \$100,000

**Authors:**

- Julie Teater, Principal Investigator
- Emily Kauffman, Co- Principal Investigator
- Kathy Lancaster, evaluator
- Michael Dick, Project Champion
- Eileen Ryan, Project Champion
- William Hayes, Proposal Assistant

**Abstract:**

Opiate use disorder (OUD) frequently presents in general medical settings, such as emergency departments and hospital wards, where standard care involves either referral only or screening, brief intervention, and referral for treatment (SBIRT). Unfortunately, SBIRT has significant limitations with this population, and most OUD patients referred to specialty addiction services receive no care or

inadequate care. Recent research suggests that initiation of Medication Assisted Treatment (MAT) for OUD within the emergency department, with immediate connection to community-based MAT, increases the percentage of OUD patients who receive ongoing treatment, reduces subsequent illicit opioid use, and decreases the need for inpatient addiction treatment. Based on this research, The Ohio State University Wexner Medical Center (OSUWMC), in partnership with The Alcohol, Drug Addiction and Mental Health Board of Franklin County (ADAMH-FC) and the Franklin County Opiate Action Plan Central Steering Committee, proposes the Hospital and Community Integrated Medication Assisted Treatment Initiative (I-MAT). Under I-MAT, OSUWMC will pilot the initiation of MAT first within the emergency department at OSU East and then followed by an inpatient setting, with an immediate connection of the patient with ongoing community-based MAT services to at least Maryhaven, Southeast, Community for New Direction and Talbot Hall. I-MAT builds from OSUWMC's existing experience in providing inpatient MAT at CALM, Talbot and Harding.

### **3. Developing a Community-Based Integrated Care Delivery Model for Opioid Use Disorder (OUD)**

**Grant amount:** \$50,000

**Author:**

- Thomas Huber, Principal Investigator

**Abstract:**

The opioid epidemic is a multifaceted crisis that requires the coordination and collaboration between front-line stakeholders in both public safety and healthcare sectors. Most current strategies center on the immediate crisis of opioid overdose and short-term survival (including expanded access to naloxone), rather than addressing the challenge of person centered care coordination. Through this strategy, people who survive an opioid overdose are still at high risk for relapse and death without access to continued care to facilitate recovery. Since patients receive acute care services for opioid overdose and/or withdrawal at various health and public sectors, many face challenges with post-overdose follow up and referral with high rates of relapse for OUD. Patients are often left to navigate a complex disjointed web of resources on their own both before and after relapse. Our overarching goal is to better understand ways to facilitate recovery for patients suffering from opioid use disorder. There is a critical need to understand how patients seeking to recover from opioid addiction understand their overdose/relapse process, describe what front-line personnel know about this population, and to identify where barriers and opportunities for enhanced coordination and care planning exist. Therefore, the specific aims for the project are: (1) Create a process map of the patient flow immediately 48 hours before and after access to acute care (emergency medical services (EMS), emergency department(ED), detoxification centers(DC), and police and fire (P/F)) for opioid overdose/withdrawal to prevent relapse and support long-term recovery. (2) Build a Community-Based Integrated Care Delivery Model for Acute Episodes and Crises that addresses gaps, barriers, and best practices surrounding overdose and relapse events.

### **4. Virtual Reality Distraction to Reduce Opioid Pain Medication Use During Adult Burn Dressing Change**

**Grant amount:** \$50,000

**Authors:**

- Henry Xiang, Principal Investigator
- John K. Bailey, Co- Principal Investigator
- Jiabin Shen, Co- Principal Investigator

**Abstract:**

Ohio is ranked No. 1 in the U.S. for opioid deaths, and statistics indicate that while the U.S. represents 5% of the world's population, U.S. citizens consume 78% of the world's oxycodone supply and 99% of manufactured hydrocodone. Research has shown that large amount of initial opioid use for acute pain management in such procedures likely leads to greater risk of chronic opioid use and addiction. The Ohio State Medical Board mandates that all pain prescriptions will need to carry the documentation which “should indicate whether there are known and available non-opiate alternatives and why it has been determined not to utilize these alternatives”. There is a pressing need to search for, and assess, non-opiate alternatives that may allow for decreased use of opioids. Virtual reality (VR) has gained increasing popularity as a potential non-pharmaceutical analgesic strategy for burn dressing change. Based on promising results of our pilot study among 59 pediatric burn patients aged 7-17 years old, we hereby propose a planning pilot study among 60 adult burn patients (18-54 years old) undergoing dressing changes at the Ohio State University Verified Burn Center to evaluate the efficacy of the VR-based Pain Alleviation Tool (VR-PAT) in reducing opioid pain medication use during adult burn dressing changes. This innovative project will likely trigger a wide adoption of affordable VR-based pain management in adult burn dressing changes and reduce the need for opioid pain medications; therefore, contribute to the Ohio and U.S. efforts in tackling the opioid epidemic.

**5. Building Recommended Practices for Working with Domestic Violence Survivors Who Use Opioids in Residential Services: A Community Engagement Approach**

**Grant amount:** \$50,000

**Authors:**

- Cecilia Mengo, Co-Principal Investigator
- Susan Yoon, Co-Principal Investigator
- Kathryn Lancaster, Co-Investigator
- Julianna Nemeth, Consultant
- The Ohio Domestic Violence Network, Community partner

**Abstract:**

The current opioid epidemic has had an enormous impact on domestic violence (DV) agencies and survivors. Ohio’s agencies serving DV survivors in a residential setting currently lack statewide guidance on better addressing the needs of survivors who struggle with opioid addiction, while also providing a safe and healing environment. Our interdisciplinary research team, in collaboration with the Ohio Domestic Violence Network (ODVN)—the federally recognized statewide coalition of Ohio’s 72 DV service providers—is proposing a needs assessment-planning project to address opioid issues in service provision. The first component of the project will entail conducting 6 focus groups with DV agencies’ staff (n=60) at a statewide summit hosted by ODVN. Information will be obtained regarding challenges DV residential programs face when working with survivors using opioids and the types of support needed to better address opioid issues in service provision. Provisions will be made in order to secure a diverse and representative sample of Ohio’s DV programs and to investigate the unique needs of agencies providing services in rural and urban settings. The second component will entail conducting phone interviews with survivors (N=150) to examine prevalence estimates of opioid use of DV survivors in shelters. Overall, findings will aid in the development of program recommendations on addressing the burden of opioid use among DV survivors accessing residential services.

