

PARTNER PERSPECTIVE

CAMH: Leaders in Mental Health Research



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Two years ago we established CAMH's Campbell Family Mental Health Research Institute, with an aim of better understanding the brain's role in mental illness and addictions. This dedicated focus has had a tangible impact on brain research at CAMH. We've recruited international experts, embarked on

paradigm-shifting lines of research and increased our scientific output.

Yet ongoing challenges face all researchers who study this complex organ – challenges we need to address to make the discoveries that will improve the quality of life for the people we serve.

First is harnessing the full potential of our research. Each high-impact advance we make at CAMH contributes to a greater understanding of the brain. It also generates huge amounts of data. Integrating and sharing this data is now considered essential to make true progress in our collective goal of developing brain-based treatments for mental illness.

The second challenge is translating brain-related discoveries into better clinical care. This process can take years. It requires highly skilled staff to manage large multi-site clinical trials, government regulatory approvals and commercialization efforts.

CAMH is well-positioned to address both of these ongoing challenges.

Our scientists are active in international data-sharing networks. As one notable example, CAMH's Campbell Institute was the only Canadian site involved in one of the most significant schizophrenia genetics studies to date. The study, published in July in *Nature*, identified 108 genetic variations associated with the illness.

Dr. Jo Knight headed CAMH's contribution as part of the international Psychiatric Genomics Consortium. These breakthrough findings, which identified new brain targets for treatment, were only achieved by pooling genetic data from nearly 150,000 individuals by researchers in more than 80 institutions. Ongoing work of the consortium means further discoveries are likely. Strengthening our capacity for data sharing both within CAMH, and with external networks is a priority.

As Canada's leading research hospital on mental illness and addictions, we have significant expertise in moving lab-based research to clinical trials. One model example is the Temerty Centre for Therapeutic Brain Intervention, part of the Campbell Institute. Under the direction of Dr. Jeff Daskalakis, a core team of scientists is using non-invasive brain stimulation techniques to investigate how brain physiology changes in mental illness, and applying these findings to clinical studies.

Brain stimulation holds the greatest hope for people who haven't had success with medications or talk therapy, often after years of trying. For one in three people with depression, current treatments don't work. As clinicians, we call this treatment-resistant illness.

What it means for our patients is a poor quality of life, and a much higher risk of suicide and homelessness. Such patients might be candi-

dates for ECT, which is effective but requires anesthetic, has risks such as long-term memory loss, and a high degree of stigma associated with it.

But there are alternatives. Repetitive transcranial magnetic stimulation (rTMS), a type of brain stimulation, alleviates symptoms in up to 50 per cent of patients with treatment-resistant illness, and many achieve complete remission. Using small coils placed on the scalp, rTMS stimulates neurons in part of the brain thought to be underactive in people with depression with few, if any side-effects. The Temerty Centre is continuing to refine this treatment and apply it to other conditions such as obsessive compulsive disorder and anorexia nervosa.

Through our studies of rTMS and other brain stimulation approaches, we've helped people who've had depression for decades get their lives back, to enjoy their relationships, work and other fulfilling activities.

How do we use our knowledge to improve clinical care more widely? By working with policy-makers to provide greater access to evidence-based treatments. Through collaborating with companies that develop brain stimulation technologies to test if treatment can be more effective. By establishing networks with other experts such as the new Canadian rTMS Treatment and Biomarker Network in Depression (CARTBIND).

These types of activities at the Temerty Centre, and elsewhere in the Campbell Institute, are crucial for progress.

So while we can say with confidence that CAMH's Campbell Mental Health Research Institute has had a successful two years, we're also committed to undertaking these efforts and tackling the ongoing challenges to ensure that our research has a tangible impact in improving people's lives.