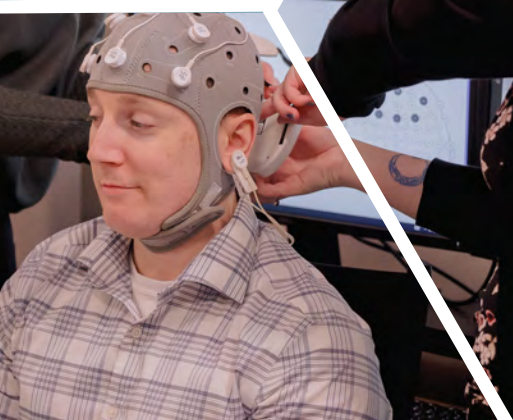
ANNUAL REPORT
2023



ROGERS
Research Center

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Disclaimer

The information presented in this annual report is intended for general information and educational purposes. It is not intended to replace the advice of your own physician. Contact your physician if you believe you have a health problem.

Table of Contents

Reflecting on success and charting the path forward at Rogers Research Center

Dr. Kelly Piacsek

As we reflect on our third full year of operations at Rogers Research Center, it is both an honor and a pleasure to look back on the strides we have made as well as the momentum since we began this journey.

Our commitment to excellence is evident in the impact and reach of our research outcomes. This would not be possible without significant work behind the scenes to develop effective processes and procedures and a focus on attracting great talent, all of which are the foundation of meaningful research. I am delighted to share that our team has welcomed several accomplished full-time investigators this year, further complementing our expertise and contributing to the increased visibility and impact of our research.

As Rogers Behavioral Health ventures into a new 5-year strategic plan cycle, innovation is key, and the research team is ready for the opportunities ahead. With a strong foundation and a dedicated team of research professionals, we are well-positioned to excel in advanced, prospective projects that can transform mental health treatment practices.

Our mission is bolstered by the continued generosity and support of our valued donors and strategic partners. We have developed meaningful collaborations that will continue to inspire groundbreaking ideas and address critical research questions.

As we look to the future, I am excited about the talented team we have built, and grateful for the steadfast support from the Rogers system, Rogers Foundation, and our generous donors. I am confident that our work will have an impact on our patients' lives and the broader field of mental health.

Sincerely,

Kelly Piacsek, PhD
VP of Research

A word from our President and CEO

Cindy Meyer

The past year has been a time of transition and strategy for the Rogers Behavioral Health organization. As we work to strengthen our focus on exceptional specialized clinical care, research and innovation continue to be a top priority. Like many health systems, Rogers continues to adapt and evolve during this time of economic shift to ensure all people have access to quality, evidence-based treatment. Rogers Research Center plays a critical role in leading the adoption and integration of evidence-based findings to provide the best care available.

Through translational research, Rogers will bridge the gap between basic science and clinical practice to serve our patients with best-in-class mental health and addiction care. What sets Rogers research apart is our ability to answer real-world questions related to clinical effectiveness, and to bring proven, innovative treatments to our patients sooner by breaking down barriers to implementation. Rogers has a legacy of providing highly effective treatments for complex and acute mental health conditions, and the Research Center helps us forge new pathways to achieve an even higher standard of available care.

We are grateful and honored to share our research accomplishments and progress with you and showcase our research, data, and people who make this work possible.

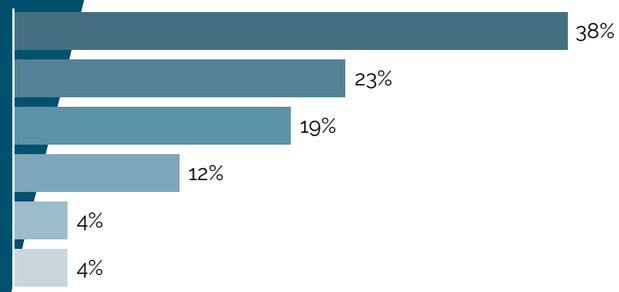
With gratitude,

Cindy Meyer, MSSW
President and CEO

Research Center 2023 metrics

Publications

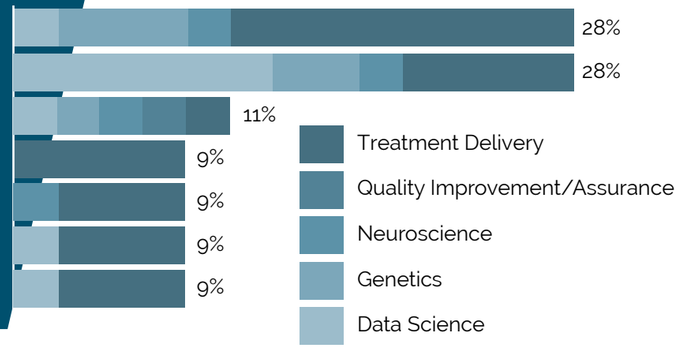
Total new publications **26**



Active Studies

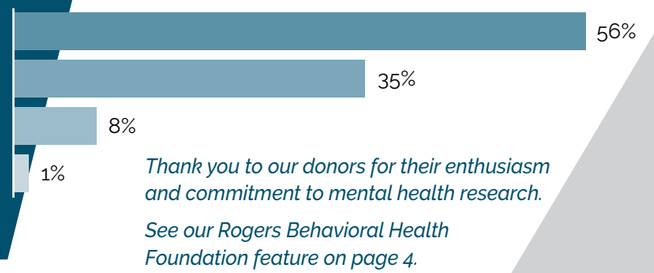
Total active studies by year end **46**

Total prospective enrollments **2,012**



Funding

Total research expenditures FY23 **$1.3 M**



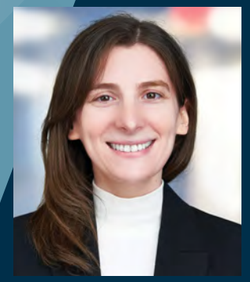
Thank you to our donors for their enthusiasm and commitment to mental health research.

See our Rogers Behavioral Health Foundation feature on page 4.

Expanding the Research Center to Philadelphia

With generous support from the Franklin Street Giving Tree Foundation, the Rogers Research Center is expanding its footprint to the Philadelphia area. This growth advances the work of Dr. Martin E. Franklin, executive clinical director of OCD and anxiety services at Rogers Behavioral Health, and creates capacity for two emerging investigators: Drs. Rachel Schwartz and Hana Zickgraf.

Dr. Martin E. Franklin



Dr. Rachel A. Schwartz

Dr. Hana F. Zickgraf

The Philadelphia Team

Martin E. Franklin, PhD

With more than 30 years of clinical and supervisory experience, Dr. Franklin is an internationally renowned expert in the treatment of obsessive-compulsive and related disorders, including body-focused repetitive behaviors, as well as the study and treatment of anxiety disorders. Dr. Franklin has provided research leadership and clinical expertise on numerous randomized controlled trials for OCD, Tourette Syndrome, trichotillomania, and social anxiety disorder. He has published more than 250 scientific papers, chapters, and books on these and other topics, and has lectured and conducted workshops on exposure and response prevention (ERP) and cognitive behavioral therapy (CBT) both in the U.S. and internationally.

In 2023, along with Dr. Franklin's continued work on medication optimization and treatment outcomes among pediatric patients with OCD, Dr. Franklin authored several high-impact journal publications. *Treatment of trichotillomania and skin-picking disorder*, is a review article examining different treatment approaches for often underreported and undertreated conditions. Dr. Franklin and his Rogers colleagues also examined the existing literature on the best treatment approaches for a rarer presentation of OCD among children (PANDAS and PANS) in the publication, *Current research updates on PANDAS and PANS.* Additionally, the publication, *Intensive cognitive-behavioral therapy telehealth for pediatric obsessive-compulsive disorder during the COVID-19 pandemic: Comparison with a matched sample treated in person,* is an examination of treatment outcomes among children and adolescents receiving OCD treatment via telehealth during the pandemic compared to a matched in-person sample. This work further demonstrates the effectiveness of telehealth treatment as comparable to in-person care – even in intensive behavioral health treatment.

Rachel A. Schwartz, PhD

Dr. Schwartz is an associate research psychologist who joined the Rogers Research Center in 2023. Her research focuses on improving the efficacy and accessibility of treatments for anxiety and obsessive-compulsive disorders, particularly treatment refractory forms. Much of Dr. Schwartz's research has centered on treatment outcome prediction and expanding access to care through digital interventions. In addition to her research background, she is a licensed clinical psychologist with expertise in cognitive-behavioral treatments for anxiety, trauma, and obsessive-compulsive disorders.

