I. TECHNICAL PROPOSAL (8 pages)

A. STATEMENT OF NEED

South Carolina (SC) is currently grappling with the deadliest drug epidemic in the nation's history. In 2020, more than 134,000 SC residents engaged in misuse of opioids,[1] an estimated 54,000 of whom have an opioid use disorder (OUD) that requires treatment.[2] Drug-related overdose mortality increased more than tenfold between 1999 and 2020, from a rate of 3.7 to 34.9 deaths per 100,000 state residents[3] – a change largely driven by the dramatic increase in opioid-related overdose. Despite widespread efforts to address the epidemic, mortality continues to rise, exacerbated by the emergence of fentanyl in the illicit drug supply. SC's overdose death rate rose by more than 59% in the 12 months after March 2020 – the fourth largest increase among all American states.[4] The ongoing crisis resulted in the loss of over 2,000 state residents in 2022 alone.[5] This profound loss of human life has had a devastating impact on SC families and communities. Decades of evidence show that treatment, including medication treatment of OUD, reduces the risk of relapse, overdose, and death.[6] Effective OUD treatment encompasses a broad range of services, including outpatient treatment, intensive outpatient treatment, residential care, and inpatient hospitalization, and three medications approved by the U.S. Food and Drug Administration – methadone, buprenorphine, and extended-release naltrexone.[7] Yet, clinically recommended treatment remains difficult to obtain. Remarkably, most Americans with OUD do not receive any treatment for their condition. In 2021, only one-quarter of Americans with an OUD secured treatment.[8] Among patients who receive medication, few are retained in treatment for a meaningful period of time, with more than half dropping out in under six months.[9]

As a largely rural state with a poverty rate (14.6%) well above the national average,[10] treatment for OUD in SC can be difficult to access: only about 13,000 of the 54,000 state residents with an active OUD received any treatment in the past year.[1] Put differently, three out of every four SC residents in need of treatment did not receive it. This unacceptably low rate of treatment for any health condition represents a profound threat to public health and safety, with an enormously high risk of overdose-related mortality among individuals with untreated OUD. Research shows that untreated OUD doubles the increase of death by any cause.[11] Furthermore, overdose remains the leading cause of death among SC's young people. For over a decade, unintentional drug poisoning has taken the lives of more individuals from SC under the age of 45 than any other cause.[12]

Targeted, coordinated action at the state level is urgently needed to spur the dramatic expansion in access to treatment required to prevent more deaths, particularly expanded efforts in three areas. First, the state needs specialized technical assistance to healthcare and social service providers delivered by experts in the field who can assist them with implementing high-quality, evidence-based interventions. It is anticipated that over $400 million in opioid abatement funds will be distributed to SC counties and municipalities over the next 18 years. This is an enormous investment and has the potential to make a massive impact on SC's capacity to curb the opioid epidemic. However, it is essential that every dollar be used efficiently to maximize impact. Achieving this goal represents a significant challenge, given that many municipal and county leaders do not have extensive experience in best practices for clinical treatment of OUD, and they may need expert guidance to select the OUD abatement strategies that will best the fit their communities and technical assistance to implement programs successfully. Second, there is a critical need for expanded education and training in OUD treatment for physicians and other healthcare providers. Currently, the vast majority do not screen for or treat addiction – a major barrier to expanding access to care. In addition, effective education and stigma-reduction efforts for the general public need to be expanded. While SC's Department of Alcohol and Other Drug

Abuse Services (DAODAS) and Department of Health and Environmental Control (DHEC) have long served as trusted resources for training and technical assistance (TA), the extent of the need spurred by the opioid settlement agreements goes beyond what either agency can manage alone with existing resources. Hence, there is a critical need to bring together the expertise of government leaders and the largest academic institutions in the state to build out programming for TA to leaders in local government, health care, and the social service sector to equip them with the resources, strategies, and information they need to make the most of this historic investment in our state.

Finally, there is a need to develop sophisticated information systems to enable leaders to measure the state's performance in meeting key indicators of success in identifying and treating OUD – both to inform training and TA efforts and assess the effectiveness of strategic public investments to address the opioid epidemic. To ensure that resources are deployed as efficiently as possible, we must first understand how the state is performing in identifying, treating, and retaining individuals with OUD. Such information is needed to inform effective intervention design, improve access to treatment, and effectively target assistance to regions of the state that are struggling. Health system performance data can also serve as a crucial baseline to allow the state to gauge the success of major public investments to address the opioid epidemic. Currently, this information is unavailable. While we have data on opioid overdoses and mortality, little is known about how our systems are performing in addressing these challenges by engaging OUD patients in treatment and providing adequate support. Without this information, it is not possible to assess the real-world impact of the investments in prevention and treatment.

To achieve these goals, it is necessary to bring together the state's leading public institutions. DAODAS and DHEC have led the way in responding to the state's opioid crisis, directing key efforts to expand OUD treatment. However, more can be accomplished through collaborative action that combines the expertise among these key state agencies and the state's leading research universities: Clemson University, the Medical University of South Carolina (MUSC), and the University of South Carolina (USC). As described in detail in the Qualifications and Experience section, all three universities are home to national leaders in OUD treatment and possess extensive experience in successfully implementing large-scale research, training, and TA programs to address the opioid epidemic. Furthermore, the numerous collaborations that exist across these institutions to address the opioid epidemic *(See Appendix A)* attest to the track record of successful partnership that would be accelerated by establishment of a specialized center of excellence tailored to the specific needs of our state. In this application to the SC Opioid Recovery Fund (SCORF), we propose to leverage and enhance existing inter-institutional collaborations and expertise through development of the SC Center of Excellence (COE) in Addiction. The overarching mission of the SC COE is to systematically prevent OUD and improve health outcomes for state residents with OUD by developing and supporting evidence-based strategies, data-driven solutions, and targeted responses to the evolving opioid addiction crisis. We will achieve this mission guided by the work of five major cores, which are described in greater detail in the Implementation Plan below:

1. An *Administrative Core*, which will provide cross-institutional leadership and oversight for the COE as a unified entity involving DAODAS, DHEC, USC, MUSC, and Clemson.
2. A *Training Core*, which will leverage and expand successful statewide education and training in evidence-based OUD prevention and treatment to maximize spread of best practices as counties and municipalities engage in Approved Abatement Strategies.

3. A *Technical Assistance (TA) Core*, which will leverage and expand successful statewide TA initiatives and support successful, sustainable, and evidence-based implementation projects within the Approved Abatement Strategies.
4. A *Data Analytics Core*, which will use statewide data from SC's Integrated Data System to augment stakeholder needs assessments and inform timely, targeted, and data-driven clinical, educational, programmatic, and policy interventions.
5. An *Implementation Core*, which will leverage the broad state-academic collaboration created by the COE to efficiently develop and replicate successful implementation projects using innovative approaches to reach unserved and underserved areas of the state.

SCORF is uniquely positioned to foster early development of this historic initiative. Each of the institutions participating in the COE have extensive experience in successfully obtaining and managing large awards from major federal funding agencies *(See Qualifications and Experience for details)*. However, the proposed COE, while of great value to SC, falls outside of the priorities of these funders, which typically fund time-limited projects and not the development of state-level infrastructure required to address the root challenges over the long term. Hence, funding from the SCORF is among the only potential sources of financial support for the mission envisioned by our team, which is solely focused on developing long-term infrastructure and collaboration to reduce OUD and related harms in SC. While the COE will pursue support from other sources and intends to leverage existing resources at each participating institution, targeted support from SCORF to support the development of the COE is vital to its seeding and growth.

B. IMPLEMENTATION PLAN
1. Administrative Core
A critical task in the first year will be to establish the infrastructure to support and facilitate communication and collaborations across the entities that form the COE. An Administrative Core, consisting of a Program Manager (PM), Program Evaluator (PE, part-time), and leadership representatives from each of the entities involved, will provide the organizational framework to address programmatic issues, collaborative integration, operations, budget management, and emerging issues. The PM will serve as the single point of contact for communications, scheduling, and oversight of daily operations. The PE will be responsible for collecting the evaluation data and collating it for a quarterly report to a COE Advisory Board and SCORF Board. The academic leadership and other agency representatives will form a Leadership Team, responsible for representation and coordination of activities within their respective institutions, bringing in the appropriate expertise for specific projects. This group will meet weekly with the PM to prioritize initiatives, problem-solve, troubleshoot, and track progress.

A Steering Committee will be formed, expanding representation and expertise. This group will meet at least monthly for strategic planning, decisions on specific projects, future initiatives, and monitoring of progress. At the beginning of the funding period, this group will have a two-day retreat to solidify plans and priorities for Year 1, decide on specific project metrics, and develop a five-year strategic plan for COE development. *(See Appendix B for organizational chart and brief descriptions of each of the members of the Steering Committee.)* An Advisory Board consisting of representation from the State Legislature, SC Department of Health and Human Services (DHHS), other funding agencies, local service providers and stakeholders, people with lived addiction experience, and experts in various aspects of OUD treatment and recovery will convene quarterly to review and advise on COE initiatives. Our COE will be supported and sustained through stakeholder meetings, quarterly newsletters highlighting overall progress, daily

WhatsApp community networking, and an annual conference in collaboration with the SC Governor's Opioid Summit.