## 6. Additive Value of Neurofeedback Treatment for Opioid Abuse: A Pilot Study

**Grant amount:** \$49,009.43

**Authors:**

- Justin A. Barterian, Principal Investigator
- Helena Rempala, Co-Principal Investigator

**Abstract:**

The opioid epidemic has substantially burdened families within central Ohio. The most effective medication-assisted maintenance treatments (e.g., methadone, naltrexone, and buprenorphine) still report a relapse rate of 40-60%. Neurofeedback (NF), a form of biofeedback that targets abnormal electroencephalogram (EEG) activity via operant conditioning, is a promising treatment modality that has demonstrated its effectiveness in promoting sustained recovery from substance use disorders, including alcohol, cocaine, and amphetamine addiction. Research from the last decade investigating EEG abnormalities in opioid abusing individuals indicates this population experiences substantial reduction in alpha waves, increases in low and high beta, theta, and delta activity. To date, several case studies and one randomized controlled trial (RCT) demonstrated a significant improvement in general psychological health and reduction in opioid cravings in individuals who underwent NF training in addition to medication-assisted treatment. However, limitations of these studies include predominately male samples and lack of follow-up data. The purpose of this RCT would be to examine the added value of NF to the existing medication-assisted treatment in 24 central Ohio patients. Twelve participants would receive 30 NF sessions consisting of Sensory Motor Rhythm (SMR) training followed by alpha and theta training while 12 participants would receive treatment as usual (TAU). Data regarding cravings, overall functioning, relapse, and related mental health symptoms, would be collected at baseline, immediately post-treatment, and three- and six-months post-NF training. Treatment satisfaction rating will be collected post-treatment to assess acceptability/feasibility. Results will be used to inform treatment programs and future research projects.

## 7. Reducing Trauma in Opioid-Affected Families using Human-Animal Interaction Techniques: A Feasibility Study

**Grant amount:** \$49,970

**Authors:**

- Kelly George, Lead Principal Investigator
- Bridget Freisthler, Co-Investigator
- Teresa Burns, Co-Investigator
- Lucinda Miller, Co-Investigator
- Jodi Ford, Co-Investigator
- Jason Stull, Co-Investigator
- K. Cole, Co-Investigator

**Abstract:**

Childhood trauma is both caused by and a risk factor for substance use. In Ohio, children who have experienced trauma in the form of child abuse and neglect due to parental opioid use are at risk for a variety of long-term physical and mental problems. The opioid crisis in Ohio has resulted in more children being abused and neglected, which results in them spending more time in out-of-home care (e.g., foster care). We propose to conduct a feasibility study of a human-animal assisted intervention where trained, experienced therapy canines are present during mandated parent-child visits for opioid

misusing parents in the child welfare system. We will conduct a delayed intervention design study with two groups of 8—10 families where six weeks of treatment as usual is followed by six weeks of visits with a certified canine therapy team (consisting of a therapy canine and handler). We will assess psychosocial and stress biomarker measures to assess whether incorporation of a certified canine therapy team results in reductions of trauma symptoms and measures of stress in the child and foster caregiver and if involvement in these visits alters stress biomarkers in participating canines. The short-term goal of this study is to develop procedures for integrating animals into mandated family visits for children involved with the child welfare system. The long-term goal is to develop a new intervention approach that will increase the likelihood of reunification while reducing trauma for children who have been abused or neglected.

## **8. Development of a Community and Social Network-Based Campaign to Reduce Opioid-Related Stigma and Overdose**

**Grant amount:** \$45,541.50

### **Authors:**

- JaNelle Ricks, Co-Principal Investigator,
- Kathryn Lancaster, Co- Principal Investigator,
- Jose Rodriguez
- Beth NeCamp
- Joel Diaz
- Sandra Harbrecht

### **Abstract:**

Ohio currently leads the country in opioid-related overdose deaths. The objective of this project is to develop a bold and clear structural and social network-based opioid overdose reversal campaign within Central Ohio. This campaign will educate people who inject drugs (PWID), their friends and family, and broader community about the opioid overdose reversal medication naloxone, how to recognize and respond to an overdose, and how to access medical and community-based training and other resources. To develop this campaign, we will a) engage the services of a professional marketing firm, and b) engage the partnership of Equitas Health and other local medical centers, local TV affiliates NBC 4 and ABC 6, grassroots advocacy groups such as The Addict's Parents United, and peer group leaders from diverse Central Ohio communities. Specifically, we will use a mixed methods approach to: 1) examine structural and social level barriers, facilitators, and attitudes towards opioid overdose and reversal; 2) develop message content, characteristics, and media delivery channels for an opioid overdose reversal campaign; and 3) pilot a peer group leader (PGL)-delivered social network-based strategy to promote opioid reversal medication. Upon completion of this planning project, we will have designed and piloted a structural and social network-based overdose reversal campaign that can be expanded to include harm reduction messaging and rigorously evaluated to determine the effectiveness on opioid related overdose and other co-morbidities within central Ohio.