Dr. Schwartz is a well-published (18 total publications with 8 first-authored) and accoladed early-stage investigator on the Research Center team. She has initiated several studies here at Rogers, including examining treatment outcomes among pregnant patients with OCD, partnering with Dr. Franklin on examining medication optimization for adult and pediatric patients with OCD, as well as investigating an often treatment-resistant form of OCD that presents with "Not Just Right" or incompleteness symptoms.

Hana F. Zickgraf, PhD

Dr. Zickgraf is a research psychologist who joined the Rogers Research Center in 2023. Her research focuses on improving the identification, classification, and treatment of eating disorders across the lifespan. Dr. Zickgraf's previous work has focused on avoidant/restrictive food intake disorder (ARFID), the impact of food insecurity on the development of restrictive eating, orthorexia nervosa (impairing healthy eating preoccupation), and the efficacy and enhancement of exposure-based treatments for disordered eating. An established researcher, Dr. Zickgraf has authored 60 publications, 20 of which are first-authored and six, senior-authored. She is a licensed clinical psychologist with expertise in cognitive-behavioral treatment of pediatric anxiety, obsessive compulsive disorders, and eating disorders, and family-based treatment for eating disorders.

Dr. Zickgraf works closely with the eating disorder and OCD treatment teams at Rogers and has begun work to further examine how sleep disturbance impacts eating disorder symptoms among patients receiving intensive treatment. Previous research at Rogers revealed a high prevalence of co-occurring sleep disturbance among patients with eating disorders, and we continue to investigate the relationship between those symptoms and potential interventions.

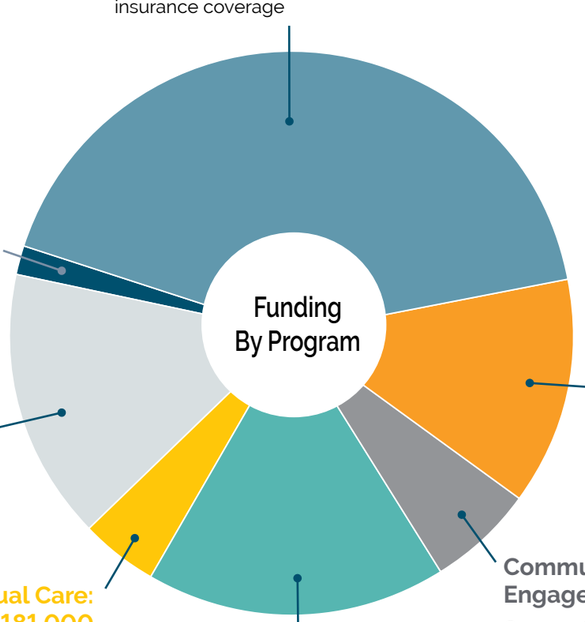
Dr. Zickgraf has also accelerated an investigation of utility and validity of a pediatric quality of life assessment (Pediatric Quality of Life Enjoyment and Satisfaction Questionnaire, PQ-LES-Q) used across all Rogers service lines to measure how treatment impacts child and adolescent quality of life.

Thank you to the Franklin Street Giving Tree Foundation for its ongoing support of research initiatives and commitment to Patient Care Grants and Angel Funds for Rogers patients in Philadelphia.

Partner in research: Rogers Behavioral Health Foundation

For more than 40 years, Rogers Behavioral Health Foundation has been breaking down barriers to mental health treatment and advancing community engagement to help reduce mental health stigma. In recent years, Rogers Foundation has expanded initiatives to include improving the behavioral health outcomes of individuals through research.

Rogers Behavioral Health Foundation Initiatives and FY 2023 Success



Patient Care Grants: $1,820,000

Free treatment for a patient's continued care, despite limited resources and insurance coverage

Canine-Assisted Intervention: $51,000

Integration of a trained facility dog to assist staff in helping a patient meet a specific treatment goal

Expansion: $675,000

New and updated facilities to ensure access to care and exceptional outcomes

Spiritual Care: $181,000

Allows patients to explore their faith as a component to recovery with our onsite chaplains

Research: $765,000

For clinical research studies to expand knowledge and improve mental health outcomes

Angel Fund: $570,000

Assistance for patients experiencing hardship outside of direct treatment costs (accommodations, transportation, utility bills, groceries, clothing, and more)

Community Learning and Engagement: $254,000

Community-based programming to reduce stigma and bring awareness to mental health challenges

Research Partnership

Rogers Behavioral Health Foundation has been pivotal in the establishment and growth of Rogers Research Center. Since the Research Center's inception in 2020, the Foundation team has helped raise more than $7.5 million dollars to support research operations, projects, and lab equipment. The Foundation's commitment to advancing the mission and vision of research at Rogers is unmatched and unrelenting – lending to the continued expansion and impact of the Research Center team.

We are especially grateful to Matthias Schueth, Marty Vogel, and the rest of the Foundation team as they continue to advocate for advanced, evidence-based mental health treatments and bridging the gap between research and clinical practice.

A thank you to our 2023 donors, as well, for their ongoing generosity and dedication. Without their support, much of the work you see in this report would not be possible.

Thank you to...

Lynn S. Nicholas Family Foundation
The Franklin Street Giving Tree Foundation
The Roehl Family
The Sardella Family
Sue and Jim Szymczak
Sylvia and David Jabour
Our donors who wish to remain anonymous

Make a contribution to Rogers Foundation

Research Center Biobank and genetics research

Demographics for Biobank Sample Collection

Levels of Care

Residential	53%
Partial Hospitalization	33%
Intensive Outpatient	13%
Community	1.5%
Inpatient	0.5%

Clinic Locations

Oconomowoc	65%
West Allis	19%
Brown Deer	15%

Treatment Programs

Substance Use	32%
OCD and Anxiety	24%
Depression	16%
Eating Disorders	11%
Trauma	6%
General Mental Health	8%
Community	1%

Race and Ethnicity

White	86%
Black	7%
Hispanic or Latino	8%
Other	4%
Asian	2%
Native American	1%

Sex

Female	59%
Male	41%

Average Age

Child and Adolescent	15
Adult	32

A person's genetics have the potential to provide a glimpse into the biological origins of complex mental health and substance use disorders that may lead to more personalized medicine strategies for treatment. The Rogers Research Center Biobank was established to close the gap in availability of genetic samples of individuals with acute mental health conditions for research, especially genetic specimens accompanied by treatment outcomes data that can help provide greater insight into treatment responsiveness. With the support of a generous donor, the Rogers Research Center Biobank opened and began collecting samples in November 2022. This year represented the first full year of genetic sample collection for the research team, collecting samples from more than 300 patients.

The Biobank team worked closely with clinical leaders to establish collection sites in treatment programs across Rogers' Wisconsin locations. Patients have been enthusiastic about contributing a sample to help advance mental health genetics research. In the Research Center, we are particularly interested in investigating mental health genetic risk factor identification, predicted response to treatment, and mental health symptom presentations of genetic disorders. We have several ongoing internal and collaborative projects within these focus areas, as well as new projects on the horizon.

Genetics research collaborations

Latino Trans-Ancestry Initiative for OCD Genomics

Conducting genomic research in diverse populations has led to numerous advances in our understanding of human history, biology, and health disparities, as well as discoveries of vital clinical significance, and should be an imperative for all mental health genetic research.

Rogers Research Center continues its collaboration with Baylor College of Medicine and a large international team of obsessive-compulsive disorder (OCD) investigators on the Latino Trans-Ancestry Initiative for OCD Genomics. Researchers will extract DNA from saliva samples of eligible participants in this study and extensively analyze the individual's genetic code in an attempt to identify genes that may be associated with an increased risk of developing OCD symptoms.

Recruitment for this study began in November 2023, and sample collection will continue into 2026. The first publication from this study was accepted in 2023 to the American Journal of Medical Genetics Part B: Neuropsychiatric Genetics. This study is funded by the National Institutes of Health.

Study Team: *Eric Storch, PhD (PI, Baylor) et al.; Sheldon Garrison, PhD (Rogers); Issac Siegel, BS (Rogers)*

Breaking through OCD Genetics

Rogers Research Center and University of California – San Francisco (UCSF) continued their three-year collaboration that includes Rutgers University and its National Institute of Mental Health (NIMH) Center for Collaborative Genomics Research on Mental Disorders to identify genes that provide molecular clues to the origins of OCD symptoms and offer important pathways for the development of new and more effective treatments.

In the first full year of this project, Rogers Research Center was the first site in this national multisite study to collect specimens. In 2023, we enrolled 21 new study participants (20% of the recruitment goal). Recruitment will continue through 2025.

