The global mental health care crisis has become progressively dire and has catapulted depression to the number one cause of disability worldwide.

This crisis has come at a staggering cost, which results not only in an enormous amount of human misery and lost health, but also economic consequences. Estimates place the economic cost of untreated depression/behavioral health to be more than 200 billion dollars.

Lack of access to treatment and inefficient models of care lie at the heart of the crisis. Those seeking proper diagnosis and management of their depression can be faced with barriers such as medically underserved communities, socio-economic factors, as well as cultural and societal stigmas.

Out of this backdrop the UICDR Digital Mental Health Initiative (DMHI) was born. The DMHI is a collaborative, transdisciplinary group of clinicians, researchers, and other experts.

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The UICDR continues to redefine mental healthcare with 21st century world class medical care; guided by a vision of innovation and excellence.

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educators and stakeholders working to improve equitable access to mental health treatment with innovative smart, connected technology. The DMHI supports cutting-edge research to develop evidence-based digital tools, apps, inventions and other technology based mental health treatment.

“Historically, the UICDR has been pioneering research and custom treatment, and pushing the edge of what’s possible. With a commitment to new strategies, new treatments, novel approaches to realize tomorrow’s medicine today. DMHI is a natural extension and evolution of our vision,” says Anand Kumar, MD, Director of the UICDR.

The Rise of Digital Health
The rise of digital health has caused a seismic shift to the medical landscape. Every discipline of medicine has been touched by medically cultural changing disruptive technologies. Mobile and connected technologies continue to rapidly evolve to advance mental health. In fact, there are over 10,000 mental health related smartphone apps available for download1.

Digital technologies can serve as a communication bridge between providers and patients, capturing mental health symptoms in real time, and allowing patients to get care and support when and how they need it. “The advantages of digital mental health are many, from reducing cost, empowering patients to help manage their healthcare, and allowing health providers a means to augment their treatment,” says Benjamin W. Van Voorhees, MD, MPH, member of the UICDR and Head, Department of Pediatrics at UIC Children’s Hospital, University of Illinois Hospital & Health Sciences System.

DMHI is one of only a handful of university-based digital mental health programs of its kind in the country. “It’s imperative that UICDR, as a nationally recognized leader the advancement of research and treatment of mood disorders, be at the forefront of digital mental health treatment,” says Dr. Kumar.

Health equity through innovative artificial intelligence (AI) and technology based treatment AI is already transforming mental health. Innovative technology offers new opportunities to millions affected by various mental health conditions.

AI and technology based treatments offer the opportunity to “level the playing field” when it comes to access to mental health treatment.

“We envisioned our programs and initiatives as stigma-free effective treatment options for depression, bipolar and mood disorders, reaching people who would otherwise not receive help, by removing major access barriers to treatment,” says Dr. Kumar.

Realizing of the full potential of AI for improving global mental health is contingent upon the development of customized technologies steeped in preventative care that help patients monitor and manage their conditions, and makes treatment more tailored to individual needs. That means using patient-centered design when developing and implementing new digital applications to avoid the criticisms that have been leveled at digital health technology such as biased machine-learning models, lack of affordability and inconsistent accessibility.

Meeting the challenge
Some of the greater concerns with many forms of digital interventions are no evidence of efficacy, and the compromise patient privacy. Most mHealth and digital health products on the market deal with very sensitive personal information.

BiAffect, the DMHI’s depression detection app, holds the distinction of being one of the very few, which can substantiate its claims for effectiveness.1

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Addressing the void of affordable and accessible mental health services, the University of Illinois at Chicago’s Department of Psychiatry has opened a Bipolar Clinic.

Since its opening in February 2019, the clinic has provided state-of-the-art care for patients who carry a diagnosis of any subtype of Bipolar Disorders. “We offer comprehensive care and advanced technology in our modernized care environments for who anyone seeking or are already receiving treatment for Bipolar Disorders,” says Alex Leow, MD, PhD, member of the UICDR and Director of the Bipolar Clinic.

Bipolar Disorder is one of the most misunderstood mental health conditions. The condition causes a person to experience intense mood swings that alternate between emotional highs and lows (mania and depression). An estimated 4.4% of U.S. adults experience bipolar disorder at some time in their lives. An estimated 82.9% of people with bipolar disorder had serious impairment, the highest percent serious impairment among mood disorders.

Although the clinic addresses the gaping holes in mental health services in Chicago, the clinic also serves as a means to advance medical provider training, clinician and patient experiences and improved diagnosis and treatment. “There had been an ongoing request from our psychiatric medical residents to have a specialty clinic for Bipolar Disorders, so that they may receive psychopharmacology training for this condition that is challenging and at the same time very rewarding to treat says Dr. Leow.

Left untreated, bipolar disorder can be a debilitating burden for most individuals and their families. And although Bipolar Disorder is a lifelong condition, with the comprehensive effective treatment our clinic offers, individuals will be empowered with the ability to manage their mood swings and other symptoms.
Recent UICDR Publications


A constant threat to data mining digital interventions is unauthorized access to personal information and data, so it’s vital digital health product developers need to be able to guarantee privacy for users.

“Ours is a highly ethical approach, where privacy is of the highest priority. For example, with BiAffect, the app unobtrusively monitors keyboard dynamics metadata, the metadata, but not the content of the text, is analyzed using an artificial intelligence-based machine learning approach to identify digital biomarkers of mood disorders. This pioneering platform would serve as a “fitness tracker” of the brain, with the ultimate goal of addressing the needs of a population that is often tech-savvy but currently poorly served by existing mHealth tools, thereby removing the barriers to treatment.

**DiaBetty**
DiaBetty utilizes Amazon’s Alexa platform as a diabetes coach and educator that is sensitive and responsive to the patient’s mood. The artificial intelligence-based technology is designed to assist patients newly diagnosed with type 2 diabetes. Given the issues of diabetes-related stress and the negative impact of depressive symptoms on type 2 diabetes, patients are in need of solutions to help manage diabetes in the context of their mood and lifestyle.

**Sunnyside for Moms**
Sunnyside for Moms, combines state-of-the-art mental health screening with an online intervention that has demonstrated success in reducing depressive symptoms during pregnancy and preventing the development of a postpartum depressive episode.

**CATCH-IT Program**

The CATCH-IT preventive intervention (Competent Adulthood Transition with Cognitive, Humanistic, and Interpersonal Training) is a primary care, technology-based depression prevention program targeting adolescents who are at risk for depressive illness.

CATCH-IT was developed with the purpose of reducing the morbidity of depression and other common mental disorders during adolescence; CATCH-IT is based on a theoretical model of strengthening individual and family coping using an internet-based learning model that combines therapeutic modalities (cognitive-behavioral interventions, motivational interviews in the primary care setting and parent training) with an ecological framework. The CATCH-IT “technology based behavioral vaccine model” has had continuous funding for 17 years, and has included both traditional phase 1, 2, and 3 clinical trials; cultural adaptations; and global health applications.

As the world of digital mental health expands, the UICDR will continue its pursuit to remain at its forefront. Redefining mental healthcare with 21st century world class medical care; guided by a vision of innovation and excellence.