In Year 1, we will also develop a robust and interactive website to provide information to the public and stakeholders about TA and training activities, along with guidance and educational resources. The site will allow for feedback and questions and link individuals to a "warm-line" platform through which questions will be directed to an individual with the appropriate expertise to address their issues. It will also house state and county reports on the aggregate analyzed data related to SUD prevalence and outcomes. One aspect of the website will serve COE internal communications, including meeting schedules, progress reports, and protocols/initiatives under development. DAODAS will serve as the principal agency for receiving and administering COE funding and will contract with the other entities for their scope of work under the COE's budget. The SC Department of Administration will develop the COE website, and DHEC will manage site content. Lastly, to understand the needs of cities, counties, and organizations working to address the opioid epidemic, the Administrative Core will conduct a statewide assessment to inform development of the education, training, and TA offered by the COE. A survey of stakeholders will be conducted regarding need for and interest in assistance with activities such as data collection and analysis, planning, resource readiness or capacity building, and implementation of evidence-based strategies to address and prevent addiction. Listening sessions and individual interviews will inform the scope and style of learning opportunities, resources, and TA services offered by the COE. All of the infrastructure-building activities fall under the Leadership, Planning, and Coordination abatement strategy.

The Year 1 Goal of the Administrative Core is to establish administrative infrastructure, including staff hiring, committee formation, and planning and promotional materials as described above, by December 31, 2023. The specific objectives under this goal include:

- By June 2023, DAODAS will hire a Program Manager
- By June 2023, DHEC will assign a Program Evaluator.
- By June 2023, the Center of Excellence website will be live.
- By June 2023, the Leadership Team will begin weekly meetings.
- By July 2023, the Steering Committee will engage in a two-day strategic planning retreat.
- By August 2023, a survey of local leaders and stakeholders will be conducted.
- By August 2023, the Advisory Board for the Center will be established.
- By December 2023, a five-year Strategic Plan will be developed.

2. Training Core

To maximize implementation of best practices in program service and delivery initiatives within the Approved Abatement Strategies, the Training Core of the COE will expand and synergize successful statewide Approved Abatement Strategy-specific training in evidence-based OUD treatment. Led by Dr. Kathleen Brady of MUSC, members of the Training Core have been conducting monthly virtual case-based trainings for practitioners and peers working with individuals with OUD. These monthly sessions use the ECHO model and are extremely interactive, with didactics followed by a case presentation by a participant, then lively discussion *(See Appendix C)*. Project ECHO is a globally recognized model for bringing best practices to underserved areas that enables partnerships between content experts and front-line providers and organizations in underserved areas to deliver complex specialty care to patients. In collaboration with DAODAS and others, MUSC has launched two successful ECHO projects to date. The cooperative design of Project ECHO tele-mentoring/education is "all teach and all learn," and this model has led to excellent uptake in these platforms.

In collaboration with the TA and Data Analytics cores, and drawing from the needs assessment, the Training Core will create a specific curriculum for a new ECHO specifically targeting organizations applying for or that have obtained opioid abatement funds. These sessions will cover each abatement strategy in detail, with examples of successful initiatives. Officials from all counties and municipalities in the state will be invited. Individuals who have implemented successful initiatives will be asked to discuss/describe their programs. The sessions will be modeled after other successful tele-mentoring platforms: one-hour group sessions on Zoom with 30 minutes focused on specific questions/cases and 30 minutes for a brief didactic on a high-value, pragmatic, learner-driven topic, focused within the Approved Abatement Strategies. The new training and education initiatives within the COE will be cross-promoted using the existing website in the SC Center for Telehealth and linked to the COE website to optimize successful uptake.

The Year 1 Goal of the Training Core is to develop and implement a needs assessment-informed, learner-driven OUD training curriculum geared toward local leaders and stakeholders and focused within the Approved Abatement Strategies. The specific objectives are:

- By August 2023, a learner-driven curriculum will be developed based on results of the needs assessment of local leaders and stakeholders.
- By September 2023, Program Coordinator will be hired.
- By November 2023, tele-mentoring sessions will begin.
- By November 2023, evaluation of educational program outcomes will begin.

3. **Technical Assistance Core**

Technical assistance (TA) is a process, similar to consulting, that provides targeted support to an organization with a need or problem. It is an effective method for building organizational capacity and developing sustainable programs. In close collaboration with the Training Core, the TA Core, led by Dr. Alain Litwin of Clemson, will offer robust, real-time, and pragmatic TA and clinical expertise to organizations and agencies, including healthcare providers, health systems, OUD treatment providers, law enforcement and criminal justice settings, schools, and community and faith-based organizations. TA will also be delivered through a warm-line app system to offer on-demand answers to a variety of OUD clinical and implementation questions. Providers will submit a request via the app, which will get routed based on urgent vs. non-urgent inquiries. Clinical questions will be routed to an on-call nurse practitioner who will forward more complicated questions to on-call clinical experts as needed. Implementation questions will be routed to appropriate experts at Clemson, USC, and MUSC. The TA team will also provide data support for individual programs and counties in the following ways: 1) collaborative development of key metrics for each core strategy; 2) use of a COE standardized REDCap database; 3) individualized training on best practices for data collection and data entry; 4) reports and dashboards to display key metrics for local program and individual county planning; and 5) analysis of data for individual programs (and across counties, regions, and statewide as needed) to assist with communication, implementation, and dissemination efforts.

The Year 1 Goal for the Technical Assistance Core is to design and implement statewide technical assistance to include a "warm line," clinical consultation, and organizational implementation to support local efforts within the Approved Abatement Strategies by April 30, 2024. The specific objectives under this goal include:

- By August 2023, hire a TA Program Manager to implement the "warm-line" platform.
- By October 2023, "warm-line" platform will be launched.
- By October 2023, begin providing clinical, real-time clinical consultations.
- By November 2023, TA program will be launched/

- By November 2023, initial data consultation will be completed.
- By March 2024, initial reports and dashboards will be provided.

Together, the TA and Training cores aim to: 1) decrease stigma through expansion of peer recovery services and training key ambassadors and leaders within all SC rural communities on state-of-the-art evidence-based practices; 2) clarify prevailing misperceptions regarding key federal and state laws and policies impeding widespread implementation of evidence-based practices (e.g., implementation of community distribution of naloxone by health systems, community-based organizations, and law enforcement; ability to use MOUD in emergency departments and hospitals; and telemedicine regulations); 3) provide toolkit of policies, clinical protocols, billing optimization, and patient-flow algorithms for diverse clinical environments including primary care, mobile units, jails/prisons, community paramedics, emergency departments, inpatient settings, and the community; 4) provide mentoring for leading diverse community and healthcare stakeholders toward shared vision and specific goals; 5) develop outreach to specific marginalized rural populations (e.g., marginally housed, LGBTQ, correctional populations, underrepresented minorities); and 6) build sustainable local and statewide prevention and recovery ecosystems and networks of learning.

4. **Data Analytics Core**

To achieve this goal, we propose the creation of a statewide OUD Treatment Performance Measurement System (OTPMS) to measure healthcare system performance in identifying individuals with OUD and successfully engaging and retaining them in treatment. Led by Dr. Christina Andrews at USC, OTPMS will be based on the Opioid Cascade of Care, a national model for measurement of OUD treatment system performance that has been endorsed by the National Institutes of Health and the Centers for Disease Control and Prevention. This model includes four key domains of health system measurement that will be assessed using OTPMS: identification of patients with OUD; engagement in treatment; initiation of medication for OUD; and recovery and retention in treatment for clinically meaningful periods of time (at least six months).

The Medicaid population is crucially important because it is large and has an OUD prevalence rate 50% higher than the general population. We have access to comprehensive, high-quality data for Medicaid enrollees that will allow us to measure with a high precision each metric along the Cascade. We will produce estimates of the proportion of SC Medicaid enrollees with OUD who have been diagnosed; engaged in treatment; received OUD medication; and been retained in treatment for a clinically meaningful time. We will measure progression through the Cascade using measures including the Healthcare Effectiveness Data and Information Set, which have undergone extensive testing using real-world data.

These efforts will also lay the groundwork for expansion of the OTPMS to other key populations, including the uninsured and privately insured. Thus, our efforts will not only produce data with immediate policy relevance for Medicaid, but will also allow us to take an important first step toward expanding the system statewide over the long term. OTPMS data will also be distributed to counties throughout the state, enabling not just the COE, but also local communities, to use these data to identify urgent and high-yield priorities.

The Year 1 Goal of the Data Analytics Core is to produce state, region, and county-level estimates of healthcare system performance in diagnosing, treating, and retaining state residents with OUD by April 30, 2024. The specific objectives under this goal include:

- By August 2023, create coding algorithms to measure OUD diagnosis and treatment.
- By August 2023, link Medicaid claims files and prepare them for analysis.
- By November 2023, produce state and regional estimates of healthcare system performance.

- By January 2024, complete state and regional profiles of system performance.
- By February 2024, produce county-level estimates.
- By April 2024, complete county-level profiles of healthcare system performance.

5. Implementation Core

   There is a rich history of collaboration between DAODAS, DHEC, and the academic centers in SC in conducting demonstration projects to explore innovative approaches to prevention, service delivery, and treatment *(See Appendix A)*. One of the most successful is the emergency department (ED) initiative through which 37,826 individuals have been screened and 1,038 inducted on buprenorphine across nine EDs in SC over the past two years. This life-saving program was recently expanded to rural EDs using telehealth and includes policy and cost analysis. A future goal of the COE is to establish an Implementation Core utilizing the broad state-academic collaboration created by the COE to efficiently develop and replicate successful implementation projects using innovative approaches to reach unserved and underserved areas of SC. The general plan will be to issue requests for applications that will be initially reviewed by the Steering Committee, which will make recommendations to the Advisory Board for funding approval. The Implementation Core will begin in Year 2, when the administrative structure becomes more mature and the Steering Committee and Advisory Board are assembled and have developed a cadence and working relationships. As this proposal includes only a one-year plan for funding, there are no goals or objectives described for the Implementation Core in Year 1.