Study Team: *Matthew W. State, MD, PhD (Co-PI, UCSF); A. Jeremy Willsey, PhD (Co-PI, UCSF); Andrew Moses Lee, MD, PhD (UCSF); Martin E. Franklin, PhD (Rogers); Sheldon Garrison, PhD (Rogers); Sophie Schweinert, BS (Rogers); Isaac Siegel, BS (Rogers); My Le Tran, BS (Rogers)*

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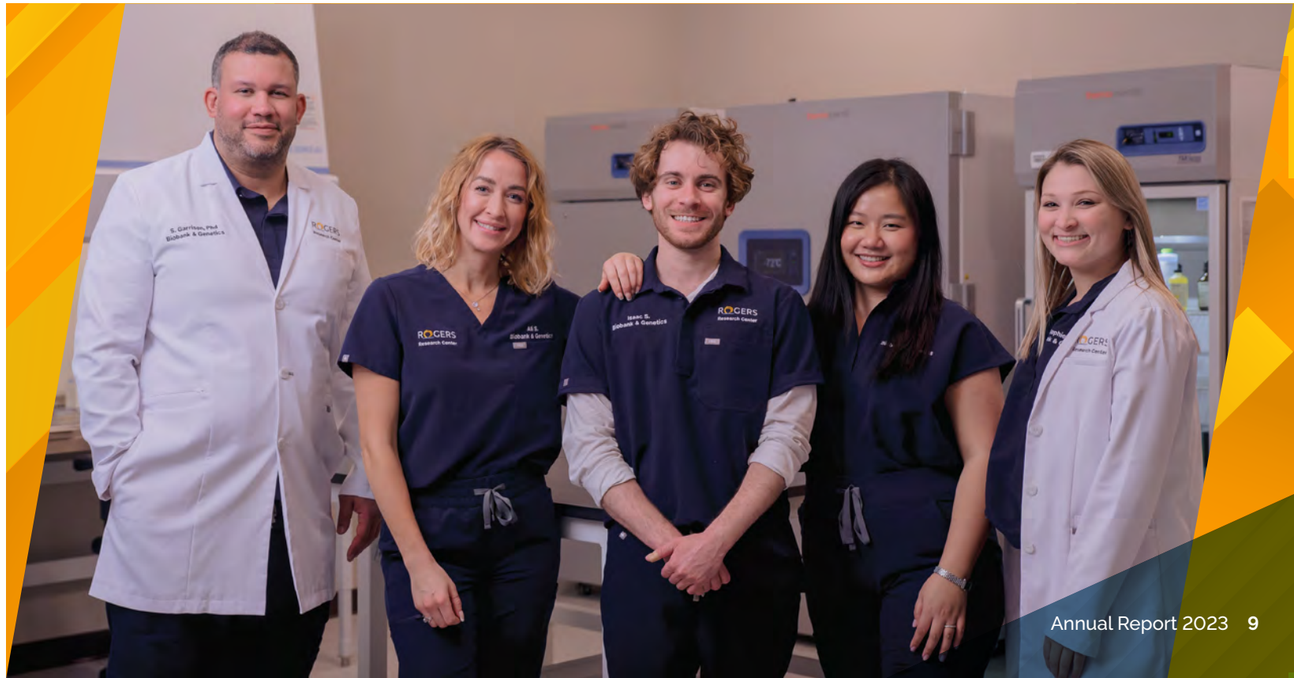


Research Center Biobank and genetics research *(continued)*

Dr, Sheldon Garrison

Rogers Research Center internal genetics studies

Pharmacogenomics (PGx)

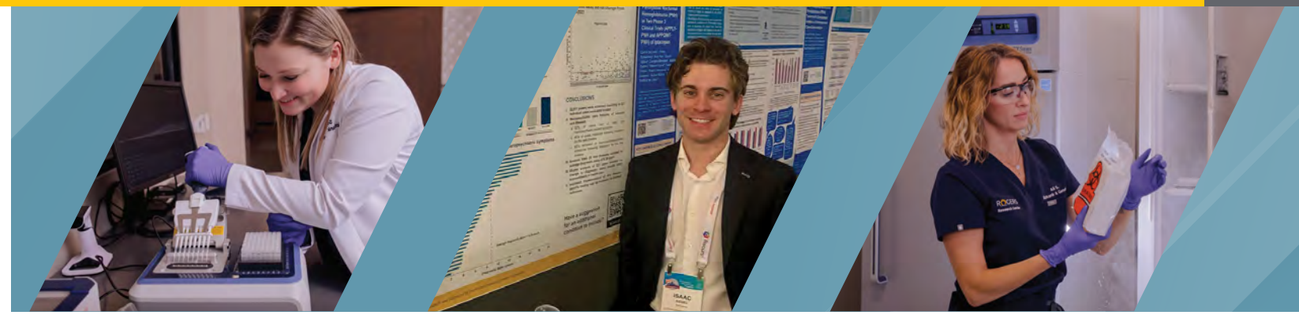
For the past several years, the implementation of pharmacogenomic (PGx) testing has become more widespread in clinical settings, either ordered at point-of-care when treatment is needed or in advance of treatment for future use. PGx testing helps physicians to further personalize treatments by selecting the optimal medication and tailoring its dosage using a patient's unique genetic profile. The goal is to optimize medication effectiveness while reducing side effects. More specifically, by analyzing the genes in a PGx test, patients can be stratified by projected response to a medication as typical (normal) or atypical (ultra-rapid, intermediate, or poor metabolizer). The knowledge of potential differences in drug metabolism impacted by genetics can inform drug selection or dosing over a patient's lifetime.

Over the past decade, studies have begun to evaluate the utility of PGx testing in specific populations of youth with psychiatric disorders. This research is critical as psychotherapeutic agents and antidepressants are the second most prescribed medications in children and adolescents, yet there is no consensus in the field about their effectiveness, and further research is needed to determine how to incorporate PGx testing into clinical workflow. There is a pressing need to study PGx testing because the use of psychotropic medications among adolescents in the United States has been one of the fastest growing trends in drug utilization. To date, PGx research involving children and adolescents with anxiety and depression has demonstrated the importance of examining metabolizer status for some of the most common medications prescribed (i.e., serotonin reuptake inhibitors, SSRIs). This research has shown a correlation with treatment outcomes including shorter lengths of stay, greater tolerability with relation to side effects, and better medication adherence when youth have optimum metabolizer status with specific enzyme proteins.

At Rogers, PGx is ordered at the physician's discretion, or patients bring prior tests when they admit for treatment. In both cases, these PGx test results are incorporated into a patient's electronic medical record. Through retrospective analysis, the Rogers Research team is currently examining test results of nearly 700 past patients as part of a study to examine overall utility of PGx testing results and its impact on treatment outcomes. Patients with PGx testing results who have medications prescribed aligning with the PGx-guided medication selection will be compared to a matched control group treated in the same service line during the same timeframe. While the study includes all age groups and primary diagnoses across the Rogers system, a sub-analysis of adolescent and young adult depression and anxiety group (approximately 2/3) is planned, as this presents a unique opportunity to address the lack of existing literature on clinical utility of PGx testing, as well as its impact on treatment outcomes among adolescents and young adults.

The research team obtained IRB approval for this study and began work to identify all complete patient charts that include the PGx testing for analysis. Currently, the Rogers study team is working with Rogers Data Analytics Department to prepare the full data sets for analysis. The study team is actively working with Rogers' child and adolescent psychiatrists and psychologists to ensure that the interpretation of these data is directly relevant to Rogers' clinical care, as well as generalizable for future publication.

Study Team: *Sheldon Garrison, PhD; Jeff Engelmann, PhD; Isaac Siegel, BS; Sophie Schweinert, BS; Maddie Hartig, MS; Kyle Carini, BS*



The intersection of mental health and rare disease

Rare diseases are defined as conditions that affect fewer than 200,000 people in the United States. Although infrequent, these conditions are many in number, totaling almost 10,000 unique identified rare diseases. Most of these conditions display complex etiologies and genetic involvement that are difficult to diagnose and manage, and collectively contribute to nearly half of all inpatient, readmission, and emergency department costs. Despite their substantial impact on patients' lives and healthcare utilization, the average time for diagnosing rare diseases is still five to eight years from the onset of symptoms.

Many rare diseases present with neuro-psychiatric features. These features can appear as depression, attention-deficit/hyperactivity disorder (ADHD), general anxiety disorder, obsessive-compulsive disorder (OCD), mood disorders, autism, or others, which can often lead to misdiagnosis or prolonged treatment. In Rogers' intensive treatment programs, we see our patients when their mental health symptoms become debilitating, and many of them have tried numerous treatments without relief. Ruling out rare diseases, or identifying rare diseases that may be impeding treatment, is especially critical for our patients whose symptoms may be resistant to traditional treatments.

Since 2022, the Research Center team has worked closely with physicians and rare disease advocacy groups to develop a novel genetic rare disease screening panel to help identify rare diseases that may be impacting patient treatment. Currently, the screening includes 105 rare diseases most likely to present with psychiatric features. Along with ensuring the comprehensiveness of the screening, Rogers' research team continues to investigate the intersection of mental health and rare disease. This year, a systematic review was completed to evaluate diagnostic delays in mental health when patients are affected by one of these underlying rare diseases. Over 22,000 papers were screened for the review, resulting in 321 individual rare disease cases that were evaluated for diagnostic delay. Of the total cases reviewed, 82% had at least one neuropsychiatric-related symptom, and 60% experienced remission in neuropsychiatric symptoms following diagnosis and treatment for the rare disease. Analysis of the 30 rare diseases included in the review revealed an average diagnostic delay of 8.38 years. The reviewed papers spanned 45 years of research, and there has been no change in diagnostic delay despite numerous advancements in healthcare, further justifying implementing broadened rare disease screening efforts.

The research team presented the results of this study at the National Organization for Rare Disorders (NORD) 2023 Breakthrough Summit. A manuscript of this study will be submitted for publication in the first quarter of 2024. The Research Center's research scientist, Dr. Sheldon Garrison, also presented at the NORD conference to share insights related to the investigative work around supporting the mental health needs of patients and families affected by rare disease.

Moving forward, the next step for this work is to perform genetic sequencing on a subset of patients to further investigate the prevalence of rare disease within our patient population, as well as to provide clinicians with potential insight into contributing genetic factors for patients experiencing less treatment response.

Study Team: *Sheldon Garrison, PhD; Isaac Siegel, BS; Ella C. Patty, Intern; Lily E. Mantsch, Intern*

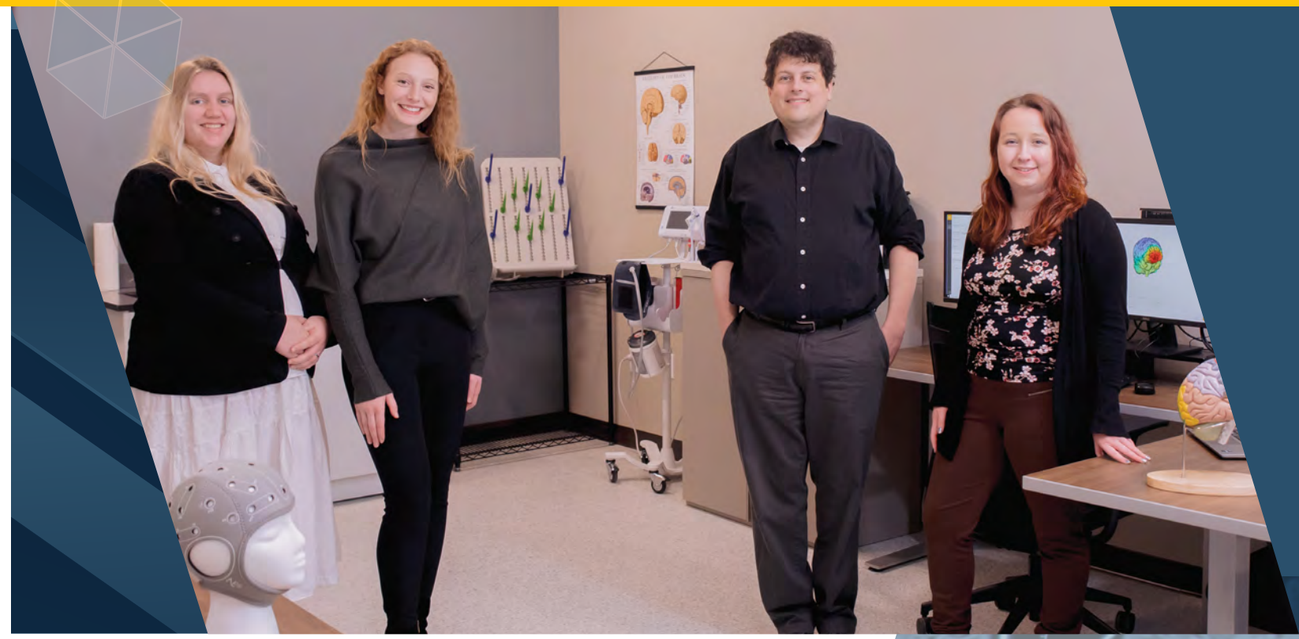
Using Functional Magnetic Resonance Imaging (fMRI)

Examining the relationship between neighborhood-level factors and nicotine dependence among and across racial groups – a community study

Dr, Jeff Engelmann

Despite an increase in preventative efforts and cessation treatment options, smoking continues to be the leading cause of preventable deaths in the United States. National statistics show that among these smoking-related deaths, Black Americans are disproportionately affected. Though Black Americans smoke at similar rates compared to white Americans, Black individuals are less likely to successfully quit smoking, which might explain why they experience higher rates of smoking-related mortality from diseases such as lung cancer and heart disease. We do not currently understand why Black Americans have lower smoking-cessation rates. One possibility is that the racial difference may be explained not only by individual level factors (e.g., smoking history, level of nicotine dependence) but also by neighborhood level factors such as those that might be related to chronic stress (e.g., crime, poverty) or nicotine availability (e.g., tobacco retailer density). To develop more effective smoking prevention and cessation treatments, Rogers Research Center has partnered with University of Wisconsin-Milwaukee and the Medical College of Wisconsin to examine the neurological processes behind smoking behaviors and how these processes might be influenced by neighborhood level factors.

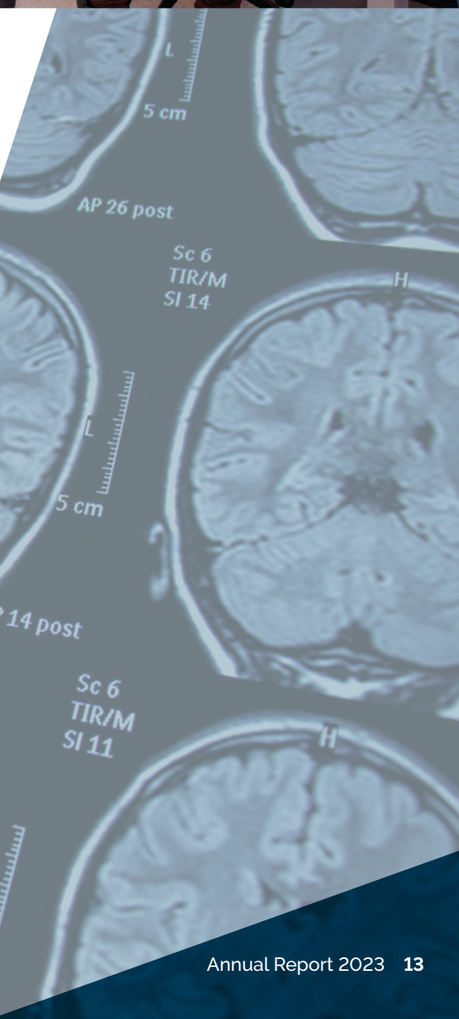
Individuals motivated to quit smoking often struggle to do so because of several complex neurobiological processes that reinforce smoking behavior. For example, individuals who smoke often cite smoking as increasing positive emotions like calmness and focus and decreasing negative ones such as stress and anxiety. The act of smoking becomes very rewarding for the individual, and compounded with the symptoms of nicotine withdrawal, often traps individuals who smoke in a vicious cycle of unsuccessful cessation attempts. Another factor associated with addiction intensity and cessation success is cue reactivity. Cue reactivity is when a person learns to associate specific moods, situations, or environmental factors with the rewarding effects of nicotine. Oftentimes, it is these associations that trigger relapse in those trying to quit smoking. Previous studies by Rogers Research Center's research psychologist, Jeff Engelmann, PhD, and other research groups suggest that brain activity measured in response to smoking-related cues, a biomarker of cue reactivity, is predictive of a smoker's likelihood of relapse. Thus, interventions targeting the brain systems and processes involved in cue reactivity might lead to better smoking cessation outcomes. Drs. Engelmann and D. Phuong Do, PhD (University of Wisconsin-Milwaukee) are currently expanding on these previous findings by examining how neighborhood-level factors such as poverty, neighborhood disorder, and tobacco retailer density influence cue reactivity.