C. PERFORMANCE MEASUREMENT PLAN

   As can be seen above, each of the core components has specific objectives with assigned deadline dates. To evaluate the work of the Administrative Core and the other three programmatic cores, the Program Evaluator (PE) will track progress for each objective and assemble a quarterly report to be reviewed by the COE Advisory Board and the SCORF Board. In addition to the specific objectives detailed above, performance measurement for the <u>Training Core</u> will entail collecting attendance numbers and surveys from participants evaluating outcomes of perceived benefit and intended practice changes in their approach to the Abatement Strategy resulting for each session. Performance measurement for the <u>TA Core</u> will include ongoing data collection and monitoring of the total number TA consultations completed; the number of TA consultations completed across different categories of assistance; the total number of clinical consultations; the total number of consultations relating to each of the Approved Abatement Strategies; the total number of unique organizational entities assisted; and the total number of unique counties assisted. Any participants in mentoring with either the TA or Training core will also receive a survey on benefits and intended practice changes. All participants will be invited to participate voluntarily in additional reimbursed before/after mixed-methods surveys evaluating stigma, knowledge and beliefs about MOUD, and confidence/intention of implementing evidence-based practice. Performance measurement for the <u>Data Analytics Core</u> will entail weekly meetings of the Data Analytics team to ensure that the Core is progressing toward key objectives and milestones outlined in the grant proposal. Moreover, the completed state, regional, and county-level reports of healthcare performance along the Cascade represent the final deliverables for this goal and provide proof of completion of all key objectives.

D. PROJECT TIMELINE

Major Deliverables	Month (5/1/23-4/30/24)											
	1	2	3	4	5	6	7	8	9	10	11	12
Website launched		X										
ECHO trainings launched				X								
"Warm line" launched						X						
Clinical consultations launched						X						
Telementoring program launched							X					
Organizational TA launched							X					
State and regional performance profiles completed								X				
Five-year strategic plan drafted								X				
County-level performance profiles completed												X

E. PARTNERSHIP AND LEADERSHIP PLAN

The COE will formally bring together the efforts of two state agencies and three universities. As described above, a Program Manager, housed within DAODAS, will manage daily operations and communications. A Leadership Team, consisting of one representative from each participating entity (Andrews, Brady, Goldsby, Litwin, Simmer), will meet weekly for project oversight and management, with Ms. Goldsby directing the administrative and financial offices, Dr. Andrews directing the Data Core, Dr. Brady directing the Training Core, and Dr. Litwin directing the Technical Assistance Core. If there are disagreements, we will strive to reach consensus. If consensus cannot be reached, the Leadership Team will vote on a decision. The Steering Committee will meet monthly and the Advisory Board quarterly to give input to the Leadership Team, and any controversial issues will be brought to these groups for discussion.

F. POTENTIAL BARRIERS AND PLAN TO OVERCOME

There are several potential barriers to the success of this project. First, we anticipate that building relationships with municipality leaders may take work, given the great demands on their time. Meaningful engagement with these leaders is essential for success. However, our team has extensive experience in community outreach and will build on existing relationships among COE entities to build new inroads to establish rapport. Moreover, DHEC plans to hire a new staff person using existing agency funds to serve as a county and municipal government liaison who will assist with the development of such ties between state government, universities, and local leaders. Second, ensuring effective communication and coordination across several large institutions can be an early challenge. However, our Leadership Plan, which includes a Leadership Team, Steering Committee, and full-time Program Manager to ensure coordination, provides confidence that this initiative will be successful. Finally, access to administrative data is a common challenge. However, we have secured a letter of support from SC DHHS demonstrating their commitment to providing use of these data for the proposed project *(See Appendix C)*. Our leadership Team includes a host of proven leaders who have decades of experience in medicine and public health and a track record of implementing complex programs under challenging real-world conditions.

G. CONCLUSIONS / FUTURE PLANS

The COE will directly address key strategies found in *SC's Guide to Approved Uses for Investing Opioid Settlement Funds*. Many of the initiatives described above and in Appendix A were enabled by state funds dedicated to addressing the opioid epidemic, allowing a new level of statewide outreach and bringing together a diverse group of individuals with a variety of skill sets to create new collaborations and find innovative solutions.

All references can be found in Appendix D.

II. QUALIFICATIONS AND EXPERIENCE (4 pages)

Overview/Existing Collaborations: The SC COE will formally bring together the efforts of two state agencies and three academic institutions: DAODAS, DHEC, Clemson, MUSC, and USC. Individuals involved in this proposal have successfully collaborated on multiple initiatives targeting the South Carolina opioid epidemic. DAODAS has engaged in substantial collaboration with academic centers and other partners to explore innovative treatments and enhance training initiatives. DHEC has also supported demonstration projects to address the opioid epidemic. See Appendix A for a listing and brief description of collaborative projects.

DAODAS is a cabinet-level agency reporting directly to the Governor and advising the executive branch, General Assembly, and other state agencies regarding SUD issues. DAODAS contracts with the state's county alcohol and drug abuse authorities, opioid treatment programs, hospitals, recovery community organizations, and faith-based and housing organizations and other state agencies to ensure prevention, intervention, treatment, and recovery services are available statewide, supporting systematic and continuous quality improvement. The department is the Single State Authority for the Substance Abuse Prevention and Treatment Block Grant (SABG) administered by the federal Substance Abuse and Mental Health Services Administration and also funds programs and services through state funds and federal grants. DAODAS collects and reports data on services and programs supported by the SABG and other grants as well as performance and outcome data to help demonstrate the positive impact of statewide services on reducing alcohol and other drug use; employment; criminal justice involvement; and other areas. The Project Manager and Evaluator for the COE will be housed in DAODAS in Columbia, SC.

DHEC has been working to mitigate the impact of OUD and opioid overdose on the people of South Carolina for many years. The efforts of the agency's Public Health division include providing education about OUD and overdose prevention in health departments located in every county. In addition, these local health departments distribute overdose prevention kits at no charge that include naloxone, fentanyl test strips, and information on use to prevent overdose and save lives. DHEC also creates educational materials and campaigns about the risks of OUD and overdose.

The **Clemson University** Center for Addiction and Mental Health Research (CUAMHR) is co-directed by Drs. Alain Litwin and Heidi Zinzow. With more than $20,000,000 in funding from federal, state, and local agencies and industry, Clemson's OUD-related expertise involves over 30 faculty members. Projects include developing and evaluating innovative models of SUD care and integrated mental health, medical, and SUD treatment; leveraging virtual platforms; using big data to investigate utilization and optimize resource allocation for overdose prevention; providing technical assistance; and evaluating OUD programs that target the criminal justice system and rural community-based models of medication delivery for OUD care.

MUSC has a distinguished record of interdisciplinary research and training focused on SUDs and has been ranked in the top 10 institutions in the nation in terms of research funding and training initiatives addressing SUDs for the past 20 years. The Departments of Psychiatry and Neuroscience house over 60 faculty with a primary focus on SUDs and several major research and training initiatives that include faculty from over 15 departments and more than $60 million in extramural funding from federal agencies, foundations, state, and industry. Dr. Kathleen Brady leads a regional research and training center for the NIDA-funded Clinical Trials Network that has

been funded since 2000 to conduct clinical trials of efficacious treatments for addictions in front-line treatment settings in collaboration with DAODAS and local providers statewide. MUSC's Center for Opioid and Cocaine Addiction is a NIDA-funded interdisciplinary research center focused on identifying novel treatments, and the Alcohol Research Center is an interdisciplinary translational center focused on treatment research in alcoholism. MUSC also has numerous NIH-funded addictions-focused research training and career development programs involving interdisciplinary cross-campus collaborations. The COE will leverage these programs through sharing resources, didactic and clinical research training components, and collaborative opportunities. The MUSC research centers provide a rich flow of evidence-based innovative treatment and prevention approaches that can be implemented by the COE to improve care statewide.

USC brings extensive expertise in analyzing large-scale observational data to track healthcare system performance and outcomes. USC's Big Data Health Sciences Center (BDHSC) brings together over 50 faculty and staff from nine colleges and 20 departments on campus, with the support of $25 million in federal research funding. The BDHSC has several ongoing studies specifically focused on using South Carolina healthcare systems data to examine treatment utilization, identify gaps, and develop predictive models for optimization of treatment engagement and retention for HIV care. Given high rates of addiction among the HIV population, the BDHSC has developed extensive expertise in measurement of substance use prevalence and treatment receipt, specifically with DAODAS and RFA data. Additionally, USC is home to two large NIH-funded studies specifically focused on opioid and alcohol use disorder treatment receipt and outcomes using national data from the Centers for Medicare and Medicaid Services and the Centers for Disease Control and Prevention's National Death Index.

Collectively, the collaborating entities have expertise in the following core abatement strategies: 1) Naloxone or Other FDA-Approved Drug to Reverse Opioid Overdoses; 2) Medication-Assisted Treatment Distribution and Other Opioid-Related Treatment; 3) Pregnant and Postpartum Women; 4) Expanding Treatment for Neonatal Abstinence Syndrome (NAS); 5) Expansion of Warm Handoff Programs and Recovery Services; 6) Treatment for Incarcerated Populations; 7) Prevention Programs; 8) Expanding Syringe Service Programs; and 9) Evidence-Based Data Collection and Research Analyzing the Effectiveness of the Abatement Strategies Within the State.