Over the past year, the study team has recruited 12 community members to participate in this study. These 12 participants completed a series of computer-based surveys as well as an fMRI scan. They were presented with both smoking-related and neutral cues that they rated in terms of how each image made them feel. Participants were then shown these same images during the fMRI scan. The study team has begun to process and analyze the data from these scans and hopes to recruit another eight participants in 2024. This study is funded by the National Institute on Drug Abuse (NIDA).

Please note that Rogers' patients are not eligible for this study.

Study team: *D. Phuong Do, PhD (UWM, PI); Jeff Engelmann, PhD (Rogers, PI); Katelyn Greenberg, MA (Rogers); Holly Pelnar, BA (Rogers); Victoria Hummel, BA (Rogers)*



Transcranial direct current stimulation as treatment enhancement for obsessive-compulsive disorder

Last year, work began to investigate the potential for non-invasive brain stimulation as a treatment for severe obsessive-compulsive disorder (OCD). Patients typically will have attempted various treatment strategies without significant OCD symptom reduction prior to seeking treatment at Rogers. Rogers employs cognitive-behavioral therapy (CBT) in its treatment protocol. CBT incorporates the concept of exposure and response prevention (ERP), which aims to help retrain an individual's fear response system. This is critical because for patients with OCD, their brain attempts to respond to fears that are unlikely to manifest (commonly referred to as obsessions or intrusive thoughts) with behaviors that are intended to decrease the fear (known as compulsions). Compulsions can become time-consuming and distressing for patients, but sometimes patients feel as though the anxiety they experience when not engaging in compulsions is overwhelming. During ERP, patients are guided through exercises to help them avoid compulsions in response to their obsessions. Over time during numerous sessions, the brain can be retrained to not rely on compulsions to address obsessions.

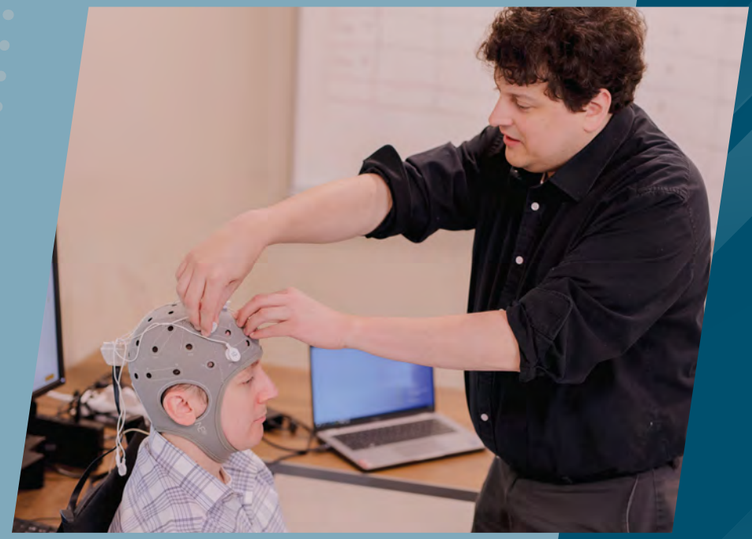
While ERP treatment for OCD has shown to be highly effective, its efficacy for any individual patient depends on their brain's ability to restructure thought processes. An intervention called Transcranial Direct Current stimulation (tDCS) has emerged as a promising technology to potentially help accelerate this restructuring of thoughts and complement the symptom improvement achieved with ERP. tDCS involves delivering a constant, low amplitude current to targeted regions of the brain through electrodes placed on the scalp. tDCS works by modulating brain activity and is less invasive and less expensive than other brain stimulation techniques. In a study currently underway in the Research Center, the tDCS protocol is designed to activate the medial prefrontal cortex, which is an area of the brain involved in fear extinction learning, the process targeted by ERP in OCD treatment. By administering tDCS immediately prior to ERP sessions, the team hopes to enhance the effectiveness of ERP.

Due to the investigational nature of the tDCS device, several steps were taken to ensure safe and compliant device use in accordance with FDA guidance on investigational devices. This study is registered on *clinicaltrials.gov*, and study personnel have been trained in placing the electrodes and administering tDCS safely and efficiently. Thanks to the generosity of the Sardella Family, the Research Center has acquired an additional tDCS device which will help accelerate the study timeline.

Participant recruitment begins in early 2024. Participants are being recruited from Rogers' partial hospitalization and intensive outpatient OCD programs in Oconomowoc, Wisconsin. Ten participants will participate in a pilot study that involves 10 sequential days of study visits in which they will receive either active or placebo tDCS stimulation. Treatment outcomes of the active and placebo participant groups will be compared, in addition to evaluating patient comfort and tolerance for the treatment, which is generally considered painless.

The ways in which tDCS creates longer-lasting changes in the brain are not yet fully understood, so the study team plans to eventually utilize EEG to directly measure brain function changes resulting from tDCS treatment. This data will be crucial to better understand the neurological functioning involved in OCD and to develop tDCS protocols that are optimal for treating severe OCD.

Study Team: *Jeff Engelmann, PhD; Katelyn Greenberg, MA; Holly Pelnar, BA; Victoria Hummel, BA; Maddie Hartig, MS*



Transcranial magnetic stimulation for the treatment of behavioral health conditions

Transcranial Magnetic Stimulation (TMS) is a safe, non-invasive, neuromodulation device that uses a magnetic field to stimulate nerve cells in the brain associated with certain brain processes believed to be related to behavioral health conditions. At Rogers, we have used TMS to treat major depressive disorder, obsessive-compulsive disorder (OCD), and eating disorders. However, there is limited evidence-based data in the medical literature for TMS treatment of OCD and eating disorders until it was recently cleared for OCD by the FDA in 2022.

Rogers Research Center and Rogers clinicians are collaborating on multiple retrospective studies to evaluate the safety and efficacy of TMS for treatment enhancement. Often, patients come to Rogers having tried multiple medications and other treatments that were not effective at reducing their symptoms. TMS is offered at Rogers as an adjunct, or enhancement, to the treatment they receive, which can include both pharmacotherapy and cognitive behavioral therapy. The study team is evaluating whether adding TMS to patients' treatment plans speeds up symptom reduction, which can lead to better and longer-lasting improvements.

Beyond major depressive disorder, OCD, and eating disorders, the study team aims to determine related disorders that may also benefit from TMS based on shared neurobiological mechanisms. With many of Rogers' patients exhibiting more than one mental health condition, the research can expand to analyze how TMS potentially impacts symptom reduction for complex symptoms. If the retrospective TMS data is compelling, it could suggest promising outcomes for related disorders and can be tested in prospective investigator-initiated studies. The study team intends to complete the TMS studies in 2024 and publish the findings.

Study Team: *Sheldon Garrison, PhD; Jeff Engelmann, PhD; Rachel Schwartz, PhD; Hana Zickgraf, PhD; Jennifer Schmitt, BS; Katelyn Greenberg, MS; Maddie Hartig, MS; Sreya Vadapalli, MBS; Holly Pelnar, BA; Tyler Rickers, DO; Brad Smith, MD; Nicolette Weisensel, MD*

Treatment response forecasting with predictive analytics

In an ongoing effort to provide greater individualized treatment and better risk identification in mental health care, there is a growing interest in integrating predictive data modeling into clinical practice. Predictive models use statistical methods to compare incoming information against a storehouse of data to determine the likelihood of an anticipated outcome. These models, or algorithms, can be trained to learn from new information over time to improve the accuracy of future predictions.

Rogers Online Assessment System (ROAS) is a set of Rogers' proprietary tools used to assign, collect, and store patient responses to clinically validated symptom assessments throughout their treatment at Rogers. The system has been in place since 2012, but more recently, Rogers' Data Analytics team is utilizing the data within the system to develop predictive algorithms to offer clinicians deeper insight into an individual patient's predicted and actual response to treatment.

This year, Rogers' Data Analytics team partnered with Rogers' Depression Recovery clinical leadership team to pilot a Treatment Response Forecast tool within ROAS using these predictive methods. The pilot included three Depression Recovery sites and three levels of care (residential, partial hospitalization, and intensive outpatient). The Treatment Response Forecast classifies each newly admitted patient into either a Response or Partial Response status based on their completed clinical assessments at admission. Patients with a Partial Response classification may be exhibiting a symptom profile that could be less likely to improve or to sustain improvement upon discharge. These patients could have longer lengths of stay at Rogers, as well as have a higher probability of readmission.

As a result of these insights, the Data Analytics team worked with clinicians to address what approaches and interventions may be most

effective when a patient returns to a Partial Response status. Clinicians were provided these resources when they were trained on how to interpret the Treatment Response Forecast in ROAS. The clinical teams have provided feedback throughout the project pilot and that feedback has been incorporated. In addition, the forecast tool has been trained to also incorporate responses to patient progress assessments versus relying solely on the admission data. Patients often learn more about their symptoms as treatment progresses, and their self-report assessments may become more accurately reflective of their current condition, which can help improve the predictive tool.

The Data Analytics team continues to collect and analyze data from the pilot project in the Depression Recovery program and is currently working on expanding the algorithm to other programs across the Rogers system.

Study Team: *Hanjoo Lee, PhD; Sala Lotfi, PhD; Jessica Cook, MS; Kaitlin Rouse, M.Ed.; Brian Kay, PhD*

Clinical Team Leaders in Pilot: *Angela Orvis, Psy.D; Megan Kurdi, LCSW; Ajeng Puspitasari, PhD, LP, ABPP*

Statewide mental health survey for first responders

First responders face unique stressors, including exposure to traumatic incidents, long and irregular work hours, disrupted sleep, and the potential for significant physical and emotional strain. These factors can contribute to elevated risk for conditions like depression, anxiety, post-traumatic stress disorder, substance use disorders, and suicidal ideation. For instance, the National Fallen Firefighters Foundation estimates that there are between 100 and 200 firefighter deaths by suicide every year. Many first responder advocacy groups are sounding the alarm on this crisis as the suicide rate among firefighters continues to exceed both the general population and on-duty mortality rates.

Since 2020, Rogers Research Center has partnered with the Professional Fire Fighters of Wisconsin Charitable Foundation (PFFWCF) to administer a mental health needs assessment survey to professional and volunteer Fire and EMS professionals across Wisconsin. The survey examines the impact of on-the-job critical stress and potential behavioral health consequences that arise as a result. The anonymous survey considers community type, role, professional status, work schedule, sex, years of service, critical incidents or traumatic events experienced, thoughts of self-harm or suicide, sleep issues, substance use, utilization of mental health services, and perceptions about mental health stigma within the field.

The year 2023 marked the fourth consecutive administration of the statewide survey, and the second year collecting the Professional Quality of Life (ProQOL) measure. The ProQOL survey is 30-item self-report tool designed to assess the impact of a person's work on their overall well-being and quality of life, particularly in professions that involve helping or caring for others. The ProQOL survey is commonly used in healthcare, social work, emergency services, and other caregiving professions. The survey measures three main components: Compassion Satisfaction (the positive aspects of helping others and the satisfaction derived from one's work), Burnout (the negative aspects of work-related stress, exhaustion, and fatigue), and Secondary Traumatic Stress (also known as vicarious trauma or compassion fatigue experienced by individuals as a result of exposure to the trauma and suffering of others).

The ProQOL is an optional addition to the full mental health survey, and of the 1,640 total participants in the 2023 administration, 854 participants opted to complete the measure this year. To our knowledge, this is one of the largest samples of firefighters to have been assessed using the ProQOL. Rogers Research Center intends to donate the deidentified data to the ProQOL databank, a core part of the science of development of the ProQOL measure, to help advance ongoing research on the survey tool.

Rogers Research Center continues to work alongside the PFFWCF in the collection and analysis of survey data that helps support advocacy, prevention, and intervention strategies to combat the mental health challenges of first responders across the state. Participation in the survey grows each year, providing a clearer picture of the prevalence of these challenges, progress toward reducing the stigma of mental health burdens in first responders, and the effectiveness and utilization of peer support and employee assistance program (EAP) resources.

Rogers Research Center is honored to be part of this important work and shares the vision of the PFFWCF for all those who serve others to be healthy, safe, and supported in their lives and communities.

Study Team: *Kelly Piacsek, PhD; Katelyn Greenberg, MS; Maddie Hartig, MS; Sreya Vadapalli, MBS; Sophie Schweinert, BS*

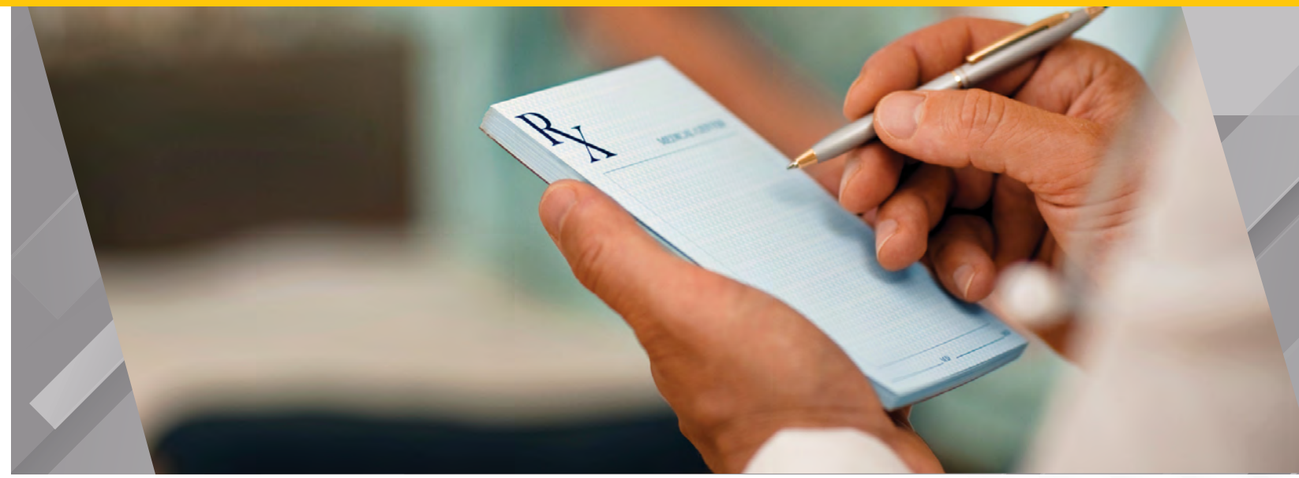
Co-occurring sleep disturbance in patients with eating disorders: prevalence, characteristics, and impact on treatment outcomes

Eating disorders are behavioral health conditions characterized by severe and persistent disturbances in eating behaviors and associated distressing thoughts and emotions. They can be extremely disruptive, affecting the physical, psychological, and social functioning of those experiencing them. Eating disorders are common and include a variety of conditions such as anorexia nervosa (AN), bulimia nervosa (BN), binge eating disorder (BED), other-specified feeding and eating disorders (OSFED) and avoidant/restrictive food intake disorder (ARFID). Sound evidence indicates that 50-80% of patients with an eating disorder experience sleep disturbances and sleep-related impairments such as difficulties falling or staying asleep, restless sleep, and daytime sleepiness. Numerous previous studies conclude that poor sleep quality is associated with worse eating disorder treatment outcomes. However, significant knowledge gaps still exist regarding the potential relationships between different types/symptoms of eating disorders, different sleep disturbances, and a wide range of other factors such as medications, age, gender, and comorbid conditions.

To attempt to better understand these relationships, Rogers Research Center has initiated a study to examine 3,000 patient charts from our adult and child/adolescent Eating Disorder Recovery programs to investigate these co-occurring conditions. The research team is examining the relationship between patient-reported changes in sleep disturbance, changes in eating disorder symptoms, and discharge eating disorder outcomes (symptom severity and likelihood of full remission). The study includes all Rogers' levels of care for Eating Disorder Recovery, including inpatient, residential, partial hospitalization, and intensive outpatient programs.

Recently approved by Rogers' IRB, the research team is processing preliminary data sets for this study and aims to report findings in 2025. The results of this work may produce deeper insights into the relationship between sleep quality and eating disorder symptomatology, and whether the hypothesized relationship between sleep improvement and eating disorder improvement can be detected in our sample and aid in informing future eating disorder clinical treatment strategies.

Study Team Members: *Hana Zickgraf, PhD; Rachel Schwartz, PhD; Jeff Engelmann, PhD; Sheldon Garrison, PhD; Nicole Stettler, PhD; Martin Franklin, PhD; Andrew Krystal, MD, MS (University of California San Francisco)*



The role of optimal pharmacotherapy in OCD

Initiated in 2021 and backed by the ongoing financial support of the Franklin Street Giving Tree Foundation, Rogers Research Center has accelerated its efforts to evaluate treatment effectiveness for pediatric OCD patients. The Research team began examining data collected from one of the largest samples of pediatric OCD patients reported in the literature thus far, finding that utilization of telehealth services was equally as effective as in-person treatment for reducing OCD symptoms and improving quality of life. These results were presented to multiple clinical and scientific assemblies during 2022 and published in 2023 in the Journal of the American Academy of Child and Adolescent Psychiatry – Open, a prominent journal in the field of pediatric psychiatry. Following this discovery, the Research team is making more headway, currently investigating how prescribed medications among the same patient sample impact treatment outcomes. This is the first large-scale real-world study on medication optimization for pediatric OCD.