KEY PERSONNEL (alphabetical order)

Christina Andrews, PhD
Associate Professor, University of South Carolina (USC)
Dr. Andrews is an experienced researcher whose work focuses on the impact of the organization and financing of SUD treatment on service access, with a particular focus on public insurance coverage for SUDs. She is currently Principal Investigator on two grants assessing the effects of Medicaid managed care on access to alcohol use and OUD treatment. Dr. Andrews is also a Co-Investigator on two additional NIDA-funded projects: a survey of Medicaid coverage for OUD treatment, and a study of financing for OUD treatment within the criminal justice system as part of NIDA's Justice Community Opioid Innovation Network initiative. In collaboration with DAODAS, she recently led a project assessing an alternative payment model for financing OUD treatment in the state funded by the Substance Abuse and Mental Health Services Administration. Her work has been published in scientific journals, such as the *New England Journal of Medicine*, *Health Affairs*, and the *American Journal of Public Health*. In 2016, she received the

Breakthrough Star Award, presented annually for research excellence by the USC Office of the Vice President for Research. She currently serves as Deputy Regional Editor for the Americas for *Addiction*, the leading journal in the field of addiction treatment, and was appointed to the Lancet Commission on the North American Opioid Crisis in 2020. She will coordinate COE activities on the USC campus, providing a liaison with the BDHSC, serving as the USC Representative to the Leadership Team, and serving on the COE Steering Committee.

Kathleen T. Brady, MD, PhD
Distinguished University Professor, Medical University of South Carolina (MUSC)
Director, South Carolina Clinical and Translational Research Institute
Dr. Brady is an experienced clinical and translational researcher and has been conducting scientific investigations and clinical work in the field of addictions and psychiatric disorders for over 30 years. Her research focuses on pharmacotherapy of SUDs, comorbidity of psychiatric disorders and addictions, and women's issues in addictions. She has received numerous federal research grants and has published over 400 peer-reviewed journal articles and co-edited 10 books focused on addictions. She has collaborated with South Carolina state agencies to bring innovative treatments to front-line setting throughout her career. In 2021, she won the Governor's Award for Excellence in Science for her ongoing collaborative efforts using evidence-based practices to address the opioid epidemic. She is the former Vice President for Research at MUSC and the Director of the South Carolina Clinical and Translational Research Institute, making her very familiar with leading large, collaborative, statewide and national initiatives. Dr. Brady will coordinate COE activities on the MUSC campus, serve as the MUSC Representative to the Leadership Team, and serve on the Steering Committee.

Sara Goldsby, MSW, MPH
Director, S.C. Department of Alcohol and Other Drug Abuse Services (DAODAS)
Ms. Goldsby was confirmed as Director of DAODAS by the S.C. Senate in February 2018, after being appointed Acting Director by Governor Nikki Haley in August 2016, then nominated as Director by Governor Henry McMaster in May 2017. As Director, she has led South Carolina's response to the opioid crisis and currently serves as co-chair of the State Opioid Emergency Response Team. Under her leadership, DAODAS has been instrumental in implementing many substance use prevention, intervention, treatment, and recovery strategies statewide. In 2019, Director Goldsby was recipient of the national Ramstad/Kennedy Award in recognition of her leadership and support of recovery programming. She currently serves on the U.S. Department of Health and Human Services Interdepartmental Substance Use Disorders Coordinating Committee, and on the Appalachian Regional Commission's Substance Use Advisory Council. In 2021, Ms. Goldsby was elected President of the National Association of State Alcohol and Drug Abuse Directors. Her agency will house the COE infrastructure, and Ms. Goldsby will serve on the COE Steering Committee.

Alain Harris Litwin, MD, MPH
Professor, Clemson University School of Health Research, USC School of Medicine Greenville
Executive Director, Addiction Medicine Center, Prisma Health
Vice Chair of Academics and Research, Department of Medicine, Prisma Health–Upstate
Dr. Litwin is board certified in internal medicine and addiction medicine, and has been providing medical and addiction care to people who use drugs with complex social, psychiatric, and medical needs since 2000. He serves on the State Opioid Emergency Response Team and co-leads the Prisma Health Opioid Council dedicated to eliminating opioid-related overdoses. As hepatitis C

virus (HCV) medical director at Albert Einstein College of Medicine's Division of Substance Abuse in the Bronx, he developed a comprehensive on-site HCV treatment program and peer program to improve medical care of HCV-infected people who use drugs. He expanded patient-centered models of care at community health centers serving thousands of HCV-infected people throughout the Bronx. His research has focused on developing and studying models of SUDs and on increasing access to effective medical care for all people who inject drugs. Dr. Litwin has worked with government and community organizations on efforts to expand access to both addiction and HCV treatment and has collaborated on policy statements, clinical guidelines, treatment improvement protocols, and task forces with diverse stakeholders. He is the principal investigator of the national HERO study and serves on the executive board for the International Network on Hepatitis in Substance Users. He will coordinate COE activities on the Clemson campus, serve as the Clemson Representative to the Leadership Team, and serve on the Steering Committee.

Edward Simmer, MD, MPH, DFAPA
Director, S.C. Department of Health and Environmental Control (DHEC)
Dr. Simmer was confirmed as Director of DHEC by the S.C. Board of Health and Environmental Control in February 2021. As Director, he leads the agency's response to COVID-19 and is now leading efforts to eliminate health and environmental disparities across South Carolina. His agency is responsible for the state's prescription management program, licensing for controlled substance prescribing, making naloxone available to first responders, and also providing opioid overdose kits through health departments in every county. Dr. Simmer is a board-certified adult and forensic psychiatrist and has experience leading a medication-assisted therapy clinic for those with OUD. Prior to being confirmed as DHEC Director, Dr. Simmer served for over 30 years on active duty in the U.S. Navy. In his most recent assignment, he served as the first Chief Medical Officer and Deputy Director for the TRICARE Health Plan at the Defense Health Agency in Falls Church, Va. Dr. Simmer will serve on the COE Steering Committee.

South Carolina Center of Excellence in Addiction (COE) Program Manager (PM)
To be hired and employed by the S.C. Department of Alcohol and Other Drug Abuse Services
Under the direct supervision of the DAODAS Director and the guidance of the COE Steering Committee, the PM will be responsible for overseeing all aspects of the COE as a collaborative, cross-institutional entity by developing and monitoring the budget; managing and prioritizing multiple tasks; and executing project deliverables, milestones, and required tasks on schedule along with daily administrative tasks. The PM will coordinate and lead grant-writing objectives and ensure execution of the COE's strategic plan. The ideal candidate will have a minimum of a bachelor's degree in a public service field. Preferred qualifications will include a master's degree from an accredited institution of higher education and experience in strategic communication, grant management, substance use disorders, behavioral health, or community health.

STEERING COMMITTEE MEMBERS
Descriptions/qualifications of additional members of the COE Steering Committee can be found in Appendix B.

III. BUDGET

CATEGORY	DESCRIPTION	TOTAL
CONTRACTUAL		
	Clemson University Subaward	$350,090.00
	Medical University of South Carolina Subaward	$350,000.00
	University of South Carolina Subaward	$352,050.00
	TOTAL	**$1,052,140.00**

CORE STRATEGY / APPROVED USE	BUDGET
1. Naloxone or Other FDA-Approved Drug to Reverse Opioid Overdose	$35,004.50 (3%)
2. Medications for Opioid Use Disorder (MOUD) Distribution and Other Opioid-Related Treatment	$175,022.50 (17%)
3. Pregnant and Postpartum Women	$70,009.00 (7%)
4. Expanding Treatment for Neonatal Abstinence Syndrome (NAS)	$52,509.00 (5%)
5. Expansion of Warm Hand-Off Programs and Recovery Services	$87,509.00 (8%)
6. Treatment for Incarcerated Populations	$70,013.50 (7%)
7. Prevention Programs	$52,504.50 (5%)
8. Evidence-Based Data Collection and Research Analyzing the Effectiveness of the Abatement Strategies Within the State	$509,568.00 (48%)
TOTAL	**$1,052,140.00**

IV. BUDGET NARRATIVE

CLEMSON UNIVERSITY

PERSONNEL: *Moonseong Heo, PhD* (1 cal mo) – Dr. Heo is a Biostatistician and Professor of Public Health Sciences at Clemson University (CU). Dr. Heo will oversee the technical assistance (TA) and data management aspect of the grant and supervise the Data Manager. He will also collaborate with the Big Data Core on big data-related projects and will link big data and TA-related data sources. *Lior Rennert, PhD* (1 cal mo) – Dr. Rennert is an Assistant Professor in the CU Department of Public Health Sciences. He is experienced with statistical models that evaluate the impact of programs to reduce opioid use disorder (OUD) and applying statistical models to evaluate the impact of treatment. Dr. Rennert will oversee the data metrics dashboards, reporting and analyses, collaborate with the Big Data Core on projects, and link big data and TA-related data sources. *Heidi Zinzow, PhD* (1 cal mo) – Dr. Zinzow is Professor of Psychology at CU. She will oversee and co-direct the administrative functions of the TA component. *Program Manager, To Be Hired* (12 cal mos) – The Program Manager will support all aspects of the Center of Excellence (COE) at CU. He/she will serve as the main point of contact (POC). along with Dr. Alain Litwin, and will work closely with Drs. Heo, Rennert, and Zinzow. *Data Manager, To Be Hired* (3.6 calendar months) – The Data Manager will work closely with Drs. Rennert and Heo to develop REDCap databases, collaborate with the individual sites and counties, provide TA, and work closely with the other COE team members to meet Center goals.

Fringe Benefits – CU has S.C. Department of Health and Human Services-approved fringe rates of 36% for nine-month appointments (Drs. Heo, Rennert, Zinzow) and 43% for 12-month appointments (Program and Data Managers), which include FICA, retirement, worker's comp, unemployment, health/dental insurance, long-term disability, tuition, term pay, employee assistance plan, and the employee benefits platform.

CONTRACTUAL: *Consultants* – Funds are budgeted to support TA and clinical experts who will support clinical and non-clinical implementation as well as the warm line platform. *Subaward - Prisma Health – Upstate (PHU)*: *Alain Litwin, MD* (1.2 cal mos) – Dr. Litwin is Vice Chair of Academics for the PHU Department of Medicine, Executive Director of the Prisma Health Addiction Medicine Center, and Professor with the University of South Carolina (USC) School of Medicine Greenville and CU Department of Psychology and School for Health Research. He serves as the Director of the PHU Recovery Program (office-based buprenorphine treatment program). Dr. Litwin will serve on the Leadership and Steering Committees and serve as the POC at CU. He will oversee and co-lead activities for the TA Core within the COE in collaboration with Drs. Zinzow, Heo, and Rennert. He will collaboratively hire and supervise the nurse practitioner (NP) and CU team members and will work closely with the leaders of the Education and Training Core and Big Data Core. *Nurse Practitioner* (6 cal mos) – The NP will help oversee the warm line, field calls, answer questions, and identify experts for more specialized questions. He/she will provide clinical TA for outpatient, inpatient, and mobile programs to deliver MOUD. *Fringe Benefits* – PHU applies a pooled rate of 19.68%, which includes FICA, health, life insurance, unemployment, pension, workers' comp, dental, tuition, disability, and retirement.

OTHER (PHU): *Travel* – Funds will support Dr. Litwin's travel to and from the two-day strategic planning retreat. Expenses will include lodging, mileage, and a per diem.

Administrative Costs: PHU's federally negotiated indirect cost rate is 56.4%. For this proposal, the sponsor-approved rate of 5% is applied to all direct costs in this budget.

OTHER (CU): CU's federally negotiated F&A cost rate is 52.5%. For this proposal, the sponsor-approved rate of 5% has been calculated using Modified Total Direct Costs.

MEDICAL UNIVERSITY OF SOUTH CAROLINA (MUSC)
PERSONNEL: *Kathleen Brady, MD, PhD* – MUSC representative to Leadership Team and Steering Committee. *Kelly Barth, DO* – Director of COE Educational Initiative, Co-Lead for Abatement ECHO; member of COE Steering Committee. *Karen Hartwell, MD* – Overall director and supervisor for ECHO. *Louise Haynes, MSW* – Co-Lead Abatement ECHO, COE community liaison, and COE Steering Committee member. *Program Manager for COE Educational Initiatives, To Be Hired*. *Rachel Grater* – Session moderator for ECHO. *Lauren Linder, PharmD* – Serves on the OUD ECHO Hub. *Angie Moreland, PhD* – As a clinical psychologist and a substance use disorder (SUD) researcher, Dr. Moreland will lend her expertise in program evaluation and contribute as a didactic lecturer. *Sarah Gainey, MSW* – Serves on Peers Hub and lends her expertise in peer supervision and motivational interviewing. She is the overall program manager for the emergency department (ED) buprenorphine-initiated project utilizing peers for SBIRT. *Patrick Harmon, PRSS* – Serves on the Peers Hub. Brings the perspective of working both in the ED and inpatient settings. *Suzanne Lane* – Manages data, including attendance details and results from the REDCap Surveys. Assists in reports and data for publications. *Tan Shivers* – Information technology (IT) specialist supporting Peers ECHO. *Richard Ancrum* – IT specialist supporting OUD ECHO. *Andrea Sanna* – Works as an administrator supporting the ECHO project.
CONTRACTUAL: MUSC partners with FAVOR Upstate for the Peers ECHO. Mike Malone, CPRSS, and Senior Program Manager for FAVOR Upstate, co-leads Peers ECHO. FAVOR Upstate administers CEU awards for the Peers ECHO and supports hub member training. FAVOR Upstate staff participate regularly and provide both case presentations and didactic lectures.
SUPPLIES: *Marketing and Advertising* – Now that COVID-19 restrictions are lifted, intensive marketing advertising is planned over the next year especially aimed at areas of the state with high overdose rates via booths at state medical and peers meetings, mailings, and brochures.
TRAINING: *CEU and CME Accreditation* – The Peers ECHO provides CEUs via NAADAC, and the OUD ECHO provides CMEs via MUSC's continuing medical education office. *Training Support* – Funds will be utilized for advanced ECHO training for the Project Coordinator and for hub members to enhance skills and become familiar with latest advances in the field. *Case Presentations Support* – Support for non-faculty case presenters to recognize time and effort to develop and present cases to increase diversity in the cases from a variety of settings.
OTHER: *Computer/IT Supplies* – A laptop is needed for the Project Coordinator. Other IT supplies include a docking station, headsets for new hub members, and a mobile hotspot for Dr. Hartwell so she has steady access to the internet while traveling and can join the ECHO sessions when working remotely. *Domestic Travel* – Supports hub members for conferences, outreach activities, and training to enhance hub capabilities and disseminate findings. *Publication/Printing Costs* – Will be used for publication fees, printing posters for professional meetings, and unanticipated expenses. *Administrative Costs* – The sponsored-approved 5% rate is applied to the MUSC costs.

UNIVERSITY OF SOUTH CAROLINA (USC)
PERSONNEL: *Christina Andrews, PhD* (20% effort) – Dr. Andrews is an Associate Professor at the USC Arnold School of Public Health (ASPH) with expertise in Medicaid financing of SUD treatment and will serve as Site Principal Investigator and Scientific Director. She will provide oversight of the entire research program including the development and implementation of all policies, procedures, and processes. She will be responsible for fiscal and administrative management including submitting all necessary documentation, such as quarterly progress reports. *Bankole Olatosi, PhD* (15% effort) – Dr. Olatosi is an Assistant Professor at the USC ASPH. He will oversee the appropriate operation and functioning of the project based on the research strategies specified in the proposal. Dr. Olatosi will lead efforts to work with various stakeholders in data collection, healthcare system engagement and coordination, data analyses, and dissemination. *Jiajia Zhang, PhD* (15% effort) – Dr. Zhang will serve as the lead biostatistician for the proposed project. Dr. Zhang is professor of the Department of Epidemiology and Biostatistics at USC ASPH. As data scientist, Dr. Zhang will lead the statistical and data science methods for the project. *Xiaoming Li, PhD* (5% effort) – Dr. Li is Professor and Endowed Chair of Clinical Translational Research at the USC Department of Health Promotion, Education, and Behavior and Director of the SC SmartState Center for Health Care Quality. He is also the Founding Director of the newly established USC Big Data Health Science Center. Dr. Li will contribute his expertise in data analytics and the HIV treatment cascade. **Theodoros Giannouchos, PhD** (15% effort) – Dr. Giannouchos is an Assistant Professor at the USC ASPH. He will assist with quantitative data analysis assessing factors associated with outcomes along the OUD Cascade of Care. *George Tam, PhD* (15% effort) – Dr. Tam is a Research Assistant Professor at the USC ASPH and SC SmartState Center for Health Care Quality. He will work closely with members of the Big Data Health Science Center to conduct analyses using Medicaid data. *Wendy Besmann, MPH* (20% effort) – Ms. Besmann is a Research Associate at the USC ASPH. She will be responsible for providing ongoing administrative support to the study team; preparing state-, regional- and county-level reports on OUD Cascade of Care metrics produced by the analysis team; producing quarterly reports to the SCORF Board and COE Advisory Board; and drafting a final report. *Graduate Assistants* – Three research assistants will assist with this project. One will assist with the development of OUD Cascade of Care measures and creation of algorithms to track performance along with Cascade. Two other assistants will be employed at the Big Data Health Sciences Research Center and will assist with SC Medicaid data cleaning, management, and manipulation. The students may also conduct literature reviews, create/populate table shells for data presentation and manuscript development, and co-author manuscripts and presentations. *Fringe Benefits* – Fringe benefits are calculated at the USC rate of 31.99%. Health benefits are based on current employee options and are charged on academic salary only for nine-month employees.
SUPPLIES: *Data* – Funds will purchase 2020-2021 Medicaid data from the SC Revenue & Fiscal Affairs Office. *Computer Supplies* – This includes computer/office supplies, such as data storage media, printer supplies, software upgrades, and license agreements. *Software* – two licenses each of SAS and STATA will be used to conduct data analyses and access files from other investigators.
OTHER: *Travel* – Funds will support travel to two conferences to disseminate study findings and dissemination of research findings to key stakeholders in South Carolina. *Administrative Costs* – The sponsored-approved rate of 5% is applied to the USC subaward costs.

APPENDIX A: INSTITUTIONAL COLLABORATIONS AND PARTNERSHIPS

Title: Project ECHO
Partners: DAODAS, MUSC
Description: A hub of experts in evidence-based care connects with clinicians in the field by means of a virtual platform. Sessions, held twice monthly, consist of case presentations, discussion with treatment recommendations, and lectures on a variety of topics including diversity and inclusion, medical management, ethics, and recovery support in communities.