An extensive body of research in the field indicates that effective medication management with standard cognitive behavioral therapy (CBT) yields better treatment outcomes than either alone. Notably, a significant proportion of patients in our pediatric OCD programs have been prescribed medication to help address their symptoms prior to admission at Rogers; however, these prescriptions vary and do not consistently adhere to FDA recommendations regarding medication type, dose, and duration. Thus, the study team is attempting to evaluate whether medication dosages at patient admission and discharge are clinically optimal, that is, effective for treatment, or sub-optimal, indicating a dose that is too low. More specifically, the team is examining changes in medication dosage after admission to Rogers and evaluating whether adjustments to patient pharmacotherapy regimens during treatment may predict treatment outcomes.

Data analysis for this follow-up study is ongoing and will continue into 2024.

In the fall of 2023, the research team launched a parallel study to examine the role of optimal pharmacotherapy and comorbidity in Rogers' adult OCD population. This retrospective study combines over 8,000 patient records, representing one of the largest samples ever studied, investigating medication optimization for this population.

Study Team: *Martin E. Franklin, PhD; Jeff Engelmann, PhD; Matthew Boyer, MD; Rachel Schwartz, PhD*

Evaluating the efficacy of FDA-approved recovery medications in an intensive treatment program for mental health and addiction

Many individuals who develop substance use disorders are also diagnosed with a mental health disorder, and vice versa. Although millions of adults suffer from this "dual diagnosis," few treatments exist that target both conditions, resulting in significant individual, familial, and societal costs. At Rogers Behavioral Health, Mental Health and Addiction Recovery (MHAR) employs cognitive behavioral therapy (CBT) techniques aimed at eliminating the abnormal thought patterns that underly mental health disorders and drive subsequent drug use. Additionally, several programs offer medication-assisted treatment (MAT), that is, the use of FDA-approved medication alongside psychotherapy to ease physical symptoms such as cravings and lethargy that an individual experiences when they stop using substances like drugs or alcohol.

Rogers Behavioral Health recognizes the importance of tailoring treatment to an individual's specific combination of disorders and symptoms within MHAR services, which requires careful consideration given the complexity of a "dual diagnosis." As a result, Rogers Research Center has initiated a retrospective study to evaluate the effectiveness of medication-assisted treatments on co-occurring disorders, particularly targeting our population of patients with alcohol and opiate addictions. Our research team is using patient-reported assessment data from past patients treated at Rogers to investigate the difference in treatment outcomes between three adult patient groups – those prescribed FDA-approved medications to treat substance use disorders, those taking other psychotropic medications (psychiatry medications approved for conditions other than substance-use disorders such as anxiety or depression), and those patients not receiving any medications for mental health or addiction recovery. Comparing treatment results between these groups will help highlight what is most effective at addressing both the addiction and mental health symptoms that patients experience and improve MHAR treatment strategies at Rogers.

Rogers Behavioral Health also developed a revised version of the AWARE (Advance Warning of Relapse) questionnaire, which was originally designed to be a predictor of relapse in alcohol use disorder. The modified version can be applied more broadly to include general substance use. By incorporating this questionnaire into the study, the research team can evaluate its ability to aid clinicians in predicting short-term relapse, and further improve treatment strategies for Rogers' patients.

Data analysis for this study begins in early 2024.

Study Team: *Jeff Engelmann, PhD; Michelle Maloney, PhD; Matt Boyer, MD; Martin Franklin, PhD; Katelyn Greenberg, MA; Holly Pelnar, BA*

A novel psychiatric phenotype of chromosome 4q deletion syndrome: a case report

The role of genetics in behavioral health is an area of emerging interest and exploration as medical and scientific experts learn more about how specific genes affect specific symptoms. Often, Rogers' patients present with complex symptomology, and clinicians collaborate to find the most effective treatment paths while learning how to treat patients with complex clinical presentations.

In 2023, a 7-year-old child who was admitted to Rogers' Child and Adolescent Inpatient Care presented with a constellation of symptoms that included cognitive impairment, speech disorder, sleep disturbances, aggressive behavior, speech delay, and feelings of insatiable hunger. Following evaluation, the child was diagnosed with Chromosome 4q Deletion syndrome.

Chromosome 4q deletion is a rare genetic disorder affecting an estimated 1 out of 100,000 people. This condition results from microdeletions of the long arm of chromosome 4, typically leading to variable clinical manifestations such as cardiac abnormalities, craniofacial and skeletal abnormalities, short stature, autism spectrum disorder (ASD), and developmental delays. While the psychiatric symptoms have been observed in some individuals with Chromosome 4q deletion, the emergence of insatiable hunger (hyperphagia) and sleep disturbances (parasomnias) are atypical and had not been previously reported in the medical literature.

A team of clinicians and researchers collaborated to write a case report centering on the distinctive presentation of Chromosome 4q deletion, particularly the hyperphagia and parasomnias. The patient's preoccupation with food and sleep problems were thought to have significantly contributed to the complexity of his behavioral presentation, particularly the intensity of aggression that necessitated psychiatric intervention. Importantly, irregular food-related behaviors are not uncommon among children, but the magnitude exhibited by this child was notably profound.

The case is not only relevant to the medical field to help advance understanding of the disease, but it also underscores the bigger role of genetics in behavioral health. Chromosomes, fundamental structures in the body's cells containing genetic material (DNA) are critical in determining how our body functions. The 4q chromosome region contains many genes, some of which are known to play important roles in early development. The severity and degree of symptoms depends in part on what and how much DNA is deleted. Ongoing research at Rogers focuses on exploring the involvement of specific genes and chromosomal regions in behavioral health conditions. The goal is to investigate the role of single and multiple genes in behavioral health while aiming to leverage this knowledge in enhancing treatment planning for affected individuals.

Study Team Members: *Sheldon Garrison, PhD; Sarah L. Vaithilingam, MD; Aman Mahajan, MD; John T. Diener; Julia F. Kranz, MSIV*

Treating OCD in pregnancy and postpartum: implications, outcomes, predictors, and clinical correlates

The perinatal period (pregnancy and postpartum) is associated with an increased risk of developing obsessive-compulsive disorder (OCD) and a worsening of existing OCD symptoms. Effectively treating perinatal OCD is essential, since left untreated, OCD can have severe, negative impacts on both the parent and infant. While several treatments such as exposure therapy and medications have been well-studied and are shown to be effective, safe, and well-tolerated in the general OCD population, perinatal patients have historically been excluded from clinical trials to minimize risk in experimental research. As a result, it is not known whether first-line treatments are effective, safe, and tolerable for pregnant individuals with OCD.

This is particularly true for exposure therapy, a type of cognitive-behavioral therapy that involves gradually approaching fears. Significant research evidence supports the use of exposure therapy to treat OCD symptoms; however, exposure therapy is stress-inducing by design, which raises questions about its safety and appropriateness for pregnant patients. Some argue that exposure therapy during pregnancy is most likely safe and outweighs the risks of leaving OCD untreated or taking medications that may harm the fetus.

However, there has been no scientifically rigorous research addressing this question; nor are there formal clinical guidelines about how to treat pregnant clients.

The research team's study aims to use existing patient data to answer crucial questions related to the efficacy, safety, and tolerability of standard OCD treatments during pregnancy and postpartum. The study will compare patients with perinatal OCD to an equivalent number of patients with OCD, who are neither pregnant nor postpartum but comparable in terms of demographic and clinical characteristics. By comparing these two groups, our study team expects to learn:

- Whether pregnant and postpartum patients receive different types and intensities of treatment compared to non-perinatal patients
- Whether standard OCD treatments are adapted for use with perinatal patients, and if so, how
- Which treatments are most effective, safe, and tolerable during the perinatal period
- What factors predict treatment outcomes during pregnancy

Launched in late fall 2023, this study is in the data analysis phase. This investigation will contribute to the limited literature and research of perinatal OCD and help us understand how perinatal patients with OCD are being treated in a real-world setting. This is critical for the future development of clinical guidelines to assist both patients and providers in making optimal treatment decisions.