Title: Inpatient Addiction Consult Team (I-ACT)
Partnership: DAODAS, Clemson, USC
Description: The I-ACT provides evidence-based recovery options for inpatients at Richland Hospital and Greenville Memorial Hospital. The Richland Hospital and Greenville Memorial Hospital program sites include clinicians, peer recovery coaches, and social workers.

Title: SBIRT/Buprenorphine Initiation
Partners: DAODAS, MUSC, Clemson
Description: A demonstration project of the Screening, Brief Intervention, and Referral to Treatment (SBIRT) model, this project involves initiation of medications for opioid use disorder in the emergency department (ED) when appropriate, followed by rapid referral to ongoing care. The program has been expanded to nine EDs throughout the state, including a rural ED using a telehealth platform.

Title: Inpatient Medication for Opioid Use Disorder
Partners: DAODAS, MUSC
Description: A team consisting of emergency room providers, an Addiction Recovery Specialist, and a Complex Care Case Manager provides addiction-based services to hospitalized patients at MUSC. The goal is identify patients, initiate medications for opioid use disorder (OUD) when appropriate, and link patients to substance use disorder treatment services after discharge. MUSC is also leading National Institutes of Health-funded study at a Prisma Health Systems site of buprenorphine initiation for hospitalized patients with OUD-related infectious diseases.

Title: Telehealth Services from MUSC to County Authorities
Partners: DAODAS, MUSC
Description: MUSC clinical providers have utilized telehealth resources to provide medications for opioid use disorder to individuals in several rural treatment agencies where specialized medical care is not readily available. Locations served by this project include Orangeburg, Dorchester, and Horry counties, areas with high prevalence of substance use disorders.

Title: Provider Training on MOUD
Partners: DAODAS, MUSC
Description: MUSC faculty train providers on various aspects of substance use disorders at annual conferences and individual presentations to medical practices and agencies. This program has accelerated over the course of the opioid epidemic, when MUSC faculty intensified its focus on training primary care physicians, nurse practitioners, and physician assistants on treatment protocols using medications for opioid use disorders.

Title: Clinical Trials Network
Partners: DAODAS, MUSC, USC, Clemson
Description: In the Southern Consortium Node of the National Institute of Drug Abuse (NIDA)-funded Clinical Trials Network (CTN), addiction treatment researchers, primary care networks, and treatment programs work collaboratively to develop and deliver promising treatments to patients. Many recent trials have focused on creating innovative strategies for treatment of opioid use disorder. USC's Dr. Christina Andrews serves as chair of the Policy Advisory Board for the MUSC node of the NIDA CTN.

Title: Mindfulness to Address Depression, Substance Misuse, and Physical Inactivity
Partners: Clemson, USC
Description: This project serves Greenville County residents utilizing a range of mindfulness-based stress-reduction methods. Such interventions include reflection, breathing exercises, and movement. Mindfullness-based interventions have demonstrated strong evidence of usefulness in efforts to improve mental health, reduce substance misuse, and increase physical activity.

Title: Accessing Administrative Databases to Inform Activities
Partners: MUSC, DHEC Bureau of Drug Control, Centers for Disease Control and Prevention
Description: An MUSC team partners across agencies to analyze a variety of de-identified public health surveillance data, including data from from South Carolina's prescription drug monitoring program (SCRIPTS) on all controlled substances dispensed across the state. Among other purposes, these data are used to identify "hot spots" of opiate prescribing that can trigger targeted academic detailing and training on medications for opioid use disorder.

Title: The Development and Evaluation of a Patient-Centered Opioid Discharge
**   Prescribing Guideline Within the Electronic Health Record of a Health System**
Partners: USC, Clemson
Description: This project integrates a patient-centered opioid prescribing tool (PCOPT) into the electronic health record of a regional health system. In its second stage, the study assesses the effects of the PCOPT on opioid discharge prescribing and patient outcomes.

Title: A Novel Approach for Rural Interdisciplinary Care Coordination of Uninsured
**   South Carolinians with Opioid Use Disorder and/or Co-Occurring Hepatitis-C Virus**
Partners: Clemson, USC
Description: With assistance from the S.C. Center for Rural and Primary Healthcare, this project builds on existing efforts to provide health care to underserved rural areas using mobile health clinics. The ptogram facilitates HIV screening, HIV PrEP, and point-of-care urine drug screenings for patients receiving medications for opioid use disorder.

Title: A Data-Driven Approach to Identify and Target High-Risk Rural Communities Via
**   Mobile Health Clinics**
Partners: Clemson, USC
Description: The S.C. Center for Rural and Primary Healthcare is supporting this effort to use mobile health clinics as a means of developing and implementing a modeling framework for providing treatment to underserved rural communities. The goal is to identify and prioritize

communities at greatest risk of opioid use disorder, hepatitis C virus, and human immunodeficiency virus.

Title: Project TRANSFORM
Partnership: Clemson, USC
Description: This project developed a national substance use curriculum targeting medical and nurse practitioner students and incorporating people with substance use disorders and in recovery.

Title: Expanding Best Practices Through Academic Detailing
Partners: DHEC, Clemson, MUSC, USC
Description: This project provides academic detailing services to South Carolina primary care and emergency room physicians concerning pain management, opioids, and use of the Prescription Drug Monitoring Program (PDMP). Through tailored educational outreach and ongoing technical assistance in convenient, interactive settings, healthcare providers learn to integrate best practices.

Title: Surgical Collaborative
Partners: DHEC, MUSC
Description: This project aims to identify the trajectory of chronic opioid use in Medicaid patients undergoing selected surgeries. It applies knowledge gained from examination of these trajectories to develop and deliver appropriate provider-level interventions and resource materials on opioid prescribing, patient monitoring, and care coordination in post-surgical pain management.

Title: Eliminating HCV in Rural South Carolina With Smart Phone Virtual Care Coordination Deployed in Nurse Practitioner-Led Mobile Clinics Targeting Persons Who Inject Drugs
Partners: Clemson, USC
Description: The goal of this project is to provide 100 Hepatitus C (HCV)-infected persons who inject drugs with HCV treatment via a mobile clinic as part of the Joseph F. Sullivan Center. Nurse practitioners provide HCV treatment in this academic nurse-managed health center.

Title: Project POWER – Preventing Opioid Use Disorder and Overdoses With Emerging Resources in Rural South Carolina
Partners: Clemson, USC
Description: This project aims to reduce morbidity and mortality related to substance use disorder, including opioid and alcohol use disorders, in rural communities of South Carolina by utilizing Healthcare Navigators, Nurse Practitioners, Peer Support Specialists, and community partnerships to expand access to medication for opioid use disorder (OUD) and other evidence-based interventions and treatments for people living with OUD in four counties (Abbeville, Greenwood, Laurens, Oconee).

Title: Magdalene Clinic Expansion Project – A Rural Adaptation of a Data-Informed Suburban Care Model for Pregnant Women With Substance Use Disorders in the American South
Partners: Clemson, USC
Description: The Magdalene Clinic's purpose is to provide a deeply affirming, collaborative care model for pregnant women with substance use disorders in South Carolina. Integrating services

under one roof, providers offer prenatal care, mental health counseling, and peer support for pregnant women at any stage of their disease process.

Title: Development of an Integrated Intervention Involving Recovery Coaching and Cognitive Behavioral Therapy for Opioid Use Disorder
Partners: Clemson, USC
Description: This project aims to develop and test an integrated intervention that combines web-based cognitive behavioral therapy (CBT4CBT-Buprenorphine) and recovery coaching services. The goal is to determine whether use of this intervention is associated with a reduction in illicit drug use during buprenorphine treatment and an increase in treatment program retention.

Title: Peer Intervention to Link Overdose Survivors to Treatment (PILOT)
Partners: MUSC, Clemson
Description: The goal of this study is to advance understanding and improve outcomes for individuals who present to an emergency department after surviving a non-fatal overdose involving opioids. Patients are linked with peer support specialists to help facilitate connections to substance use disorder treatment after discharge.

Title: Coordinated Medical Treatment of Opioid Use Disorder and Infectious Disease
Partnership: MUSC, Clemson
Description: This is a multi-site randomized controlled trial of infectious disease/hospital-coordinated initiation of an innovative treatment at three United States hospitals serving rural and urban communities where adults are admitted to an inpatient facility for infections related to opioid use disorder. Participants in this study are followed for three months post-discharge.

Title: An Intelligent Pervasive Augmented reaLity Therapy (iPAL) for Opioid Use Disorder and Recovery
Partners: Clemson, USC
Description: This project is developing Intelligent Pervasive Augmented reaLity Therapy (iPAL), a technology-enabled opioid use disorder (OUD) intervention that aims to help OUD sufferers manage their cravings to reduce their risk for relapse or overdose. iPAL integrates complementary psychotherapies (cognitive behavioral therapy and heart rate variability biofeedback) with immersive technologies (augmented and mixed reality) to offer convenience, discretion in use, in the moment/real-time through personalized strategies.

Title: Emergency Department Alternatives to Opioids: Adapting Proven Therapies Into Everyday Practice Across the South
Partners: Clemson, USC
Description: The goal of this project is to develop and implement a program to initiate expanded multidisciplinary treatment plans for pain management in the emergency department (ED). Evidence-based alternative to opioids will be implemented and evaluated in a variety of ED settings in Southern states.

Title: Project EXPAND – Enriching eXperiences by Providing Addiction Learning in New Directions
Partners: Clemson, USC
The goal of this project is to expand access to medications for opioid use disorder (MOUD) by ensuring expanded and enhanced education and innovative training. Educational programming focuses on medical students and residents, as well as waivered prescribers in South Carolina who have not yet begun treating patients with MOUD.

Title: Project EMPOWER
Partnership: Clemson, USC
Description: This project trained 450 medical and nurse practitioner students to deliver medication-assisted treatment in order to increase work capacity of substance use providers in South Carolina and the Southeast.

Title: REAL Counselor Training and Development – Reinforcing Education through Addictions-Focused Learning
Partnership: Clemson, USC
Description: The goal of this project was to infuse the counselor education program curriculum at Clemson University with content that will enhance counselors' knowledge and awareness of substance use disorders.

Title: CU SUCCEEDS Program 2 – E-cigarette Use to Improve Smoking Cessation Outcomes Among Smokers on Buprenorphine: The ERASER Study
Partnership: Clemson, USC
Description: The goal of this open-label single-arm clinical trial is to test the use of e-cigarettes as a smoking cessation aid among smokers with opioid use disorder on buprenorphine in a real-world setting.

Title: Managing Abstinence in Newborns (MAiN) Expansion
Partnership: Clemson, USC
Description: The MAiN model of care provides early pharmacological therapy to otherwise healthy newborns at highest risk for neonatal abstinence syndrome (NAS). The goal of this expansion project is to expand the MAiN model of care to additional sites across the state and promote the program as a national standard of care.

Title: Buddy to Care: Building Understanding of Determinants Impacting Your Recovery
Partnership: Clemson, USC
Description: This study will utilize a mixed-methods research design to investigate the feasibility, acceptability, and preliminary efficacy of an innovative peer recovery support intervention, "Buddy to Care," for patients receiving treatment for opioid use disorder at Prisma Health.

Title: A Novel Telemedicine Intervention in Which Community Paramedics Connect Patients With Hepatitis C Virus to Treatment

Partners: Clemson, USC

Description: This study evaluates the implementation of the CP iLink program, which is a telemedicine intervention delivered by a community paramedic to connect and treat individuals with HCV who are otherwise unable to access health care.

Title: Integrated Intervention Involving Cognitive Behavioral Therapy + Recovery Coaching on Responses Among Individuals With Opioid Use Disorder

Partnership: Clemson, USC

Description: This project aims to to test the efficacy of a CBT+recovery coaching (CBT-RC) intervention relative to treatment as usual (TAU) among patients receiving medications for opioid use disorder. This study will use a new computer-based CBT4CBT therapy program in combination with recovery coaching as an experimental treatment to be compared to the TAU group.

Title: Collegiate Recovery Programming – Gamecock Recovery

Partnership: DAODAS, USC

Description: This programming was developed to promote nurturing campuses and community environments to ensure that all students in recovery from substance use disorders can achieve academic and personal success. The peer-based student community supports its members with programmatic structure and iniatiatives focused on prevention, intervention, and recovery.
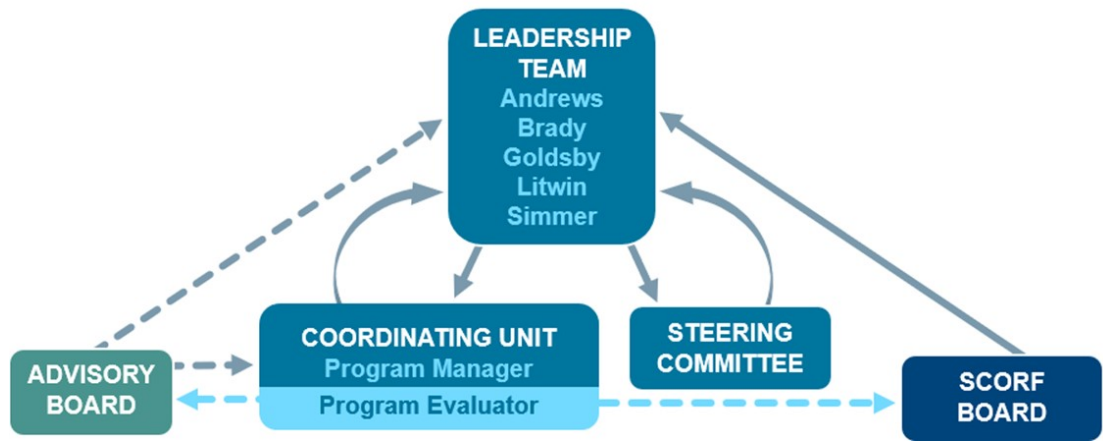
Title: Identifying Payment Strategies to Expand Availablity of Substance Use Disorder Treatment Services

Partnership: DAODAS, USC

Description: This project identified payment strategies to expand the availability of substance use disorder treatment services funded by DAODAS.

ORGANIZATIONAL CHART

In addition to the Leadership Team, the following individuals will support the Center of Excellence (COE) in Addiction as members of the Steering Committee.

SC DEPARTMENT OF ALCOHOL AND OTHER DRUG ABUSE SERVICES (DAODAS)

Margaret Garrett, MEd, LPC, LAC, AADC, serves as a Medicaid Compliance Specialist for DAODAS. She works statewide with county alcohol and drug abuse authorities to ensure compliance with addiction treatment standards, as well as to encourage the highest quality service delivery. She has worked in the substance use disorder (SUD) field for 14 years with combined experience in research, counseling, and administration. This experience has afforded her a nuanced understanding of the SUD treatment, prevention, intervention, and recovery landscape in South Carolina. Ms. Garrett holds a master's degree in Education, as well as an Educational Specialist degree in mental health counseling.

SC DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (DHEC)

Eric McFarland, MBA, RN, is Director of the DHEC Bureau of Healthcare Systems and Services. His responsibilities include oversight of licensed facilities, professionals, medical providers, and emergency medical and trauma services. Mr. McFarland has extensive experience working in healthcare facilities, having previously been employed as a nursing director with hospital systems in South Carolina and out of state, and earlier in his career as a paramedic and deputy coroner. Mr. McFarland holds a master's degree in Business Administration from the University of South Carolina Moore School of Business and is a Registered Nurse.

Brannon Traxler, MD, MPH, is Director of Public Health at DHEC and provides strategic direction in this area for the state as the designated state health official. Her background as a board-certified surgeon in clinical practice, combined with her current role as a public health physician, provide her with unique insight regarding opioids and opioid use disorder.

CLEMSON UNIVERSITY

Lior Rennert, PhD, is an Assistant Professor in the Department of Public Health Sciences at Clemson University. He is the founding director of Clemson University's Center for Public Health Modeling and Response, whose mission is to utilize data-driven approaches to inform and improve preparedness and response to public health threats, including the opioid epidemic. As a founder and lead of Clemson University's Public Health Strategy Team, Dr. Rennert has led the development of dynamic simulation models to guide university policy throughout the COVID-19 pandemic. He is a member of the Prisma Health Opioid Stewardship Committee, where he leads research to evaluate and improve opioid policies. His collaborative work in addiction and opioid-related research is in partnership with Prisma Health's Addiction Medicine Center and the University of Pennsylvania's Center of Studies for Addiction. He has developed protocols for opioid-related interventions and conducted both primary and secondary analyses to evaluate the effectiveness of such interventions. In collaboration with Clemson Rural Health, Prisma Health, and the SC Center for Rural and Primary Healthcare (funder), Dr. Rennert is leading the development and implementation of a modeling framework to identify communities at greatest risk of opioid use disorder, HCV, and HIV for targeted delivery of mobile health clinics. He is currently developing a dynamic modeling framework for infectious disease surveillance, prediction, and real-time allocation of essential resources to underserved communities in order to reduce health disparities statewide.

Heidi Zinzow, PhD, is a professor, Co-Director of the Center for Addiction and Mental Health Research, and a Licensed Clinical Psychologist in the Department of Psychology at Clemson University. Dr. Zinzow has conducted federally funded research and authored over 70 scientific publications on trauma, violence, and associated mental health outcomes, including post-traumatic stress and substance use disorders. She has expertise in developing and evaluating intervention and prevention programs for sexual violence, suicide, and substance use, as well as mindfulness-based interventions for opioid relapse prevention. Dr. Zinzow also examines barriers to help-seeking and has methodological expertise in epidemiology and implementation science.

MEDICAL UNIVERSITY OF SOUTH CAROLINA (MUSC)

Kelly Barth, DO, is a physician, educator, and clinical researcher with board certification in Internal Medicine (ABIM), Addiction Psychiatry (ABPN), and Pain Medicine (ABPM). She has developed expertise over the past 15 years in the identification and management of substance use disorders, with a focus on opioid use disorder (OUD) and chronic pain. Dr. Barth has decades of experience in medical training and education, having served as the MUSC Combined Internal Medicine and Psychiatry Residency Program Director for seven years, Co-Director of the Diversity in Addiction Research Training program for seven years, and founder and current "hub" member of MUSC's Project ECHO for Opioid Use Disorders statewide tele-mentoring and academic detailing initiative. In statewide opioid initiatives over the past five years, Dr. Barth has trained more than 1,000 South Carolina healthcare professionals in medical facilities and community treatment programs in the identification and evidence-based management of OUD, utilizing both live trainings, group and individual education and tele-mentoring, and 1:1 Academic Detailing. She also formed a successful academic-industry partnership between Project ECHO and Anthem Health to improve evidence-based delivery of OUD care for Anthem Healthcare

providers. Dr. Barth's educational, clinical, and research experience in the areas directly relevant to the COE goals make her well-suited to serve as a member of the Steering Committee.