Study Team Members: *Rachel Schwartz, PhD (Rogers); Erica Weitz, PhD (University of Pennsylvania, Perelman School of Medicine)*

Validating the Brief Addiction Monitor assessment in adolescents

The rates of vaping and daily alcohol use have continued to increase among adolescents over the past several years, and the ongoing opioid crisis continues to impact youth. Prior research documents the risks associated with adolescent substance use and efficacy of addiction treatment interventions in teens, but much less is known about assessment tools that can be used to monitor adolescents' progress toward recovery. Assessment tools help clinicians understand the extent of substance use and the effects of substance use disorders on daily life. Assessment tools can also be used to inform treatment interventions so that clinicians can monitor treatment effectiveness and outcomes for individual patients.

The Brief Addiction Monitor (BAM) is a 17-item instrument that assesses risk factors for substance use, protective factors that support sobriety, and related substance use behaviors. The BAM is often used to monitor treatment progress, screen for substance use disorders, and assist in treatment planning. While the BAM has been demonstrated to be reliable and valid for use with adults, there is currently no reliable and valid progress measure for substance use disorders among adolescents. When mental health assessment instruments like the BAM are first created, data is collected on an initial sample of people. By doing this, the creators of the instrument discover "norms," or expected score ranges that reflect the presentation and severity of symptoms. This allows for future researchers and clinicians to make comparisons and gain a measurable understanding of the patient's condition, which, in turn, helps clinicians evaluate and establish evidence-based, standardized treatment procedures.

At Rogers, researchers created a modified version of the BAM that is tailored to the adolescent population. The adolescent version is scored in a way that is intended to more accurately reflect the experiences of younger patient populations. Led by Jeff Engelmann, PhD, and Dr. Michelle Maloney, PhD, the current study analyzes data collected using this modified version of the BAM to determine whether it is an accurate and reproducible measure of progress toward recovery for adolescents with substance use disorders. In addition to collecting normative data, the team will examine the potential for the changes in a patient's scores on the modified BAM during treatment to help predict treatment outcomes such as abstinence, successful discharge from Rogers, or transitioning to a more intensive level of care at Rogers. This work will contribute valuable information to existing research on the BAM, which may help to expand the BAM's use and accuracy across various treatment settings and age groups, potentially supporting improved treatment outcomes for patients.

Study Team: *Jeff Engelmann, PhD (PI); Hanjoo Lee, PhD; Jessica Cook, MS; Michelle L. Maloney, PhD, LPC, CAADC; Salahadin Lotfi, PhD*

Quality improvement: anxiolytic management in patients with eating disorders

Rogers Behavioral Health provides comprehensive Eating Disorder Recovery programs that focus on high-quality evidence-based treatment strategies with demonstrated effectiveness in symptom reduction. Rogers' eating disorder programs utilize a form of cognitive-behavioral therapy (CBT) called exposure therapy where patients progress through a hierarchy of exposures starting from least-distressing to most-distressing. Exposure therapy allows an individual to confront fears that lead to avoidance behaviors in a safe environment where they can progressively work to reduce their anxiety around the fears that contribute to their eating disorder. Anti-anxiety medications, or anxiolytics, may also be incorporated into an individual's treatment to help lower anxiety so the individual can begin to progress through exposure therapy. However, the effectiveness of anxiolytic therapy and concerns it may compromise the potential gains from intentional anxiety-provoking components of exposure therapy pushed a clinical and research collaborative team at Rogers to study these concerns. The team analyzed the outcomes of patients previously treated at Rogers for eating disorders who were prescribed anxiolytics compared to those who were not.

The study team analyzed admission, progress, and discharge assessments of 4,598 patients treated for an eating disorder in Rogers residential, partial hospitalization, or intensive outpatient programs over a six-year period. The study found marked improvement in eating disorder symptom severity whether or not patients were prescribed anxiolytics. Mild levels of eating disorder symptoms were achieved by the time of discharge, as assessed using the Eating Disorder Examination Questionnaire and Yale-Brown Cornell Eating Disorder Scale. These findings suggested that anxiolytic therapy did not negatively impact CBT efficacy. The results of this study are currently under review in a leading journal, with the goal of disseminating the results within the broader mental health treatment community.

The study team would like to acknowledge Kyle Carini from Rogers' Data Analytics department, who extracted and analyzed the study data.

Study Team Members: *Brad Smith, MD; Sheldon Garrison, PhD; Katelyn Greenberg, MS*

"Not Just Right" (incompleteness) OCD: treatment outcomes and clinical correlates

Obsessive-compulsive disorder (OCD) is a psychiatric condition in which a pattern of unwanted thoughts known as obsessions lead individuals to engage in repetitive behaviors called compulsions. OCD is common and highly impairing. While effective OCD treatments exist, up to half of OCD patients do not respond to first-line treatments. Understanding which patients are not being helped by existing treatments is important to improving outcomes, yet researchers have struggled to achieve consistency in identifying which patients may not achieve therapeutic relief.

One reason for mixed findings may be that the field has traditionally focused on the what of OCD, which may be less important than the why. There are many reasons someone with OCD may perform a compulsion. For instance, the purpose of hand washing may be to prevent an illness, but it also may be to achieve a particular "just right" feeling that is unrelated to feared outcomes. This means that saying someone has "washing OCD" may overlook information that could predict how they will respond to treatment: that is, why the person does washing compulsions.

In response to limitations in the way OCD subtypes are defined, researchers have proposed an alternative subtyping system that emphasizes two possible behavior motivations. First, Harm Avoidance is the motivation to perform compulsions in order to prevent feared results, such as contracting an illness. Incompleteness, on the other hand, is the motivation to do compulsions to counteract "not just right experiences," or to achieve a feeling of inner completeness. Prior studies suggest that Incompleteness OCD may be associated with poorer treatment outcomes, but there has been little research examining this question, especially in more intensive treatment settings and with children.

Investigators at Rogers Research Center are analyzing data from more than 11,000 patients enrolled in the OCD and Anxiety service line, which includes both adults and youth, to explore whether different levels of Incompleteness ("Not Just Right") OCD are associated with better or worse treatment outcomes at Rogers. The team will also utilize this data to attempt to improve the assessment of "not just right" symptoms in Rogers' pediatric OCD programs.

We expect that this study will add to the very limited literature on treating Incompleteness OCD in both adult and pediatric populations and will lead to advancements in developing or tailoring treatments for this underrecognized subtype. For youth with OCD, this will also be the first study conducted in the context of an intensive treatment setting.

Study Team Members: *Rachel Schwartz, PhD; Jeff Engelmann, PhD; Hana Zickgraf, PhD; Sreya Vadapalli, MBS; Martin Franklin, PhD*

Retrospective analysis of the impact of canine-assisted intervention in a residential treatment program for OCD

While many people recognize the informal role animals play in providing comfort to individuals, research points to the potential benefits of animal-assisted intervention in mental health treatment programs. In 2021, Rogers launched a Canine Assisted Intervention (CAI) program at its Oconomowoc, Wisconsin campus to enhance treatment programs for adults and adolescents with OCD, anxiety, and depression. Quantitatively assessing the benefits of integrating CAI into treatment programming is a topic of great interest to Rogers' clinical and research teams.

Rogers Research Center has initiated a retrospective study examining the influence of CAI on both adult and adolescent patients enrolled in residential OCD treatment. The research team will evaluate outcomes from patients who have previously completed at least one session of CAI. Quantitative assessment of OCD symptoms, depressive symptoms, social anxiety, and overall affect as reported by the patients themselves before and after each treatment session will be included in the analysis.

Preliminary data analysis began in 2023 for adult and adolescent patients enrolled in residential OCD treatment who had participated in a CAI session. Initial results point to reductions in patient anxiety levels and an improvement in the patient's readiness for treatment after a single CAI session. These results are encouraging, and the research team is working to expand the analysis to determine the long-term outcomes of this treatment on OCD symptoms and to help identify patients who are most likely to respond to CAI.

As a next step, a matched control group with similar characteristics and symptoms but without having received CAI, will be added to the study. This "benchmark" patient population will allow our study team to compare outcomes between the two groups and determine how effective CAI is as an enhancement to standard treatment.

Study Team: *Jeff Engelmann, PhD; Kelly Piacsek, PhD; Rachel Schwartz, PhD; Katelyn Greenberg, MA; Maddie Hartig, MS; Rachel Lopez, BA; and collaborators Danielle Schilling, Experiential Therapist; Mariah Skindingsrude, Experiential Therapist (pictured on the right); and Deana Grall, Manager of Experiential Therapy (pictured on the left); Kobe, Therapy Dog.*

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