Louise Haynes, MSW, is an Assistant Professor in the MUSC Department of Psychiatry and Behavioral Sciences. For the past 20 years, much of her work has been as a Co-Investigator and Community Treatment Program Representative with the NIDA Clinical Trials Network. Her expertise in community engagement, implementation science, and deep connections to agencies and treatment centers across South Carolina will be invaluable to this project. In addition to her research experience, Ms. Haynes has worked in both clinical and administrative roles in South Carolina. She recently served as Vice Chair of the SC Department of Mental Health Commission. She was Director of Women's Services at the state's single state authority (DAODAS) and Director of Morris Village, a publicly funded 150-bed inpatient treatment program. Ms. Haynes will serve as the Community Engagement Liaison for the COE, helping to assemble the Advisory Board and conducting outreach to treatment programs and municipality officials to promote the initiatives of the COE.

UNIVERSITY OF SOUTH CAROLINA (USC)

Bankole Olatosi, PhD, is an assistant professor at the USC Arnold School of Public Health. His research interests are in the fields of health analytics, HIV/AIDS, and social determinants of health. Currently, he is funded by the National Institutes of Health to study both HIV treatment gaps, viral suppression, and the COVID-19 pandemic in South Carolina by applying data science to statewide electronic health records population data. His work in these two areas is instrumental in understanding how "big data" science can advance important discoveries in disease surveillance, transmission, natural history, and progression important for treatment and necessary for targeted intervention purposes in the state. Dr. Olatosi co-leads the National Big Data Health Science Center. He is also Multiple Principal Investigator on the National Institute of Allergy and Infectious Diseases' Big Data HIV study and Big Data COVID-19 study; the contact Principal Investigator for the parent grant (i.e., HIV Viral Suppression Project); and a consultant on other international research grants. Dr. Olatosi received the Breakthrough Research Star Award 2021 at USC.

Wendy Besmann, MPH, is a Research Associate in the Department of Health Services, Policy and Management at the USC Arnold School of Public Health. She has more than 30 years of experience in healthcare delivery systems and behavioral health. Ms. Besmann previously worked as social marketing and training director for a Substance Abuse and Mental Health Services Administration system of care grant for youth and young adults with behavioral health and substance use disorders (SUDs). She is the author of the nationally distributed *Family Road Map* workbook and workshop series to help families navigate health and education systems for their children and youth with behavioral health challenges. Most recently, Ms. Besmann co-authored a series of policy briefs on South Carolina's public payment systems for SUD treatment. This series provided a comprehensive review of national trends in utilization management, alternative payment methods, and Federally Qualified Health Centers, with recommendations for strategies appropriate to South Carolina's unique SUD treatment environment.

APPENDIX C: MEMORANDUM OF INTENT & LETTERS OF SUPPORT

MEMORANDUM OF INTENT TO COLLABORATE
REGARDING
THE SOUTH CAROLINA CENTER OF EXCELLENCE IN ADDICTION
BETWEEN
CLEMSON UNIVERSITY,
MEDICAL UNIVERSITY OF SOUTH CAROLINA,
UNIVERSITY OF SOUTH CAROLINA,
SOUTH CAROLINA DEPARTMENT OF ALCOHOL AND OTHER DRUG ABUSE SERVICES, AND
SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

This Memorandum of Intent to Collaborate ("Memorandum") is between Clemson University, Medical University of South Carolina, University of South Carolina, (collectively, the "Research Universities"), South Carolina Department of Alcohol and Other Drug Abuse Services ("DAODAS"), and South Carolina Department of Health and Environmental Control ("DHEC").

In an effort to combine, and more efficiently deploy, resources in addressing opioid use disorders ("OUDs") and other substance use disorders ("SUDs") in South Carolina, the parties to this Memorandum hereby create the South Carolina Center of Excellence In Addiction ("Center of Excellence").

In addition to conducting research, the Center of Excellence will provide training, program implementation, and service delivery throughout the state of South Carolina with regard to OUDs and SUDs.

The Center of Excellence shall be a collaborative institution jointly owned and operated by the parties.

The Center of Excellence shall adhere to the highest scientific quality, values and ethical standards in all of its activities.

The Center of Excellence is grounded in the commitment of the parties to maintain an equal partnership in a manner that maximizes their mutual ability to deliver services and programing to the people of South Carolina.

To avoid the inefficient expenditure of resources, and to ensure consistency in practices deployed throughout the state, the parties intend to use the Center of Excellence in a unified manner to apply for grant funding from the South Carolina Opioid Recovery Fund ("SCORF") and to apply for funding from individual counties and municipalities to address the opioid crisis.

The Research Universities intend to collectively contribute their academic and clinical resources to the Center of Excellence for the various grant-funded programs and initiatives.

DAODAS and DHEC intend to provide administrative, clinical and technical assistance to the Center of Excellence in implementing the grant-funded programs and initiatives.

This Memorandum is an expression of the parties' intent to collaborate, and, while the parties agree to the contents of this Memorandum in principle, the parties shall have no legal obligation to each other resulting from the execution of this Memorandum.

Acknowledged and accepted this ___22___ day of ___NOV___, 2022.

Clemson University:

By: _James P. Clements_

Title: _president_

Medical University of South Carolina:

By: _____

Title: _President_

University of South Carolina:

By: _Michael Amiridis_

Title: _PRESIDENT_

South Carolina Department of
Alcohol and Other Drug Abuse Services:

By: _Sara Coldsby_

Title: _Director_

South Carolina Department of
Health and Environmental Control:

By: _E. Simmer_

Title: _Agency Director_

SOUTH CAROLINA DEPARTMENT OF HEALTH AND HUMAN SERVICES
Healthy Connections
MEDICAID

Henry McMaster GOVERNOR
Robert M. Kerr DIRECTOR
P.O. Box 8206 > Columbia, SC 29202
www.scdhhs.gov

January 10, 2023

South Carolina Center of Excellence in Addiction
c/o Sara Goldsby, Director
S.C. Department of Alcohol and Other Drug Abuse Services
Post Office Box 8268
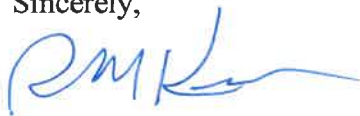Columbia, SC 29202

Dear Director Goldsby:

On behalf of the S.C. Department of Health and Human Services (DHHS), please accept this letter as our commitment to assigning a DHHS staff member to the Steering Committee for the South Carolina Center of Excellence in Addiction, as well as to allowing the use of deidentified linkable claims level files of the Medicaid data for a statewide examination of core measures for tracking opioid use disorder (OUD) among Medicaid beneficiaries, from initial diagnosis of OUD through treatment, retention in treatment, and recovery.

I understand that this information will help create a data-use plan that includes:

- reporting data publicly to create accountability on the effectiveness of the state's efforts to address the opioid crisis;
- reviewing and acting on the data regularly;
- identifying demographic categories to address health inequities.

Please feel free to contact me if DHHS can assist the Center of Excellence in Addiction in any other ways.

Sincerely,

Robert M. Kerr
Director

January 9, 2023

South Carolina Center of Excellence in Addiction
c/o Sara Goldsby, Director
S.C. Department of Alcohol and Other Drug Abuse Services
Post Office Box 8268
Columbia, SC 29202

Dear Director Goldsby:

The South Carolina Hospital Association (SCHA) welcomes the arrival of the South Carolina Center of Excellence in Addiction. Independently, the various entities committed to the Center have assisted our state's hospitals in advancing their work to address the opioid crisis and addiction as a whole, but the Center of Excellence is well positioned to combine and more efficiently apply expertise and resources that will address opioid use disorder and other substance use disorders in our state.

I look forward to the Center of Excellence's ability to complement our association's support of measures to improve the state's behavioral healthcare system, and I encourage you to contact me if the SCHA can assist the Center of Excellence in Addiction in any way.

Sincerely,

J. Thornton Kirby
President & CEO

January 5, 2023

South Carolina Center of Excellence in Addiction
c/o Sara Goldsby, Director
S.C. Department of Alcohol and Other Drug Abuse Services
Post Office Box 8268
Columbia, SC 29202

Dear Director Goldsby:

The South Carolina Primary Health Care Association (SCPHCA) welcomes the arrival of the South Carolina Center of Excellence in Addiction, as learning opportunities and technical assistance offered by the Center will be available to South Carolina's Federally Qualified Health Centers/Health Centers and stand to support the health centers' front-line work to address addiction with community-based care models.

The SCPHCA's mission is to provide a unified supportive infrastructure that facilitates access to community-based primary, behavioral and other health care services to every community in South Carolina. For over 40 years, the Association has served as the membership organization for community health centers in South Carolina. Currently, the membership of the SCPHCA includes 23 South Carolina community health centers. In addition to serving these members, the Association is also the grantee for the statewide Migrant Health Program. In 2021, these 24 health centers provided and supported the delivery of preventive and primary health care services to over 430,000 persons through more than 230 delivery sites in South Carolina. The SCPHCA provides support to members and other interested entities to enhance their capacity to deliver high quality health care to their patients, many of whom have a greater chance of being medically underserved. The Association's support is provided through various vehicles- training, technical assistance, advocacy, and partnership building, just to name a few.

The SCPHCA is committed to building and expanding collaborative relationships that advance the health and welfare of persons living in SC. I also look forward to the Center of Excellence's ability to complement the efforts of our Rural Communities Opioid Response Program, and I encourage you to contact me if the SCPHCA can assist the Center of Excellence in Addiction in any way.

Sincerely,

Vicki M. Young, PhD
Chief Operating Officer

APPENDIX D: REFERENCES

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